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# Leader–Member Conversational Quality: Scale Development and Validation Through Three Studies

Guowei Jian<sup>1</sup>, Xiaowei Shi<sup>2</sup>, and Francis Dalisay<sup>3</sup>

## Abstract

The continuing development of leadership research calls for measurement instruments that can tap into the communication process between leaders and members. The purpose of this present research is to develop and validate a Leader–Member Conversational Quality (LMCQ) scale—an instrument that measures the quality of conversations between leaders and members in the workplace. A series of three studies were conducted. Study I involved item generation and content validity assessment. Study II undertook the task of scale construction and reliability assessment. Study III tested the convergent, discriminant, and criterion-related validity of the scale. These studies resulted in a nine-item instrument with sufficient psychometric properties. The ability of the instrument to assess conversational practices quantitatively will help generate greater insights into leader–member communication dynamics and their consequences.

## Keywords

leadership, leadership communication, leader–member exchange, LMX, organizational communication, conversation, scale construction

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Research on leader–member exchange (LMX) theory has witnessed tremendous expansion in the past 40 years (Dulebohn, Bommer, Liden, Brouer, & Ferris, 2012; Gerstner & Day, 1997; Graen & Scandura, 1987; Graen & Uhl-Bien, 1995; Liden, Sparrowe, & Wayne, 1997; Schriesheim, Castro, & Cogliser, 1999; van Breukelen, Schyns, & Le Blanc, 2006). However, a fine-grained understanding of the leader–member communication process and its consequences is still to be developed. LMX researchers have long inferred that interactional dynamics in communication are central in driving relational outcomes characterized as high, low, or medium quality (Fairhurst, 2001). Although researchers on LMX communication, such as Fairhurst (1993), have provided intriguing qualitative findings in this regard, further development of quantitative measures on leader–member interaction and conversational processes is necessary to allow greater insights into the patterns of association with relational quality, developmental processes, and other related individual and organizational constructs.

The purpose of the present research is to help bridge this gap by developing the Leader–Member Conversational Quality (LMCQ) Scale, an instrument with the intent to measure the quality of conversation between leaders and members in the workplace. The scale development is based on the *interactional richness* construct as developed by Barry and Crant (2000) and grounded in both informational and interpretive views of communication (Deetz, 2001). We expect that our efforts contribute in several ways to organizational communication research and LMX literature. First, the measurement provides a much-needed instrument to assess a central aspect of the leader–member relationship dynamic. Second, the scale lends many opportunities to test hypotheses that connect communication behaviors to individual, group, and organizational outcomes. Third, in a practical sense, the scale provides managers and employees with an additional diagnostic tool that can help gauge and improve their communication practice at work and enhance performance.

The remainder of this article first provides a brief overview of LMX research, the issues surrounding LMX measures, and the rationale for an LMCQ scale. Next, the article establishes the conceptual basis of the scale. Following the conceptual development is a presentation of three studies of scale development: Study I describes item generation and content validity assessment; Study II is devoted to scale construction and reliability assessment; Study III, using a different sample, performs scale validation, including the assessment of the convergent, discriminant, and criterion-related validity of LMCQ. The article concludes with a discussion of the scale's theoretical and practical significance, its limitations, and directions for future research.

## Rationale

Since its initial development in the 1970s (Dasereau, Graen, & Haga, 1975; Graen, 1976; Graen & Cashman, 1975), LMX research has now evolved into an influential approach to leadership and amassed an impressive record of empirical findings (Dulebohn et al., 2012; van Breukelen et al., 2006). Its theoretical appeal lies, first, in its attention to the dyadic relationship between leaders and members. Unlike many leadership theories that focus on leader cognitive processes or behaviors, LMX theory argues that the relational dynamic between leaders and members makes a difference in the influence process and on individual and organizational outcomes (Graen & Uhl-Bien, 1995). Second, unlike theories of average leadership styles (ALS), LMX theory argues that leaders develop differential relationships with their followers, ranging from low to high (Graen & Uhl-Bien, 1995). High-quality LMX relationships are characterized by deep trust and loyalty, strong mutual respect and support, and large negotiation latitude, whereas low-quality LMX relationships are largely bound by the terms of employment contracts and characterized by economic exchanges of efforts for remuneration (Graen & Uhl-Bien, 1995; van Breukelen et al., 2006). LMX theory also argues that an LMX relationship is dynamic and has the potential to grow and change as circumstances evolve and as the two parties continue interacting and working out their respective roles (Graen & Uhl-Bien, 1995). Empirical research, thus far, has offered support for a plethora of antecedents and outcomes in relation to LMX (for review, see Dulebohn et al., 2012). In spite of the gradual sophistication in the research and theories of LMX, the measures of LMX remain problematic and demand further attention. Our rationale for developing a measure to assess conversational quality of LMX has to be understood in relation to existing LMX measures.

As we know, a sound measurement of a construct is critical to the theoretical development of LMX. Endorsed by Gerstner and Day (1997) in their widely cited meta-analysis and Graen and Uhl-Bien's (1995) influential theoretical review, the seven-item measure, known as LMX7, has since been broadly adopted. In spite of the popularity of LMX7, questions have been raised from two directions regarding the adequacy of the instrument. The first challenge has to do with the dimensionality of the LMX construct. LMX7 implies unidimensionality, assessing an overall LMX relational quality. By contrast, based on role theory (Graen, 1976) and social exchange theory (Blau, 1964), Liden and Maslyn (1998) argued that the currencies of social exchange are multi-dimensional. For example, affect or liking is different from professional respect although both are involved at various levels in the social exchange between leaders and members. Based on a multi-dimensional

conceptualization of LMX, Liden and Maslyn (1998) proposed a multi-dimensional measure (MDM) of LMX, known as LMX-MDM. This measure includes four dimensions: affect, loyalty, contribution, and professional respect. However, the proponents of LMX7 argued that, although several dimensions may exist conceptually, they are highly correlated and better interpreted as being one-dimensional (Graen & Uhl-Bien, 1995). Also, other critics of LMX-MDM contend that the MDM may have excluded other important dimensions, such as trust (Bernerth, Armenakis, Feild, Giles, & Walker, 2007).

