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The empowering leadership questionnaire: the construction and validation of a new scale for measuring leader behaviors

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Summary This paper describes the construction and empirical evaluation of a new scale for measuring empowering leader behavior. Study One consisted of thorough interviews with external leaders and team members in three organizations. Behaviors elicited in the interviews were classified by researchers into eight categories of leader empowering behavior and the Empowering Leadership Questionnaire (ELQ) was constructed to measure each of these categories. In Study Two, the ELQ was administered to team members and leaders from two organizations. The results indicated that five-factors (Coaching, Informing, Leading By Example, Showing Concern/Interacting with the Team, and Participative Decision-Making) adequately describe the data. In Study Three, we cross-validated the scale in a sample from five organizations and the factor analysis confirmed the five-factor model. The ELQ dimensions were also compared with behaviors measured by two well-established measures of leader behavior. The results indicated that the ELQ dimensions partially overlap with previously identified constructs, but that empowering leadership behavior can not be entirely accounted for by the earlier measures. Definitions and implications for the categories of empowering leader behaviors are offered. Copyright © 2000 John Wiley & Sons, Ltd.

Introduction

In response to increasing global economic competition, many companies have undergone dramatic structural changes. To improve the overall flexibility and efficiency of their organizations, many companies have replaced their traditional hierarchical management structures with empowered (semi-autonomous or self-managing) work teams. Duties that were

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once performed by managers, such as directing and controlling work, are now performed by empowered teams. The managers that remain, in turn, have been asked to take on a new set of roles and responsibilities in order to lead these teams (Drucker, 1983; Manz and Sims 1987; Lawler, 1986, 1992). However, despite the current popularity and widespread use of empowered teams, there is little empirical research that examines the skills necessary to lead them effectively. The purpose of the present set of studies was to examine the behaviors of external leaders of empowered teams (i.e., managers who are not team members, but who are responsible for providing leadership) and to establish an empirical basis for understanding their function in today's modern organizations.

There is a striking contrast between the structure and processes of traditional organizations and those of empowered or flat organizations. The traditional organization is marked by a hierarchical structure, centralized decision making, and a top down philosophy of control (Manz and Sims, 1987; Walton and Hackman, 1986). In this environment, the roles of managers and workers are well defined. Workers are responsible for doing the work assigned to them by managers. Managers, in turn, are responsible for defining and structuring the work of employees, making important decisions, providing rewards, and telling employees what to do (Lawler, 1986, 1988, Manz and Sims, 1987; Schriesheim, House and Kerr, 1976). This structure, and the corresponding roles of managers and employees, has typified organizations since the days of the early organizational theorists.

Changes in the business environment brought on by foreign competition, increasing quality and product development demands, and the gradual shift from a manufacturing to a service-oriented economy, have led many organizations to adopt a different approach to the management of work and workers (Jackson and Alvarez, 1992; Johnston and Packer, 1987). Many companies have eliminated layers of management in order to streamline their organization and cut costs. The reduction in staff as well as an accompanying change in management philosophy has led to a greater reliance on teams to accomplish the work and to take on the responsibilities of managers (Lawler, 1986; Manz and Sims, 1993; Tichy and Ulrich, 1984; Walton and Hackman, 1986). The process of implementing conditions that increase employees' feelings of self-efficacy and control (e.g., participative decision making), and removing conditions that foster a sense of powerlessness (e.g., bureaucracy), has been popularly referred to as empowerment (Arad and Drasgow, 1994 ('Empowered work groups: conceptual and empirical assessment of empowerment processes and outcomes in organization': Paper presented as part of a symposium at the annual meetings of the Society of the Industrial and Organizational Psychologists, Nashville, TN, U.S.A.); Conger and Kanungo, 1988; Lawler, 1986; Liden and Arad, 1996; Spreitzer, 1996). Researchers believe that both the employee and the company benefit from empowerment (Conger and Kanungo, 1988; Gecas, 1989; Thomas and Velthouse, 1990; Lawler, 1986; Manz and Sims, 1987).

The current emphasis on teams, and most importantly on empowered teams, has been accompanied by different requirements for both workers and leaders in these organizations. Over time, workers in empowered teams are granted more autonomy, self-direction, and control over their work environment. Some teams even have the responsibility for scheduling work hours and vacations, ordering materials, hiring and firing employees, and determining pay raises (Lawler, 1986; Liden and Tewksbury, 1995). Managers, on the other hand, are required to support teams, encourage self-management, and promote empowerment. Additionally, managers may be required to model appropriate behaviors, provide social and emotional encouragement, build trust and openness, encourage self-reinforcement, provide information and resources to complete tasks, encourage self-goal setting, and provide and communicate a vision (Bennis and Nanus, 1985; Lawler, 1986; Liden and Tewksbury, 1995; Manz and Sims, 1987; Schein, 1993).

The change in managers' roles and responsibilities in empowered environments appears to require a corresponding change in the types of leadership behaviors they employ. However, although the behavioral requirements of leaders in empowered team environments and traditional environments appears to be quite different, there may be some similarities. An inspection of the research on leadership in these two environments suggests that some overlap may exist. For example, the construct 'Consideration' which was identified in studies of leadership in traditional organizations (Haplin, 1957; Stogdill, 1963), seems quite similar to the construct 'Providing Social Support' which was identified in studies of empowering leadership (Manz and Sims, 1987). The amount of overlap in the leader behaviors of traditional and empowered environments, however, is unknown and warrants an empirical investigation.