In addition to the questions on the dimensionality of existing LMX measures, the most recent critique questioned the content validity of both LMX7 and LMX-MDM. More specifically, Bernerth et al. (2007) argued that in spite of claiming social exchange theory as the basis for these measures, their items, in fact, do not assess social exchange. Rather, the measures to a large extent tap into affect and loyalty that one party holds toward another. Based on this critique, Bernerth et al. (2007) proposed a measure of leader-member social exchange (LMSX), faithfully assessing the process of social exchange (Cropanzano & Mitchell, 2005). An example of an item from this measure includes, "if my manager does something for me, I will return the favor at some point" (p. 987).

Thus far, we have reviewed three major extant measures of LMX with LMX7 and LMX-MDM assessing the affective relational quality and LMSX the social exchange quality, respectively. We argue that what is lacking in these existing measures is the assessment of communicative exchange that focuses on conversational practices. Here, we do not mean that communication has not been studied or assessed in the context of leader-member relationships. In fact, scholars from communication and other disciplines have contributed a great deal in this direction. For example, previous studies examined communication satisfaction (Mueller & Lee, 2002), person-centered communication (Fix & Sias, 2006), upward influence tactics (Krone, 1992; Shi & Wilson, 2010), cooperative communication (Lee, 1997, 2001), supervisory communication (Abu Bakar, Dilbeck, & McCroskey, 2010), maintenance communication tactics (Waldron, 1991), and communication frequency (Kacmar, Witt, Zivnuska, & Gully, 2003), to name a few.

In spite of these insights on communication, we argue that greater focus should be devoted to examining conversational practices. This focus on conversational practices is important and necessary for several reasons. First, at the most basic level, LMX is constituted in conversation and interaction (Taylor & Van Every, 2000; Weick, 1995). Within the broader discussion of an organization's ontological origin, Taylor and Van Every (2000) eloquently

presented a view of organization as “realized in day-to-day interactions of its members” (p. 141) and conversation being the medium of interaction. Citing Sacks, Schegloff, and Jefferson (1974), Taylor and Van Every (2000) argued, “[c]onversation is ‘the primordial scene of social life’—the invariable site of the emergence of organization” (p. 288). With regard to the communicative construction of LMX, Fairhurst and her colleagues (Fairhurst, 1993, 2007; Fairhurst & Chandler, 1989) furnished the strongest empirical evidence so far on the ways in which LMX is constructed through specific conversational practices. For example, Fairhurst (1993) found that different discursive moves are associated with various levels of LMX relationship quality. To deepen our understanding of LMX, Fairhurst (2001) called for scholars’ attention to the *conversational practices* of LMX.

The development of an instrument to measure conversational quality at the interactional level will allow more finessed insights into leadership processes and effects. For example, such a measure would enable scholars to examine whether and how conversational quality is associated with member outcome variables, such as performance and satisfaction. Such insights would not only enhance leadership communication theories but also lead to concrete intervention strategies for practitioners. Hence, the overall purpose of this article is to develop a scale to measure LMCQ. The next section will conceptualize the theoretical domain of this scale.

## Conceptualizing LMCQ

As we presented above, existing measures of LMX focus more on the affective and cognitive aspects of relational quality and lack the assessment of communication quality. To conceptualize the theoretical domain of LMCQ, we found the theoretical construct of *interactional richness* developed by Barry and Crant (2000) particularly useful. Barry and Crant depicted *interactional richness* with three key characteristics. First, it involves *communication efficiency* in both meaning interpretation and information exchange. As they stated,

As communication relationships develop and social distance decreases, it follows that individuals within the dyad communicate more expertly and efficiently—saying and meaning more, with more accurate reception and comprehension, using fewer words and symbols. This expertise and efficiency marks dyadic interaction as high in informational and symbolic content; hence the dyad itself is “interactionally rich.” (p. 651)

Terse storytelling (Boje, 1991) in leader–member dyads, as illustrated by Fairhurst (2007), is a good example of communication efficiency. Shared

context, goals, and meanings allow the co-construction of a story through abbreviated plots and truncated sequences.

The second characteristic is *coordination*, described as “interactional synchrony,” a term borrowed from research on social interaction (Bernieri, Davis, Rosenthal, & Knee, 1994) for a result of “shared systems of meaning through prior experience, communication behavior, and the development of appropriate social-cognitive structures (e.g., relationally relevant perceptions, norms, attributions, and expectancies)” (p. 651). Again, Fairhurst (1993) demonstrated coordination in the alignment of discursive moves where leaders and members can anticipate and punctuate the other’s next move, such as in patterns of “spiraling agreement” (p. 329).

*Accuracy* in meaning interpretation is the third characteristic of interactional richness. This characteristic takes on special significance given that the work context where interaction largely takes place centers on achieving particular work objectives. The extent to which meanings are accurately shared affects the quality and effectiveness of work.

Taken together, the three characteristics of interactional richness capture the conceptual meaning of conversational quality. Thus, we extend Barry and Crant (2000) and define LMCQ as the degree to which the conversation between a leader and his or her member is “efficient (high in symbolic content), coordinated (characterized by synchronous interaction), and accurate (symbolic meaning is shared and appropriately interpreted)” (p. 651). Based on this conceptualization, we designed and tested a LMCQ measurement instrument through a series of three studies, which we report below.

## **Study I: Item Generation and Content Validity Assessment**

### ***Purpose***

Study I consisted of two steps. In Step 1, we operationalized the construct by deductively generating scale items. We chose a deductive approach to item generation for two reasons: Our construct has a clear conceptual basis as established above, which allows adequate guide for item development; also, as Hinkin (1998) suggested, a deductive approach has the advantage of assuring content validity in the sense of covering the domains of interest within a construct. Step 2 was a content validity assessment of the generated scale items. Our purpose for this step was to assure that the generated scale items indeed measure communication behaviors instead of the affective or cognitive aspects of a relationship as other existing LMX measures do.

## *Item Generation*

In the process of designing the measurement instrument, we were confronted with three possibilities in terms of measurement method: member's self-report, leader's self-report, or a third-party observer's report of leader-member conversational behavior. Existing research on LMX (e.g., Zhou & Schriesheim, 2009, 2010) has shown that these choices are not simply a methodological one. Instead, these perspectives are conceptually different because each party's perspective or perception of a relationship may enable a different course of action and produce different outcomes. The relationship among the three perspectives is not so much a matter of triangulation but of crystallization (Richardson, 2000), that is, creating a fuller understanding of the phenomenon. We believe that a more complete understanding of conversational quality requires the measurement from all three perspectives. However, given the exploratory nature of our attempt at scale construction, we chose to adopt member self-report as a starting point with the understanding that future research will adapt the measure for leader and third-party perspectives and test its performance. In addition to measurement methods, another concern has to do with the modality in which conversations may take place at work, such as face-to-face versus mediated. Although technology-mediation, such as conversation via Skype, may pose unique challenges in the form of antecedent factors that may influence conversational quality, we argue that our definition of conversational quality is capable of capturing the construct independent of modalities. Certainly, this assumption could be put to empirical tests in the future. For now, we decided to create scale items without specifying the modality of conversation.

Hence, based on the conceptual definition and assumptions discussed above, we generated 15 items (Table 1). Five items were developed for each of the three characteristics. For example, for communication efficiency, we created the item, "when discussing work-related matters, my supervisor and I can convey a lot to each other even in a short conversation"; for coordination, an item reads, "when talking about how to get things done at work, my supervisor and I align our ideas pretty easily"; for accuracy, an item states, "my supervisor and I interpret each other's ideas accurately when discussing work-related matters." Among these 15 items, 3 were negatively worded. We were aware that scholars disagree on the use of negatively worded items. For example, their inclusion may mitigate response pattern bias (Hinkin, 1995). However, Hinkin (1995) argued that their inclusion might cause some concerns, such as introducing systematic error (Jackson, Wall, Martin, & Davids,



**Table 1.** Study I: Content Validity Ratings by Eight Raters.

Items	CVR <sup>a</sup>
LMCQ	
With regard to getting things done, the conversations between my supervisor and me are efficient. (Efficiency)	.75
My supervisor and I have the right amount of conversations necessary to get jobs done at work. (Efficiency)	.50
The conversations between my supervisor and me have a lot of unnecessary back-and-forth when we try to accomplish work tasks. (Efficiency) <sup>b</sup>	.50
When discussing work-related matters, my supervisor and I can convey a lot to each other even in a short conversation. (Efficiency)	.75
When discussing work-related matters, my supervisor and I do not have to say a whole lot to get our ideas across to each other. (Efficiency)	1
When talking about work tasks, the conversations between my supervisor and me are smooth. (Coordination)	.75
When talking about how to get things done, my supervisor and I can easily build on each other's ideas. (Coordination)	.25
When talking about how to get things done, the conversations between my supervisor and me usually flow nicely. (Coordination)	.75
When talking about how to get things done at work, my supervisor and I usually align our ideas pretty easily. (Coordination)	.75
When talking about how to get things done at work, my supervisor and I are usually in sync with each other. (Coordination)	.75
My supervisor and I usually have accurate understanding of what the other is saying when we try to get things done at work. (Accuracy)	1
When we discuss how to accomplish tasks at work, my supervisor and I usually have no problem correctly understanding each other's ideas. (Accuracy)	1
My supervisor and I often have misunderstandings of each other's ideas when talking about work tasks. (Accuracy) <sup>b</sup>	.75
My supervisor and I interpret each other's ideas accurately when discussing work-related matters. (Accuracy)	1
When discussing work-related matters, my supervisor and I often have difficulty accurately understanding each other's thoughts. (Accuracy) <sup>b</sup>	1

*(continued)*

**Table 1. (continued)**

Items	CVR <sup>a</sup>
<b>LMX7</b>	
I usually know where I stand with my manager.	-.1
My supervisor understands my problems and needs well enough.	-.1
My supervisor recognizes my potential.	-.1
I can count on my supervisor to "bail me out" at his or her expense when I really need it.	-.1
Regardless of how much power my supervisor has built into his or her position, my supervisor would be personally inclined to use his or her power to help me solve problems at work.	-.1
My working relationship with my supervisor is effective.	-.25
I have enough confidence in my supervisor to defend and justify his or her decisions when he or she is not present to do so.	-.1
<b>LMSX</b>	
If I do something for my supervisor, he or she will eventually repay me.	-.1
My relationship with my supervisor is composed of comparable exchanges of giving and taking.	-.1
I have a balance of inputs and outputs with my supervisor.	-.25
My supervisor and I have a two-way exchange relationship.	0
Voluntary actions on my part will be returned in some way by my supervisor.	-.1
I do not have to specify the exact conditions to know my supervisor will return a favor.	-.1
My efforts are reciprocated by my supervisor.	-.5
When I give effort at work my supervisor will return it.	-.75

<sup>a</sup>Content Validity Ratio: For eight raters, a value of .75 is required as the minimum to retain an item (Lawshe, 1975).

<sup>b</sup>Reverse-coded items.

1993) and having low item loadings for reverse-coded items (Hinkin, 1995). Given the unsettled nature of this issue and the exploratory stage of the present research, we decided to include the negatively worded items in our initial test and examine how they perform. Following Hinkin's (1998) suggestions for scale development, we next conducted a content validity assessment of the generated items to study whether they indeed measure communication behaviors as designed rather than the affective or cognitive aspects of a relationship.