Measuring leadership in empowered team environments

Past research on leader behavior has produced a substantial number of instruments for measuring leader behavior and its effectiveness, such as the Leader Behavior Description Questionnaire (LBDQ) (Haplin, 1957) and the revised LBDQ (Stogdill, 1963) (see Clark and Clark, 1990, for a review). The apparent differences between the leadership requirements of traditional and empowered environments, however, suggests that traditional measures of leadership may be, at most, only partially applicable to empowered team environments. These instruments may not encompass the spectrum of behaviors that are required for effective leadership in empowering organizations (Conger and Kanungo, 1988; Manz and Sims, 1987; Thomas and Velthouse, 1990; Walton and Hackman, 1986). The large number of new leader behavior constructs proposed in the empowerment literature attest to this idea (e.g., Manz and Sims, 1987). Thus, a new behavioral measure of leadership that is sensitive to the requirements of empowered team environments appears to be needed.

The construction of such an instrument can be accomplished through one of three approaches. The first is through the use of existing theory of empowerment to derive constructs of leader behavior. Unfortunately, despite some research on the empowerment construct (see Spreitzer, 1995), the development of a strong theoretical underpinning for *leader behavior* has lagged. Although a number of authors have discussed the factors that may effect empowerment (e.g., organizational factors, supervisory style, reward systems, job design) (see Conger and Kanungo, 1988; Spreitzer, 1996), there is little theory focusing on the role of effective leader behavior in empowered team environments.

A second approach to the development of a new scale is to use the leadership constructs and behaviors identified by empowerment researchers. This body of work contains a plethora of potential constructs and behaviors that leaders might perform to empower workers (see Bennis and Nanus, 1985; Block, 1987; Burke, 1986;. Conger and Kanungo, 1988; House, 1977; Kanter, 1979; Manz and Sims, 1987; Spreitzer, 1995; Tichy and Devanna, 1986; Thomas and Velthouse, 1990; Quinn and Spreitzer, 1997). Unfortunately, it is unclear which of the many behaviors would be most appropriate to choose for the creation of a scale measuring team leadership. Moreover, few of these constructs and behaviors were generated from an empirical investigation of leader behavior in an *empowered team environment*. Thus, the actual relevance of these behaviors for effective leadership in empowered team environments is largely speculative.

An alternative approach to the first two is to derive the instrument through an inductive, or bottom-up, investigation of leadership behavior in empowered team environments. This

approach circumvents the difficulties associated with a reliance on possibly incomplete or poorly integrated theory and research, and should improve the comprehensiveness and validity of a leader behavior instrument.

A step in this direction was provided by Manz and Sims (1987). In their study, Manz and Sims used observations and interviews with leaders of non-unionized teams to develop the Self-Management Leadership Questionnaire (SMLQ). They then compared the SMLQ's leader behavior constructs to those identified in self-management and sociotechnical systems theory. While this study provided an important first step, it was limited in several respects. First, the same participants, jobs, and organization were used for eliciting empowering behaviors and validating the questionnaire. The use of only one sample for the development and validation of the scale places limitations on the generalizability of the results. Second, the lack of an independent cross-validation sample serves as a less stringent test of a scale than is conventionally required. Finally, Manz and Sims compared the SMLQ's constructs with existing theory based on their *conceptual* similarities and differences. The true empirical overlap of the SMLQ constructs and traditional measures of leader behavior remains unknown.

Overview

In the present investigation, we describe the construction, validation, and cross-validation of a new scale for measuring effective leadership in empowering environments. In Study One, we gathered information about the behaviors that are needed for managers to lead effectively in empowered team environments. We then constructed a scale (the Empowering Leadership Questionnaire or ELQ) to measure each category of empowering leadership behavior. In Study Two, we evaluated the reliability and factor structure of the ELQ in several organizations. In Study Three, we cross-validated the instrument in a sample from several different organizations. In addition, we investigated the empirical relation of the ELQ with two traditional measures of leader behavior.

Study One—Elicitation

Study One was used to elicit information about the critical leader behaviors for empowered teams. To obtain up-to-date information, and to better understand the behaviors required in empowered team environments, we conducted in-depth interviews with team leaders and members in three empowering organizations. The types of teams that were interviewed varied in function, size, purpose, and level of autonomy given to workers. All of the teams who participated in the elicitation study were self-managing work teams.

The purpose of the interview was to elicit the behaviors associated with effective team leadership in empowering organizations. It is important to note that effective team leadership in these organizations may involve behaviors that do not necessarily increase perceptions of empowerment. The focus of the paper is on behaviors that are associated with *effective* team leadership in empowered environments and not necessarily on behaviors that are associated with increased perceptions of empowerment. It is possible, although unlikely, that there may be some behaviors that are associated with effective leadership in these environments, but not empowerment. In other words, we are not assuming that all effective leadership behaviors in

empowered team environments *necessarily* lead to increased perceptions of empowerment. Presumably, given the past research on empowerment, these behaviors and empowering behaviors should overlap considerably. The degree of overlap, however, is yet to be determined.

The focus of the elicitation study was on effective team leadership behavior in environments where teams have been given autonomy, self-direction, and control; and asked to take on the roles and responsibilities traditionally held by middle management.

Method

Participants

A total of 195 team members and leaders volunteered to participate in this study. The participants were obtained from three very different organizations: a clothing retailer, a building products supplier, and a telecommunications corporation. These companies differed on several counts, including: the size of the parent organization, the proportion of employees who worked in empowered teams, the length of time these teams had been in use, the size and function of the teams, and the type and range of products that were produced by each company. The participants were both male and female employees, and ranged in age from 18–60. Nearly every educational and socio-economic background was represented, from workers with only high school degrees to those with graduate degrees. The interviewees represented every level in these organizations, from the workers up to a company president.

The clothing retailer The first organization was a medium-sized retail clothing chain headquartered in the Midwest. Some departments and stores within this organization had teams with a history of empowerment, while other departments had more recently established empowered teams. We conducted interviews at five locations, including the corporate headquarters and four retail stores. A total of 10 team leaders from all levels of the organization and 25 team members were interviewed. The participants represented the areas of sales, customer service, and training.