## Content Validity Assessment

**Method.** We mixed the 15 items we generated with two other LMX measures: LMX7 (7 items) and LMSX (8 items). Eight graduate students in a class, all of whom had work experience, were then given the task of rating these items. We did not include LMX-MDM in the assessment for two reasons. First, LMX7 has broader use in existing studies than LMX-MDM. Second, Bernerth et al. (2007) demonstrated that both LMX7 and LMX-MDM tap into the affect and loyalty aspects of LMX. As discussed earlier, previous measures of LMX have tapped into affect, loyalty, and social exchange (Bernerth et al., 2007; Graen & Scandura, 1987), while the measurement items of LMCQ were designed to examine communication in LMX instead. Raters were asked to code each item into one of five categories: Communication, Affect, Loyalty, Social Exchange, or Unidentifiable.

**Results.** To analyze the content validity of the generated items, a content validity ratio (CVR) statistic was calculated for each item (Lawshe, 1975). Bernerth et al. (2007) used this procedure to test the content validity of LMSX. The formula of CVR is as follows:

$$\text{CVR} = \frac{(n_c - N/2)}{(N/2)},$$

in which  $n_c$  is the number of raters who classify the content of an item as “communication” and  $N$  is the total number of raters. When fewer than half of the raters code an item as “communication,” the CVR is negative; when it is by half, the CVR is 0; when more than half, the CVR is positive; when every rater codes an item as “communication,” the CVR is 1. For 8 raters, the minimum value of CVR, to retain an item as content valid, is .75 (Lawshe, 1975). As shown in Table 1, 12 of the 15 items generated resulted in a value of .75 or above and were retained as content valid for further studies. Three items were deleted.

**Discussion.** Based on Barry and Crant’s (2000) interactional richness construct, we generated 15 items. Content validity assessment findings suggested that 12 of the 15 items achieved high content validity and could be retained for further scale construction. The assessment also provided empirical evidence that LMX7, the most widely used measure of LMX, does not tap into communication. Most of its items were rated as either about affect or loyalty in a leader–member dyad, similar to Bernerth et al.’s (2007) findings. In addition, our assessment results confirmed that LMSX largely measures the perceived social exchange process regarding reciprocity and balance of inputs and outputs in the dyadic relationships.

## **Study II: Scale Construction**

### *Purpose*

The purpose of the second study was twofold: (a) to refine the structure of our scale through inter-item correlation analysis and exploratory factor analysis and (b) to examine the scale's reliability.

### *Method*

The study used an online survey. Participants in this study were recruited through the network of undergraduate students enrolled in classes in a U.S. Midwestern public university. Students were invited to refer the study to people who, by the time of the study, had been full-time employees in the past 6 months and had a direct supervisor in the past 6 months. Students were asked to submit names and contact information of the survey participants they referred and were told that participants may be contacted for verification; survey participants were asked to input the name of the referring student in the survey. Students gained course credit when the information was matched. Although no actual verification contact was made with participants due to resource limitations, this mechanism was designed to deter students from filling out the survey themselves. Similar sampling strategies have been used in the past and demonstrated to be effective in gaining respondents representing a wide range of jobs and industries (Sin, Nahrgang, & Morgeson, 2009). We invited 487 students in total and 92 students eventually participated in recruitment. A total of 281 survey responses were received. After deleting cases with incomplete data and responses that did not meet the criteria,  $N = 232$  useable surveys were retained for analysis. In the sample, 37% were males and 63% females with an average age of 35. Participants were from diverse racial groups, including 66.4% Whites/Caucasians, 24.5% Blacks/African Americans, 3.5% Hispanics, 2.6% Asians, and 3.1% mixed. Because of the non-representative sampling technique, the sample demographics did not match closely those of the general employed population in the United States (Bureau of Labor Statistics, 2012). Most notably, there was a much higher representation of female employees (63%) than that of the national data of 47%. This difference could have resulted from a lack of representation of male-dominated industries in our sample, such as manufacturing (5.6%), transportation (1.3%), and construction (0.9%). With regard to representation of racial groups, although it did not match closely the national population data (68.1% Whites/Caucasians, 11.1% Black/African Americans, 15.4% Hispanics, and 5.4% Asians), the sample, to a large extent, reflected the racial composition of the Midwestern university student body (60.8%

Whites/Caucasians, 18.6% Black/African Americans, 3.4% Hispanics, and 2.7% Asians). This result may have reflected the nature of a network sample in which students working as recruiters had the tendency to seek out individuals within their own racial groups. In addition, in the sample, the organizations where survey participants worked ranged from small sizes of fewer than 100 employees (34.1%), middle sizes of between 100 and 500 employees (26.6%) to large sizes of more than 500 employees (39.3%). The median organizational tenure was 4 years and the median time that participants worked for their direct supervisors was 2 years.

## Results

*Inter-item correlation.* Among the 12 items, the two reverse-coded items showed statistically significant but low correlations with other items. The other 10 items demonstrated statistically significant, moderate to high correlations (Table 2).

*Exploratory factor analysis.* We conducted principal axis factor (PAF) analysis with oblique rotation. PAF was chosen instead of principal components factor (PCF) analysis, for the purpose of identifying the scale's structure and because little is known at this point regarding the scale's specific error variance (Hair, Anderson, Tatham, & Black, 1998; Hinkin, 1998). We used oblique rotation method because, as Costello and Osborne (2005) indicated, in social science research, some correlations among factors are generally expected and "oblique rotation should theoretically render more accurate, and perhaps more reproducible, solution" (p. 3). Also, Hair et al. (1998) recommended the use of oblique rotation if the goal is to obtain theoretically meaningful factors instead of variable reduction.