The building products supplier The second organization was a small, employee-owned building products supply company that had a history of empowering workers. We conducted interviews at the company's distribution centre and headquarters. The participants included 7 team leaders, 14 individual team members, and 6 intact work teams (interviewed with all team members present). The functions that were represented included material support, sales, accounting, customer service, and production.

The telecommunications corporation The third organization was a large telecommunications corporation. The participants had been working in empowered teams for a period of about one-and-a-half years. Recently, the company had gone through extensive reorganization and some of the teams that were interviewed had not yet been reassigned, but were designated to do so. Interviews were conducted at three different sites. At these sites, we interviewed a total of 9 team leaders, 28 individual team members, and 7 intact work teams.

Procedure

Participants were scheduled for an interview time, and met the interviewer in a private office or small meeting room. Each participant was informed that the purpose of the interview was to gather information about the important skills, abilities, and behaviors of leaders of empowered

teams. The participants were asked for their permission to tape record the session, and were assured that their responses would remain anonymous and confidential. All participants agreed to the recording.

The interview Participants were asked to describe the effective and ineffective behaviors of their first-line or direct managers. The interview questions were designed to focus participants on leader *behavior*. This was done to minimize the impact of participants' implicit theories of leadership. The interview format consisted of five basic open-ended questions. These questions were: (1) What do managers of effective work groups do? That is, what behaviors/skills come to mind when you think of a manager of an effective work group? (2) What do managers of less effective work groups do? That is, what behaviors/skills come to mind when you think of a manager of a less effective work group? (3) What behaviors and skills, do you think separate effective from ineffective work group managers? (4) Think about a situation you have been in which a manager of a work group contributed greatly to the successful performance of the group—What was the task facing the group? What did this manager actually do that enabled the work group to be productive? How did the manager's behavior contribute to the group's success? What managerial skills do you think this manager's behavior demonstrated? (5) Think about a situation you have been in which a work group manager hurt the performance of the group—What was the task facing the group? What did this manager actually do that prevented the work group from being productive? How did the manager's behavior contribute to the group's lack of success? What managerial skills do you think this manager's behavior demonstrated? The interview sessions lasted from 20 minutes to one-and-a-half hours; the average interview lasted about 30 minutes.

Identifying leader behaviors After all interviews were concluded, we went through several steps to identify conceptual groupings of leader behaviors. We began by transcribing the audio recordings of each interview session. These transcriptions were then content coded by three industrial/organizational psychologists who had participated in the interviews with team leaders and team members. From the transcripts each coder generated a list of the leadership behaviors that were mentioned in the interviews and each behavior was copied onto an index card. Redundant cards were removed and the three coders sorted a total of 125 behaviors into groups according to their conceptual similarities.

Results and discussion

The final classification consisted of eight tentative categories of leader behaviors for empowered teams. Definitions of the constructs that were generated from this analysis, examples of each, and a sample behavior are included below.

Leading by example Leading by example refers to a set of behaviors that show the leader's commitment to his or her own work as well as the work of his/her team members. This category included behaviors such as working as hard as he/she can and working harder than team members. (Sample behavior: Sets high standards for performance by his/her own behavior.)

Coaching Coaching refers to a set of behaviors that educate team members and help them to become self-reliant. This category included behaviors such as making suggestions about

performance improvements and helping the team to be self-reliant. (Sample behavior: Helps my work group see areas in which we need more training.)

Encouraging Encouraging refers to a set of behaviors that promote high performance. This category included behaviors such as acknowledging team efforts and encouraging team members to solve problems together. (Sample behavior: Encourages my work group to set high performance goals.)

Participative decision making Participative decision making refers to a leader's use of team members' information and input in making decisions. This category included behaviors such as encouraging team members to express their ideas and opinions. (Sample behavior: Uses my work group's suggestions to make decisions that affect us.)

Informing Informing refers to the leader's dissemination of company wide information such as mission and philosophy as well as other important information. This category included behaviors such as explaining company decisions to the team and informing the team about new developments in organizational policy. (Sample behavior: explains company goals.)

Showing concern Showing concern is a collection of behaviors that demonstrate a general regard for team members' well-being. This category included behaviors such as taking time to discuss team members concerns. (Sample behavior: Treats group members with respect.)

Interacting with the team This construct incorporates behaviors that are important when interfacing with the team as a whole. This category included behaviors such as keeping track of what is going on in the team and working closely with the team as a whole. (Sample behavior: Knows what work is being done in my work group.)

Group management The final construct is that of group management. This collection of behaviors refers to the leader's management of team functioning. This category included behaviors such as helping to develop good relations among work group members and suggesting that team members evaluate their own work. (Sample behavior: Lets my group handle our own problems.)

The objective of Study One was to elicit a comprehensive set of leader behavior constructs in empowering environments. Several of the constructs that were identified in the study were similar to those suggested in other studies of empowered teams, namely coaching, participative decision making, and encouraging (see Manz and Sims, 1987). There were other constructs, however, that appeared to be distinct.

The results of Study One should not be taken as providing conclusive evidence for the existence of a particular set of leader behavior constructs in empowering environments. Rather, it was intended to elicit a set of behaviors, and provide an initial classification of them. The question of whether these behavioral categories are an accurate reflection of the underlying constructs, or alternatively, are an artifact of our data collection methods, the researchers, or both, were addressed in Study Two.

From Study One, we identified eight categories of behaviors that can be used to form an empirical basis for model construction and testing. To warrant stronger inferences, it is important to validate the constructs and, therefore, we felt that it was necessary to create an instrument to measure the constructs. The next section outlines the creation and testing of this instrument.

Study Two

In Study Two, we wrote multiple items to measure each of the eight categories of leader behavior. We then collected responses to these items for empowered (self-managing) teams in two organizations and subsequently examined the factor structure of the new instrument.

Method

Sample

In total, 205 employees provided complete data. Ninety-five employees were customer service representatives from three offices of an international telecommunication corporation and 110 employees were from a building products supplier in the Midwest. The team members from the building products supplier held a variety of job positions such as mill work production, loading, drivers, sales, customer service, accounting, and other support functions. All the participants worked in team environments.

There were 97 female and 108 male employees in our sample. The ages of the participants ranged from 18–60, and the average age was 37. Eighty-three per cent of the participants were Caucasians and 17 per cent were minorities. The participants had a variety of educational backgrounds ranging from a high school to college education. Average organizational tenure for participants was 8 years. All participants volunteered to participate in the study.

Materials

Multiple items were written to measure each of the eight constructs of empowering leader behavior, identified in Study One. The items were written by the three industrial/organizational psychologists who had participated in the interviews with team leaders and team members. The items were derived from an examination of the interview protocols from Study One. The language for the items was taken from the original interviews whenever possible. Items that appeared too complex, too ambiguous, or did not describe behavior were excluded from the instrument. The final version of the instrument included 48 items, across the eight subscales (six items per construct). Participants were asked to assess the frequency of their external team leader's performance of each of these behaviors. A 5-point response scale, where 1 = 'never' and 5 = 'always', was used.

Data collection procedure

The leadership instrument, containing the eight subscales, was administered as part of a larger organizational survey in two companies. The survey consisted of a series of questions about employees' job attitudes and team experiences. It was administered by the researchers to groups of 10–20 employees at companies' sites.

Analysis

We took a two-pronged approach to the analysis of the instrument. First, we performed a set of analyses using the individual items. We obtained a correlation matrix for the items within a

subscale, and deleted those with low inter-item and item-total correlations. We then performed factor analyses on the item-level data. However, as is typically the case with discrete item responses, many of the individual items did not satisfy the linearity assumption of standard factor analysis models nor did they satisfy the multivariate normality assumption of maximum likelihood estimation methods. Therefore, in the second phase of our analyses, we formed item dyads by adding pairs of items within a subscale. This process was expected to improve the fit of the data to the linearity assumption of factor analysis and the multivariate normality assumption. The subscales were then analyzed by confirmatory factor analyses, with LISREL VIII (Jöreskog and Sörbom, 1993), to examine the factor structure of the proposed instrument. Factor parameters were estimated using generalized least squares.

We considered a number of alternative factor models in the process of evaluating the proposed factor structure. The appropriateness of each model was examined using several indices of fit such as the ratio of chi-square to its degrees of freedom, LISREL's goodness of fit indices, the root mean-square residuals, and standardized residuals. Each of these models was considered plausible given previous research on empowerment (see Conger and Kanungo, 1988; House, 1977; Manz and Sims, 1987; Mahoney and Arnkoff, 1979; Neilsen, 1986).

Results

Five items were deleted due to low inter-item correlations and low item-total correlations. Four additional items were deleted due to low factor loadings in the item-level factor analysis. Turning now to the analysis of the multi-item composites, fit indices for several alternative models are summarized in Table 1.

LISREL's estimation procedure did not converge for the eight-factor model after 200 iterations. It also did not converge for a seven-factor model, in which the items for the Encouraging subscale were allowed to load on other factors. The six-factor model, in which Interacting with the Team and Group Management were combined into one factor, provided a moderately good

Table 1. Model fit indices for each model

Competing model	χ^2	*df*	GFI	AGFI	RMSR
Study Two validation					
Eight-factor model*					
Seven-factor model*					
Six-factor model	252.5	137	0.87	0.82	0.08
Five-factor model	261.8	142	0.86	0.82	0.08
Four-factor model A	272.2	146	0.86	0.82	0.08
Four-factor model B	271.9	146	0.86	0.82	0.08
One-factor model	294.6	152	0.84	0.80	0.09
Zero-factor model	3057.2	171	0.15	0.06	0.53
Study Three cross-validation					
Five-factor model	344.3	142	0.91	0.87	0.04
Four-factor model A	392.2	146	0.89	0.86	0.05
Four-factor model B	384.8	146	0.89	0.86	0.05
One-factor model	606.1	152	0.73	0.79	0.07
Zero-factor model	7338	171	0.12	0.02	0.61

* = LISREL's iterative estimation procedure did not converge.

fit. However, factor 5 (Showing Concern) and factor 6 (Interacting/Managing the Team) were highly correlated, $r = 0.97$, suggesting that they were not distinct in our sample.

Thus, we examined the fit of a five-factor model, where Showing Concern and Interacting with the Team were combined into a single factor. Comparisons between the six-factor model and the five-factor model showed a relatively small difference in chi-square, 9.33, with 5 degrees of freedom. The ratio indicates that Showing Concern and Interacting with the Team were not factorally distinct in our sample. Also, there was little decrement in the goodness of fit indices and the root mean square residuals. Thus, these two subscales were merged into a single subscale which we will refer to as Showing Concern/Interacting with the Team.

The five-factor model showed high correlations between Coaching (factor 2) and Participative Decision Making (factor 3), $r = 0.94$, and also between Participative Decision Making (factor 3) and Interacting with the Team (factor 5), $r = 0.93$ (see Table 3). Due to these high factor intercorrelations, we examined two four-factor models. In the first four-factor model, model 'A', Participative Decision Making and Showing Concern/Interacting with the Team were combined into one factor. In the second four-factor model, model 'B', Coaching and Participative Decision Making were combined into one factor.

Comparisons of the five-factor model and each of the four-factor models showed modest changes in the chi-square to degrees of freedom ratios; model A $\Delta\chi^2/\Delta df = 10.4/4 = 2.6$, model B $\Delta\chi^2/\Delta df = 10.14/4 = 2.5$. Ratios of this size, given our sample of $N = 205$, provides some evidence for the existence of separate factors underlying Participative Decision Making, Showing Concern/Interacting with the Team, and Coaching behaviors. Examination of other fit indices however, suggested that the four-factor models fit the data nearly as well as the five-factor model. Thus, the decision to separate or merge Participative Decision Making and Showing Concern/Interacting with the Team (model 'A'), and/or Participative Decision Making and Coaching (model 'B') could not be made from empirical criteria alone.