The decision criteria for the scale's factor solution included the following: (a) the eigenvalues are 1.0 or better for all factors; (b) variance accounted for by factors exceeds 60%; and (c) the retained factors possess at least three items with primary loadings of .70 or better and secondary loadings below .40. As shown in Table 3, a two-factor structure emerged, accounting for 71.42% of variance. However, the second factor had only two items: Items 10 and 12, both of which were negatively worded and reverse-coded. Schmitt and Stults (1985) suggested that researchers should be highly suspicious of factors loaded primarily with negatively worded items because these factors have a greater chance of being the result of certain response patterns caused by negative wordings rather than substantive theoretical reasons. In addition, the earlier inter-item correlational analysis had shown Items 10 and 12

**Table 2.** Study II: LMCQ Item Descriptive Statistics and Correlation Matrix (Pearson's Correlation Coefficient, *r*).

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. With regard to getting things done, the conversations between my supervisor and me are efficient.	5.39	1.58	—										
2. When discussing work-related matters, my supervisor and I can convey a lot to each other even in a short conversation.	5.47	1.50	.71***	—									
3. When discussing work-related matters, my supervisor and I do not have to say a whole lot to get our ideas across to each other.	4.78	1.55	.53***	.63***	—								
4. When talking about work tasks, the conversations between my supervisor and me are often smooth.	5.42	1.47	.71***	.79***	.56***	—							
5. When talking about how to get things done, the conversations between my supervisor and me usually flow nicely.	5.36	1.40	.75***	.71***	.64***	.78***	—						
6. When talking about how to get things done at work, my supervisor and I usually align our ideas pretty easily.	5.28	1.39	.76***	.75***	.66***	.73***	.79***	—					
7. When talking about how to get things done at work, my supervisor and I are usually in sync with each other.	5.34	1.45	.78***	.74***	.59***	.76***	.78***	.82***	—				

(continued)

**Table 2. (continued)**

	M	SD	1	2	3	4	5	6	7	8	9	10	11
8. My supervisor and I usually have accurate understanding of what the other is saying when trying to get things done at work.	5.33	1.43	.76***	.76***	.56***	.76***	.76***	.77***	.79***	—			
9. When we discuss how to get things done at work, my supervisor and I usually have no problem correctly understanding each other's ideas.	5.34	1.41	.76***	.76***	.64***	.77***	.83***	.79***	.75***	.76***	—		
10. My supervisor and I often have misunderstandings of each other's ideas when talking about work tasks. <sup>a</sup>	5.03	1.76	.22**	.15*	.12	.26***	.25***	.26***	.23**	.28***	.24***	—	
11. My supervisor and I interpret each other's ideas accurately when discussing work-related matters.	5.04	1.54	.65***	.65***	.59***	.67***	.74***	.77***	.74***	.69***	.76***	.23***	—
12. When discussing work-related matters, my supervisor and I often have difficulty accurately understanding each other's thoughts. <sup>a</sup>	4.88	1.80	.24***	.23***	.15*	.22**	.28***	.27***	.25***	.29***	.24***	.65***	.24***

Note. LMCQ = Leader-Member Conversational Quality.

<sup>a</sup>Reverse-coded items.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**Table 3.** Study II: Factor Loadings of LMCQ.

Item	Factor	
	1	2
With regard to getting things done, the conversations between my supervisor and me are efficient.	.84	.29
When discussing work-related matters, my supervisor and I can convey a lot to each other even in a short conversation.	.85	.23
When discussing work-related matters, my supervisor and I don't have to say a whole lot to get our ideas across to each other.	.70	.16
When talking about work tasks, the conversations between my supervisor and me are often smooth.	.85	.30
When talking about how to get things done, the conversations between my supervisor and me usually flow nicely.	.89	.32
When talking about how to get things done at work, my supervisor and I usually align our ideas pretty easily.	.90	.32
When talking about how to get things done at work, my supervisor and I are usually in sync with each other.	.89	.30
My supervisor and I usually have accurate understanding of what the other is saying when trying to get things done at work.	.87	.36
When we discuss how to get things done at work, my supervisor and I usually have no problem correctly understanding each other's ideas.	.90	.29
My supervisor and I often have misunderstandings of each other's ideas when talking about work tasks. <sup>a</sup>	.26	.85
My supervisor and I interpret each other's ideas accurately when discussing work-related matters.	.81	.29
When discussing work-related matters, my supervisor and I often have difficulty accurately understanding each other's thoughts. <sup>a</sup>	.28	.76
Eigenvalues	7.42	1.15
% of variance accounted for by each factor	61.86	9.56

<sup>a</sup>Reverse-coded items.

having low correlations with other items. Based on these results, we deleted Items 10 and 12. In addition, Item 3 had a factor loading of .695, while all of the other remaining items were above .80. Thus, Item 3 was removed from the scale. This resulted in nine items being retained with a one-factor solution.



*Internal consistency reliability.* Reliability is a necessary condition of validity. To assess the internal consistency reliability of the nine-item scale, we used Cronbach's alpha (Hinkin, 1998). Cronbach's alpha for the scale was .96, indicating that item covariance is strong and the scale adequately captures the construct domain (Churchill, 1979; Hinkin, 1998).

## ***Discussion***

In this second study, our primary task was to assess and develop the scale structure. Through inter-item correlational analysis and exploratory factor analysis, a unidimensional one-factor structure was obtained. Reliability analysis demonstrated high internal consistency reliability. To validate the nine-item LMCQ scale, we undertook a third study reported in the following section.

## **Study III: Scale Validation**

### ***Purpose***

Our present research so far has created a nine-item LMCQ scale and offered evidence of its content validity, internal consistency, and high reliability. To further validate the scale, as suggested by Hinkin (1995, 1998), Study III used a different sample to test the scale's convergent and discriminant validity and criterion-related validity.