Therefore, we subsequently attempted to identify if there were any important *conceptual* differences between constructs in the four-factor models. To do this, we had twelve industrial/organizational psychologists sort the items that formed the Participative Decision Making and Showing Concern/Interacting with the Team factors (model 'A'), and the items that comprised Participative Decision Making and Coaching factors (model 'B'). Eleven of the 12 judges believed that Participative Decision Making and Showing Concern/Interacting with the Team behaviors were conceptually distinct, and all 12 judges agreed that Participative Decision Making and Coaching behaviors were conceptually distinct. Thus, the judgments of the twelve independent raters provide support for the five-factor model, including the separation of Participative Decision Making, Showing Concern/Interacting with the Team, and Coaching behaviors. It is also worth noting that these three constructs are similar to others mentioned in the empowerment literature (e.g., Manz and Sims, 1987). In sum, the equivocal empirical criteria, the experts' sorting, and the similarity among these constructs and others identified in the empowerment literature suggest that the five-factor model was the most reasonable to pursue.

We now turn to the parameter estimates for the five-factor model. The factor loadings for the multi-item composites used as indicators for the five-factor model are presented in Table 2. The means, standard deviations, and the coefficient α for scales assessing each of the ELQ's behavioral categories are also presented in Table 2. This table shows factor loadings that are fairly high; moreover, internal consistency reliability exceeded 0.85 for all five scales and was thus acceptable.

The factor intercorrelations, shown in Table 3, seemed questionably high. To check the accuracy of LISREL's estimated factor correlations, we computed disattenuated correlations. We formed a scale for each factor by adding the items that measure each factor, computed coefficient

Table 2. Means, standard deviations, and reliability coefficients for ELQ scales and subscale factor loadings for the five-factor model

Subscale	I	II	III	IV	V	mean	*S.D.*	α
Leading by Example						3.91 (3.95)	0.84 (0.84)	0.91 (0.89)
Subscale 1	0.85 (0.77)							
Subscale 2	0.78 (0.92)							
Subscale 3	0.77 (0.81)							
Coaching						3.73 (3.73)	0.73 (0.81)	0.90 (0.93)
Subscale 4		0.67 (0.77)						
Subscale 5		0.74 (0.85)						
Subscale 6		0.75 (0.86)						
Subscale 7		0.83 (0.83)						
Subscale 8		0.78 (0.88)						
Participative Decision Making						3.75 (3.61)	0.74 (0.84)	0.86 (0.92)
Subscale 9			0.84 (0.91)					
Subscale 10			0.82 (0.81)					
Subscale 11			0.57 (0.91)					
Informing						3.62 (3.55)	0.78 (0.88)	0.85 (0.91)
Subscale 12				0.83 (0.78)				
Subscale 13				0.82 (0.82)				
Subscale 14				0.68 (0.90)				
Show Concern						3.90 (3.84)	0.70 (0.84)	0.89 (0.94)
Subscale 15					0.84 (0.89)			
Subscale 16					0.71 (0.91)			
Subscale 17					0.79 (0.89)			
Subscale 18					0.81 (0.84)			
Subscale 19					0.75 (0.78)			

Note. All non-zero factor loadings are significant at the $p = 0.01$ level; factor loadings not presented were held fixed at zero. Numbers in parentheses are from the cross-validation sample (see Study Three).

Table 3. Factor intercorrelations for the five-factor model

Factor	1	2	3	4	5
Factor 1					
Factor 2	0.85 (0.83)				
Factor 3	0.84 (0.80)	0.94 (0.91)			
Factor 4	0.67 (0.70)	0.88 (0.86)	0.81 (0.79)		
Factor 5	0.88 (0.83)	0.93 (0.91)	0.94 (0.90)	0.78 (0.82)	

Note. All correlations are significant at the $p = 0.01$ level. Numbers in parentheses are from the cross-validation sample (see Study Three).

α for each scale, and applied the standard disattenuation formula (see Lord and Novick, 1968). Table 4 presents the observed correlations of the ELQ scales and the disattenuated scale intercorrelations. A comparison of the LISREL VIII factor intercorrelations and the disattenuated correlations indicates that LISREL VIII's factor intercorrelations were larger by about 0.10 on the average. This finding was surprising: coefficient α provides an estimate of a *lower* bound for reliability and therefore our disattenuated correlations represent an estimate of *upper* bounds for the correlations among constructs. One explanation of these results is that LISREL VIII provides estimates of factor correlations that are biased in a positive direction. In general, maximum

Table 4. Observed correlations and disattenuated correlations for ELQ scales based on a five-factor model

Scale	1	2	3	4	5
Scale 1	–	0.67	0.72	0.53	0.74
Scale 2	0.70	–	0.65	0.65	0.66
Scale 3	0.77	0.74	–	0.62	0.79
Scale 4	0.60	0.75	0.73	–	0.69
Scale 5	0.82	0.73	0.90	0.79	–

Note. Observed correlations are above the diagonal; disattenuated correlations are below the diagonal. Scales are presented in the order given in Table 2.

likelihood estimates are statistically consistent, though potentially biased. Thus, it seems plausible that the interfactor correlations may not be as high as estimated by LISREL.

Study Three

The results of the second study indicated that there were five categories of behaviors that were important for the effective leadership of empowered teams. These behaviors were: Leading by Example, Coaching, Participative Decision Making, Informing, and Showing Concern/Interacting with the Team. The purpose of Study Three was to replicate and extend the results of Study Two. Although Study Two provided some evidence regarding the factor structure of the ELQ, there were several limitations that needed to be addressed.

The first limitation concerns the lack of an independent confirmation of the five-factor model. The data in Study Two were used to both select and assess the fit of the five-factor model. Although this procedure is useful as a first step in identifying the factor structure of the instrument, a more rigorous cross-validation of the five-factor model in an independent sample was needed.