### ***Method***

An online survey was conducted. We recruited participants through the network of undergraduate students enrolled in two State Universities located in two U.S. cities, one in a Midwest state and the other in a South-Central state. Students were asked to refer the study to people who, by the time of the study, had been full-time employees in the past 6 months and had a direct supervisor in the past 6 months. Like in Study II, we required students to submit names and contact information of the survey participants they referred, and students were told that participants might be contacted for verification; survey participants were asked to input the name of the referring student in the survey. Students gained course credit when the information was matched. At the university in the South-Central City, we submitted the research recruitment invitation to the university's online research participation system where multiple faculty research projects were presented from which students were allowed to choose one or two for participation to receive extra research credit. In total

1,100 students had access to our invitation to help recruit participants; 102 eventually participated in recruitment. We received 259 survey responses. After deleting incomplete responses and responses that did not meet the criteria, the study resulted in a sample of 186 responses. At the university in the Midwest City, we invited 291 students to help recruit participants; 66 actually participated in recruitment. We received 236 survey responses in total. After the deletion of incomplete and unqualified responses, 166 valid responses were retained. The two samples of participants were compared with regard to key test variables and did not show statistically significant differences. Therefore, the two samples were combined for subsequent analyses,  $N = 352$ . In this combined sample, there were 37% male and 63% female participants with an average age of 34. Among participants 68.4% were Whites/Caucasians, 23.7% Blacks/African Americans, 2.9% Asians, 2.4% Hispanics, 1.2% Native American Indians, and 1.5% mixed races. The sample demographics were very similar to those in Study II. The median time of employment for the participants was 3 years and median time with a direct supervisor 1 year 10 months. As reported by the survey participants, their supervisors were 51% male and 49% female with an average age of 44. Among supervisors, 81.3% were Whites/Caucasians, 12.2% Blacks/African Americans, 3.9% Hispanics, 1.2% Asians, and 1.5% mixed races.

To facilitate convergent and discriminant validity tests, we used LMSX (Bernerth et al., 2007) to measure LMX quality. Our choice of LMSX in this study, instead of LMX7, was based on several reasons. First, conceptually, LMSX is solidly grounded in social exchange theory. Like LMCQ, it focuses on the exchange of a dyad and provides a more accurate operationalization of the exchange construct than LMX7. Second, unlike LMX7, the LMSX scale was developed through systematic psychometric analyses (Bernerth et al., 2007). Third, the one-dimensional structure of LMSX is clear and uncontroversial. Therefore, LMSX is suitable for the convergent and discriminant validity analyses of LMCQ.

We chose organizational commitment and job-related anxiety as two dependent variables for the criterion-related validity tests. In a positive direction, prior research has shown that LMX is a significant predictor of organizational commitment (Dulebohn et al., 2012). Specifically, higher leader-member relational quality is positively associated with organizational commitment. As we discussed earlier in the article, because work conversation has been qualitatively established to be central in relational development, it is reasonable to expect that, if LMCQ is a valid measure, it should have a significant positive relationship with organizational commitment. We adopted Mowday, Steers, and Porter's (1979) nine-item organizational commitment measurement instrument with a 7-point Likert-type scale (1 =

*strongly disagree*, 7 = *strongly agree*). A sample item states, "I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful."

In an opposite direction, we expected that LMCQ would be negatively associated with member job-related anxiety. Previous research has identified a direct negative association of communication with either self-reported or physical measures of, anxiety across a variety of social contexts. For example, in health care organizations, Wright, Banas, Bessarabova, and Bernard (2010) found that employee perceived communication competence is inversely associated with their perceived workplace stress. Ulrey and Amazon (2001) found in intercultural health care settings that communication effectiveness of health care providers has a significant negative association with providers' reported anxiety levels. Studies in non-work-related social contexts also suggested a significant association between communication and anxiety or stress. For example, a study by Frisby, Byrnes, Mansson, Booth-Butterfield, and Birmingham (2011) reported that everyday talk frequency and topic avoidance among military couples are significant predictors of their reported overall levels of life stress. Among married couples, Floyd and Riforgiate (2008) reported a significant negative association between affectionate communication and their stress hormone levels. Overall, these findings allow us to reasonably expect that conversational quality has an inverse relationship with job-related anxiety; that is, higher LMCQ should be associated with lower job-related anxiety. In this study, five items measuring job-related anxiety were adopted from Parker and Decotiis's (1983) job stress scale. A sample item is, "I have felt fidgety or nervous as a result of my job." A 7-point Likert-type scale where 1 = *strongly disagree* and 7 = *strongly agree* was used to obtain responses.

In the criterion-related validity test, we performed hierarchical regression analyses with organizational commitment and job-related anxiety as criterion variables, respectively. Because relational demography research suggests potentially significant effects of demographic dissimilarity between leaders and members on their relational quality (Tsui & Gutek, 1999; Tsui & O'Reilly, 1989), we introduced the dissimilarities of age, race, and sex in addition to organizational tenure, time with leader, and communication frequency as control variables. In the survey, participants were asked to report the approximate age of their direct supervisor, supervisor's sex, and whether their supervisor's race was "the same as yours" or "different from yours." Age dissimilarity was calculated by taking the absolute difference between supervisor and subordinate ages. For race and sex dissimilarities, 0 was used to indicate sameness and 1 to indicate difference. Communication frequency was measured with a four-item instrument using

a 7-point scale from *once or twice in the last 6 months* to *many times daily* (Kacmar et al., 2003). A sample item states, "How often do you and your supervisor talk at work?"

## Results

**Confirmatory factor analysis (CFA).** To validate the factor structure of LMCQ in this data set, a CFA was first conducted with all nine items loaded on one factor. The result revealed a good fit with the data. The modification indices suggested covariance in two pairs of error terms,  $\chi^2(27) = 153.39$ ,  $p < .001$ , Goodness-of-Fit Index (GFI) = .92, Normed Fit Index (NFI) = .95, Incremental Index of Fit (IFI) = .96, Comparative Fit Index (CFI) = .96, Root Mean Square Error of Approximation (RMSEA) = .12. After including the suggested covariance among error terms, the model showed further improvement in goodness-of-fit,  $\chi^2(25) = 102.38$ ,  $p < .001$ , GFI = .95, NFI = .97, IFI = .97, CFI = .97, RMSEA = .09. Although RMSEA = .09 indicated a mediocre fit (MacCallum, Browne, & Sugawara, 1996), given the fact that RMSEA is a measure sensitive to sample size and all the other fit indices showed adequate fit, we drew the conclusion that the one-factor model fit the data best. These findings lent further evidence to the one-dimensional structure of the LMCQ scale.

**Convergent and discriminant validity analysis.** Although they are two conceptually distinct constructs, LMCQ and LMSX both tap into a common broader construct LMX. Therefore, if LMCQ has sufficient construct validity, it should be substantially correlated with LMSX. Correlational analysis confirmed a correlation between LMCQ and LMSX ( $r = .78$ ,  $p < .001$ ). This suggests that the two constructs converge as indicators of LMX.

However, LMCQ was created to be a unique construct that could capture the quality of task conversations between leaders and members, whereas LMSX is designed to grasp the cognitive understanding of the social exchange of a dyad. To test the discriminant validity of LMCQ, we examined the difference in chi-square value between an unconstrained CFA model,  $\chi^2(118) = 573.28$ ,  $p < .001$ , and a nested CFA model in which the correlation of LMCQ with LMSX was constrained to equal to 1.00,  $\chi^2(119) = 586.57$ ,  $p < .001$  (Bagozzi & Phillips, 1982; Bagozzi, Yi, & Phillips, 1991). The test of chi-square difference,  $\Delta\chi^2(1) = 13.29$ ,  $p < .001$ , showed that the unconstrained model had a significantly lower chi-square value, indicating that LMCQ and LMSX are not closely correlated and offering evidence of discriminant validity (Bagozzi & Phillips, 1982; Bagozzi et al., 1991).

**Table 4.** Study III: Descriptive Statistics, Scale Reliability (Cronbach's  $\alpha$ ) and Correlation Matrix (Pearson's Correlation Coefficient,  $r$ ).

Variables	M	SD	Scale reliability	1	2	3	4	5	6	7	8	9
1. LMCQ	5.51	1.16	.96	—								
2. LMSX	4.78	1.36	.93	.78***	—							
3. Organizational commitment	4.97	1.39	.93	.46***	.46***	—						
4. Job-related anxiety	3.39	1.47	.78	-.30***	-.24***	-.16**	—					
5. Communication frequency	5.30	1.47	.94	.36***	.37***	.13*	.10	—				
6. Organizational tenure	5.69	7.39	—	.07	.05	.04	-.04	-.04	—			
7. Time with supervisor	2.89	3.27	—	.12*	.16	.13*	-.11	.01	.52***	—		
8. Age dissimilarity	1.24	1.03	—	-.02	-.05	-.11*	-.10	.11*	-.10	-.07	—	
9. Sex dissimilarity	.69	.88	—	-.02	-.05	-.04	-.07	-.05	-.01	-.02	.00	—
10. Race dissimilarity	.29	.46	—	-.07	-.09	-.07	-.07	-.06	-.03	-.07	-.05	.18

Note. LMCQ = Leader–Member Conversational Quality; LMSX = leader–member social exchange.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$  (two-tailed).

*Criterion-related validity analysis.* Criterion-related validity is the extent to which a proposed measure is able to predict certain criterion variables as suggested by theory and research (Hinkin, 1998). We chose organizational commitment and job-related anxiety as criterion variables for reasons mentioned earlier. For each criterion variable, three models were tested and compared. Control variables were entered in Model 1 followed by Model 2, where LMCQ was added. In Model 3, LMSX was introduced in addition to control variables and LMCQ. Table 4 presents the descriptive statistics, scale reliabilities, and correlation matrix. Table 5 displays regression analysis results. As the results showed, for both criterion variables, LMCQ was a significant predictor. Specifically, for organizational commitment, LMCQ accounted for a significant amount of variance change ( $\Delta R^2 = .18, p < .001$ ) in Model 2. When LMSX was added in Model 3, LMCQ remained a significant predictor ( $\beta = .26, p < .01$ ). For job-related anxiety, LMCQ appeared to be a significant predictor as well, explaining a considerable amount of variance in Model 2 ( $\Delta R^2 = .17, p < .001$ ). It remained significant above and beyond the effects of the control variables and LMSX, as shown in Model 3 ( $\beta = -.35, p < .001$ ). Also noticeable was that communication frequency had a small but definite positive correlation with LMCQ ( $r = .36$ ) and functioned as a significant predictor ( $\beta = -.29, p < .001$ ) as shown in Model 3.

**Table 5.** Study III: Hierarchical Regression Analyses.

Beta	Organizational commitment			Job-related anxiety		
	Model			Model		
	1	2	3	1	2	3
Control						
Age dissimilarity	-.06	-.04	-.03	-.10	-.13*	-.13*
Sex dissimilarity	-.03	-.01	-.02	-.04	-.06	-.06
Race dissimilarity	-.02	-.03	-.02	-.10	-.09	-.10
Organizational tenure	-.05	-.05	-.04	.02	.03	.03
Time with supervisor	.16*	.11	.08	-.14*	-.10	-.09
Communication frequency	.16*	-.01	-.03	.12	.27***	.29***
LMCQ	—	.46***	.26**	—	-.44***	-.35***
LMSX	—	—	.28**	—	—	-.13
Adjusted R <sup>2</sup>	.03	.21	.24	.03	.19	.20
ΔR <sup>2</sup>	.05	.18	.03	.05	.17	.01
ΔF	2.47*	65.04***	10.82**	2.25*	57.24***	2.28
df	6, 274	7, 273	8, 272	6, 272	7, 271	8, 270

Note. LMCQ = Leader–Member Conversational Quality; LMSX = leader–member social exchange.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

## Discussion

Although LMX theories and research have gained solid progress in the past, an area that still holds great potential for further development is the leader–member communication process. According to Jian (2014), leader–member interaction is a communication process that undergirds the association between LMX and many of its correlates. Research (Fairhurst & Chandler, 1989, Fairhurst, 1993) on how conversations may constitute LMX relationships helps establish a conceptual path for us to follow. The significance of uncovering this process becomes even greater in light of recent developments in understanding the fundamental role of conversation in the process of organizing (e.g., Cooren, Kuhn, Cornelissen, & Clark, 2011, Taylor & Van Every, 2000).