The second limitation of Study Two is that it did not allow a direct comparison between leadership behaviors identified by the ELQ and those identified by existing measures. By inspection, the ELQ constructs appeared to be largely distinct, but the true empirical relation was still unknown. To address this limitation, we compared the leadership behaviors identified by the ELQ with the behaviors identified by two well-established measures of leader behavior. First, we compared the ELQ constructs with the fourteen leadership constructs in the Managerial Practices Survey (MPS) (Yukl, 1989). The MPS was chosen because it is one of the most comprehensive and rigorously developed leadership measures (see Clark and Clark, 1990). In order to best highlight potential similarities and differences between the ELQ and other measures of leadership, the MPS seemed an ideal comparison. Second, we compared the ELQ constructs with the well known Consideration and Initiating Structure subscales of the LBDQ XII (Stogdill, 1963).

Method

Sample

The participants were 374 employees from five organizations. Ninety-one of the participants were health care service employees from a health care provider located in the Midwest, 30 were

financial managers from an accounting firm in the Midwest, 183 were employees in a food processing facility located in the Northwest, 40 were employees from a business supply company located in the Midwest, and 30 were employees in a food service supplier located in the Northwest. The companies differed in the degree to which they had established and supported empowered teams. Although many of the teams were self-managing, there were task and cross-functional teams in the sample as well.

The sample contained 221 female and 153 male employees. The ages of the participants ranged from 16–65, and the average age was 35. Sixty-six per cent of the participants were Caucasians and 34 per cent were minorities. The participants had a variety of educational backgrounds ranging from a high school to a professional degree. Average organizational tenure for participants was 4–6 years. All participants volunteered to participate in the study.

Materials and procedure

The ELQ and the other two leadership scales (the LBDQ and the MPS) were administered as part of a leadership skills survey in each of the five companies. The scales were administered to groups of 10–20 employees at the companies' sites.

Results

The analysis consisted of two parts. First, we cross-validated the ELQ five-factor model in the new sample. Then, we compared the five ELQ constructs (see Appendix) to the leader behavior constructs measured by the other two instruments.

Cross-validation Scale means, standard deviations, and coefficient alpha reliability estimates are shown in parentheses in Table 2. The results for Study Three are similar to the results from Study Two and indicate satisfactory reliability for all five ELQ subscales.

Next, to cross-validate the five ELQ factors, we first formed item dyads, as in Study Two, using pairs of items within an ELQ subscale. The confirmatory five-factor model was then fit to the data from the new sample. To fit the model, we first computed initial estimates with an ordinary least squares (OLS) procedure, then used generalized least squares (GLS) estimation to obtain the final estimates. These estimates were computed with PROC CALIS, a SAS function.

The results suggest a somewhat better fit of the five-factor ELQ model in the cross-validation sample than in the original factor analysis of Study Two (see Table 1). The chi-square was somewhat large ($\chi^2 = 344.3$, $df = 142$), though given the larger sample size in Study Three ($N = 374$) than in Study Two ($N = 205$), this was not unexpected. The fit statistics that are less dependent on sample size showed an improvement in Study Three: The GFI was 0.91, the AGFI was 0.87, and the RMSR was 0.04.

Table 1 also shows the fit statistics for the two four-factor models described previously. A comparison of the χ^2 for the two four-factor models, with the χ^2 for the five-factor model, reveals a difference of more than 40. Given that these differences involve just 4 degrees of freedom, Study Three provides additional support for the five-factor model.

Table 2 shows that the factor loadings were largely the same across Study Two and Study Three; the factor intercorrelations, presented in Table 3, were also similar across data sets. In sum, these results provide evidence that supports the stability of the ELQ factor structure.

Table 5. Correlations between leader behavior constructs

	ELQ					LBDQ	
	Leading by Example	Coaching	Participative Decision-making	Informing	Show Concern	Initiating Str.	Consideration
LBDQ							
Initiating Str.	0.69	0.75	0.62	0.69	0.66	1.0	–
Consideration	0.70	0.76	0.77	0.67	0.81	0.69	1.0
MPS							
Informing	0.47	0.49	0.49	0.47	0.50	0.47	0.51
Planning	0.52	0.60	0.51	0.50	0.51	0.57	0.50
Clarifying	0.49	0.65	0.54	0.60	0.54	0.59	0.54
Consulting	0.63	0.65	0.74	0.57	0.67	0.55	0.67
Inspiring	0.63	0.72	0.65	0.64	0.62	0.60	0.65
Recognizing	0.59	0.68	0.74	0.60	0.68	0.52	0.66
Monitoring	0.41	0.58	0.49	0.52	0.50	0.54	0.50
Problem Solving	0.58	0.65	0.61	0.51	0.61	0.59	0.59
Supporting	0.62	0.67	0.75	0.57	0.73	0.53	0.70
Team Building	0.61	0.72	0.71	0.65	0.72	0.62	0.71
Networking	0.42	0.46	0.48	0.45	0.44	0.38	0.42
Delegating	0.36	0.39	0.45	0.38	0.40	0.28	0.41
Mentoring	0.50	0.59	0.56	0.51	0.50	0.48	0.52
Rewarding	0.48	0.48	0.50	0.48	0.45	0.42	0.47

Note. All correlations are significant at the $p = 0.001$ level.

Comparison to other leader behavior measures To determine how the five ELQ subscales were related to the LBDQ and MPS constructs, we performed several analyses. The first was a simple correlational analysis, which examined the bivariate relations among the ELQ constructs and those of the other instruments. The second was a regression analysis, which used responses on the LBDQ and MPS subscales to predict responses on the ELQ subscales. The final analysis used canonical correlation to determine the multivariate similarity between the ELQ and each of the other two instruments.