However, a lack of proper measurement instruments has placed a significant constraint on uncovering the leader–member communication process and its association with other organizational constructs. As discussed earlier,

LMX7 and LMX-MDM, although being widely used, tap into the affective dimension of the leader–member relationship. Both of these measures have issues in their dimensionality and content validity. The LMSX measure, although having solid psychometric properties, was intended to operationalize the cognitive dimension of leader–member relationship as a social exchange process (Bernerth et al., 2007). Therefore, developing measurement tools capable of investigating leader–member communication processes becomes imperative. It is within this context that LMCQ was generated and tested.

In summary, we have followed a scale development process as suggested by Hinkin (1995, 1998). Study I focused on generating operational items and testing content validity of these items. Based on the results of Study I, Study II tested and refined the scale structure through inter-item analysis and exploratory factor analyses. Study II also examined the reliability of the scale. Study III used a different sample to test the scale structure and validate the scale through convergent and discriminant validity tests and criterion-related validity tests. The results of the three studies demonstrated sufficient psychometric properties of the instrument. A final version of this measurement instrument is presented in the appendix.

Overall, the most significant contribution of this research is to offer researchers a measurement instrument that is theoretically grounded and taps into the leader–member communication exchange. The instrument operationalizes leader–member conversations regarding task accomplishment. It differentiates itself significantly from other measures, such as LMSX, which is designed to operationalize the cognitive perception of social exchange. Hence, the LMCQ scale squarely focuses on the dyadic communication exchange. In the past, the direct association between work conversations and work outcomes has not been statistically tested, but tentatively proposed through theoretical reasoning or based on qualitative evidence (e.g., Fairhurst, 2007; Jian, 2014). The proposed measurement instrument will allow researchers to statistically examine the effects of conversation and assess its associations with other work outcomes. In fact, Study III has already revealed very interesting findings in regard to the relationship between LMCQ and job-related anxiety and organizational commitment. The findings clearly demonstrated that LMCQ is a significant predictor of both individual work outcomes. Practically, the instrument provides a useful and easy-to-use resource for leadership development, such as executive coaching and supervision training, and self-diagnosis. Unlike other LMX measurement tools, LMCQ is directly related to communication practice, that is, conversational practice. It serves as a clear indicator of interactional performance. An assessment based on LMCQ would enable the assessor to propose concrete suggestions for changes necessary in improving conversational practice.

## *Limitations and Directions for Future Research*

In spite of the significant contributions discussed above, several limitations exist in the study and point to directions for future research. First, we acknowledge that the leader–member communication process is complex; LMCQ as a construct and measurement instrument only taps into one aspect of the process, that is, the quality of conversations. The measurement emphasizes the verbal communication in leader–member dyads but overlooks the nonverbal aspects of communication in facilitating interactional coordination and meaning interpretation. We believe that more precise measurement tools are still needed to tap into various aspects of leader–member communication. Second, although the scale was intended to capture the quality of the dyadic process of conversation, it relies on participants' memory and perception. The use of the scale would be most effective when combined with other research strategies and tools, such as collecting conversation recording data and field observations. Third, the test of the scale was only carried out from a member's perspective. Although a member's perspective is valid and useful in its own right, other approaches should be adopted in future investigations, such as the leader's perspective and a leader–member agreement approach (e.g., Coglisier, Schriesheim, Scandura, & Gardner, 2009). Fourth, the network sampling technique presented potential limitations to the findings. For example, the technique limited the generalizability of the findings. We did not collect the demographics of our student recruiters, which, we suspect, may have influenced the demographic composition of our participants as we discussed earlier. Also, the sampling technique and the lack of data on the actual number of survey invitations given out by students made it difficult to estimate the survey response rate. In addition, although adequate eligibility check and fraud-prevention procedures were implemented, additional respondent verification procedures, such as verification phone calls and comparison between verified and unverified data, could certainly provide further assurance. In sum, future research should use alternative sampling techniques, such as representative samples within particular organizational settings or professions, and further test the instrument's psychometric properties. The instrument's convergent and discriminant validity may also be further tested against measures not included in this study, such as LMX7 and LMX-MDM. We also suggest that future research further investigate and develop the scale's dimensional structure to enhance the scale's conceptual precision and diagnostic utility.

Finally, we acknowledge the implicit cultural bias that the scale may presume. Specifically, first, the scale focuses on verbal communication, which occupies a prominent role in low-context cultures, such as the United States, but is deemphasized in high-context cultures, such as China and Japan (Ting-Toomey & Chung, 2012). Second, the scale was tested only in samples of the



U.S. working population. How it may perform in cultural settings distinct from the U.S. deserves further investigations.

In conclusion, we believe that the development of a LMCQ measurement instrument helps advance the leader–member communication research. Theoretically, it constitutes an important step toward building and testing a more comprehensive model of leader–member communication. Practically, the instrument is a promising tool for practice-oriented leadership training and development.

## Appendix

### *The Final Version of the Leader–Member Conversational Quality (LMCQ) Scale*

Instructions: The following are statements about your experience of communication with the supervisor to whom you directly report. Please respond to each statement with the following scale:

- 7 = strongly agree
- 6 = moderately agree
- 5 = slightly agree
- 4 = undecided
- 3 = slightly disagree
- 2 = moderately disagree
- 1 = strongly disagree

- 
1. With regard to getting things done, the conversations between my supervisor and me are efficient.
  2. When discussing work-related matters, my supervisor and I can convey a lot to each other even in a short conversation.
  3. When talking about work tasks, the conversations between my supervisor and me are often smooth.
  4. When talking about how to get things done, the conversations between my supervisor and me usually flow nicely.
  5. When talking about how to get things done at work, my supervisor and I usually align our ideas pretty easily.
  6. When talking about how to get things done at work, my supervisor and I are usually in sync with each other.
  7. My supervisor and I usually have accurate understanding of what the other is saying when trying to get things done at work.
  8. When we discuss how to get things done at work, my supervisor and I usually have no problem correctly understanding each other's ideas.
  9. My supervisor and I interpret each other's ideas accurately when discussing work-related matters.
-

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