The Pearson product–moment correlations between the ELQ subscales and those of the LBDQ and MPS can be seen in Table 5. The correlations are all strong, positive, and significant at the $p = 0.001$ level. This pattern of correlations suggests that the ELQ constructs are significantly related to the other leader behavior constructs. Note the high correlation between the ELQ Showing Concern/Interaction with the Team subscale and the LBDQ Consideration subscale. This finding confirms the similarity of this ELQ construct with the older LBDQ construct (see Table 5). However, it is clear that the ambient level of correlation in this data set is quite high. For example, the correlation between the two LBDQ constructs (i.e., Initiating Structure and Consideration) is 0.69. The consistently high correlations between all behavior constructs, regardless of the instrument, suggests that ratings of all types of leader behaviors are substantially related. Therefore, we should not expect a subscale assessing some aspect of empowerment (e.g., Leading by Example) to have a near-zero correlation with a subscale measuring traditional leader behavior (e.g., Initiating Structure).

To examine the degree to which the ELQ provides information redundant with the older measures, we regressed each of the ELQ scales on the LBDQ and MPS scales. The adjusted R^2s from these regressions can be seen in Table 6. These values indicate that, in general, slightly over

Table 6. Regression results: Adjusted R^2s

	Independent Variables	
ELQ Scales	LBDQ Scales	MPS Scales
Leading by Example	0.57	0.53
Coaching	0.68	0.65
Participative Decision-Making	0.62	0.69
Informing	0.54	0.51
Showing Concern/Interacting	0.67	0.65

Table 7. Canonical correlations

Canonical Variable	ELQ and LBDQ	ELQ and MPS	MPS and LBDQ
1	0.88†	0.87†	0.82†
2	0.44†	0.52†	0.41†
3	–	0.39†	
4	–	0.29*	
5	–	0.18	

* $p = 0.05$; † $p = 0.001$.

half of the variance of the ELQ scales can be accounted for by these two instruments. Interestingly, the 14 scales from the MPS do not seem to explain more ELQ variance than the two LBDQ scales. Of the ELQ scales, Participative Decision Making and Showing Concern/Interacting with the Team showed the strongest relation to the LBDQ and MPS scales, suggesting more overlap. The R^2s for Leading by Example and Informing were somewhat lower, suggesting greater uniqueness.

In addition to the simple and multiple correlations, it is also important to look at the multivariate relation between the ELQ, as an instrument, and the other instruments. To this end, we computed canonical correlations between the ELQ and LBDQ, the ELQ and MPS, and the LBDQ and MPS. The results can be seen in Table 7. In each case, the first canonical variable was quite large, indicating substantial overlap. Note that the LBDQ and the MPS scales showed the same basic pattern of association as the analyses involving the ELQ: a substantial first canonical variable, followed by a much smaller one. This finding suggests that each of these scales contains secondary characteristics, orthogonal to their first canonical dimension, that are similar.

General Discussion

The purpose of this paper was to develop a new measurement instrument for assessing leader empowering behaviors. The first study, the elicitation study, revealed eight conceptually distinct categories of leader empowering behaviors. We then constructed an instrument to measure each of these behavioral categories and validated it in several organizations. The initial empirical investigation of the reliability and factor structure of the new instrument supported a five-factor model. A third study was conducted to cross-validate the results for the new instrument and relate it to two well-established leader behavior instruments.

Empirical evaluation of the ELQ

The results of Study Two suggest that the data can be accounted for by several alternative models. Conceptual judgments of the items, however, provided support for five factors: Leading by Example, Coaching, Participative Decision-Making, Informing, and Showing Concern/ Interacting with the Team. Some of these categories of leader behaviors are similar to those found in the existing leadership literature, namely: coaching and training, and communicating with work groups. However, the ELQ behavioral categories seem more characteristic of the roles and activities of leaders of empowered teams, as described by Manz and Sims (1987) and Manz (1990).

The presence of alternative models in the second study can be accounted for by high correlations among some of the factors. As suggested by Table 4, LISREL's factor intercorrelations may be inflated. However, even when disattenuated, the ELQ scale correlations are still quite high. One explanation for these high correlations is that leader behaviors tend to co-occur, either because of unique organizational values/characteristics or the accompanying leadership training programmes. It is possible that the ELQ behavioral categories would be more distinct, empirically, in other organizations. Resolving this issue requires the evaluation of the factor structure of this instrument in different types of samples (i.e., traditional workers versus team members) and organizations (i.e., traditional versus participative).

Study Three allowed us to examine this issue further. The cross-validation results provided strong support for the five-factor solution, using a more diverse sample of organizations and teams. The degree of empowering practices, climate, and structures in that sample varied greatly across the five participating organizations. Nevertheless, the results of Study Three showed similar correlations among leader behavior categories within the ELQ, indicating some cross-organizational stability in the ELQ's factor structure.

The comparison of the ELQ subscales and those of the LBDQ and MPS in Study Three also indicated that the size of the correlations among the ELQ subscales was not unusual for other measures of leadership behavior. This finding suggests that the observed high correlations between leader behaviors are not just due to sample or organizational characteristics, but may instead be a property of leader behavior rating scales. Regardless of the instrument or the particular behavioral category used, subordinates' ratings were either consistently favorable or unfavorable. We believe that these results demonstrate a 'halo effect', or subordinates' tendency to have a holistic perception, favorable or unfavorable, of their supervisor/manager that affects their ratings. Thus, observed high correlations among behavioral categories should not be taken as evidence that these categories are essentially redundant.

The ELQ and empowerment

Conger and Kanungo (1988), Spreitzer (1996), and Thomas and Velthouse (1990) have identified a number of contextual (environmental, social-structural) characteristics that effect empowerment (e.g., organizational factors, supervisory style, reward systems, job design). Leadership behavior (or supervisory style) is believed to contribute to empowerment to the degree to which it effects an individual's or team's perception of meaning, competence (or self-efficacy), self-determination, or impact (Spreitzer, 1996). According to Bandura (1986), self-efficacy or competence (and thus empowerment) can be influenced though providing positive emotional support, through words of encouragement and positive persuasion, through having models of success with

whom people identify, and though the actual experience of the mastering of a task with success (Conger, 1989). The categories of the ELQ (Participative Decision Making, Showing Concern/ Interacting with the Team, Leading by Example, Informing, and Coaching) correspond quite well with the mechanisms described by Bandura. The role of Coaching, Informing, and Participative Decision-Making behaviors in the empowerment process has been suggested by a number of researchers (see Bennis and Nanus, 1985; Blau and Alba, 1982; Bowen and Lawler, 1992; Neilson, 1986). In addition, the ELQ categories parallel socio-structural characteristics found to effect empowerment (e.g., participative unit climate, sociopolitical support, access to information, and training and development) (Spreitzer, 1996).

Manz and Sims (1987) argued that the uniqueness of the role of leaders of empowered work groups lies in the commitment to the philosophy that teams should successfully complete necessary leadership functions for themselves. According to these authors, the dominant role of the external work group leader is to lead others to lead themselves. Thus, the fundamental difference between traditional leader behavior variables and the ones measured in the ELQ is the shift in the source of control from the leader to the team members. The leader behaviors of the ELQ are aimed at helping team members function and perform as a self-managed business unit.

In the balance, the set of behaviors that are required for effective leadership in the empowered team environment seem to characterize 'leadership' rather than 'management' behaviors. Although there is some disagreement regarding the utility of the distinction (Yukl and Van Fleet, 1992), many argue that it is critical (see Bennis and Nanus, 1985; Zalenik, 1977). Unfortunately, the exact nature of the difference between the two functions is not entirely clear (see Bennis and Nanus, 1985; Gardner, 1990; Kotter, 1990). Generally, however, there is a greater emphasis on developing others and influencing commitment with leadership behaviors than with management behaviors (Bennis and Nanus, 1985; Yukl and Van Fleet, 1992). The ELQ categories (e.g., Coaching, Informing, Leading by Example, Participative Decision-Making) seem to reflect this emphasis.

The ELQ and traditional leader measures

Study Three demonstrated the uniqueness and value of the ELQ in relation to other existing measures of traditional leadership behaviors. While the ELQ overlapped somewhat with the LBDQ and the MPS, it was not redundant with either of them. For example, even though the ELQ and the MPS were administered in the same environment, the average correlation between the 14 constructs of the MPS and the ELQ was only 0.56. Only slightly over half of the variance of the ELQ could be accounted for by the LBDQ and MPS. Given that the reliability of the measures was substantially high, this variance appears reliable. This large amount of unique variance indicates that empowered team environments require leaders to behave in ways that are not found in traditional work environments, nor measured by traditional measures of leader behavior.

Overall, the results of Study Three were consistent with our initial expectations. We expected a modest degree of overlap in the behavioral requirements of leaders in empowered team and traditional environments (much like two partially overlapping circles in a Venn diagram). The uniqueness of the ELQ and the context in which it was developed, however, suggests that it should be more useful in empowered versus traditional settings.

Applications

The interpretation of the results of Study Two and Study Thee depends upon the intended use of this instrument. Clearly, the application of this instrument for assessment, training, or performance evaluation would benefit from more, rather than fewer behavioral categories. The information included in each category can be very useful for assessing and improving leadership effectiveness as well as evaluating the effectiveness of leader training programmes. Collapsing categories together, due to their high correlations, could decrease the quantity and quality of information that can be provided by the instrument. On the other hand, a single empowering leadership behavior dimension would probably suffice for a predictive validity study relating, for example, general intelligence to leader behavior.

The degree to which the ELQ would be useful for empowered environments in which there are different types of teams (e.g., task, problem-solving, cross-functional), and to individuals is an open question. Consistent with the purpose of the paper, the categories of the ELQ were derived from research with empowered (autonomous or self-managing) teams. Given this constraint, the degree to which the ELQ would be applicable to other types of teams is unclear. The make-up of the final ELQ categories and their relation to the empowerment literature, suggests that the ELQ may be useful for other team environments as well. Similarly, the final five categories of behavior identified by the ELQ (Coaching, Informing, Leading by Example, Showing Concern/Interacting with the Team, and Participative Decision-Making) appear to be relevant for both teams and individuals. Although empowerment is most often discussed with regard to teams (as teams have become the primary means though which work is done in organizations), there is little in the past research by Bandura (1986), Conger and Kanungo (1988), Spreitzer (1995), and Thomas and Velthouse (1990) that would suggest that the process is not applicable to individuals as well.

Future directions

This paper provides one of the first empirical accounts of what many suggest is a new type of leadership. By no means, however, is the task complete. Further comparisons of the ELQ dimensions with others in the leadership literature is needed. For example, some of the behaviors identified by the ELQ (e.g., Showing Concern/Interacting with the Team) may be similar to those identified in the transformational and/or charismatic leadership literature (e.g., Providing Individual Support) (see House, 1977; Podsakoff *et al.*, 1990). In addition, future studies investigating the predictive validity of the ELQ in empowered and traditional environments is needed as well.

There is also a need for the continued refinement and validation of the scale. Future research relating the ELQ behavior constructs with measures of empowerment (e.g., Spreitzer, 1996) and effectiveness would be a useful next step. In addition, future studies of empowering leadership need to examine the role of organizational characteristics in shaping and constraining leader behavior. This research should also explore theoretical and empirical relationships between this instrument and other processes and outcomes of empowered teams. A nomological framework that relates leadership, organizational structures, empowerment, and work outcome variables should be empirically examined. This process of construct validation would improve our understanding of the effectiveness and potential use of the leader behavior inventory. A greater understanding of empowering leadership would have implications for both the theory and practice of management.

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Appendix

ELQ items

Leading By Example

Sets high standards for performance by his/her own behavior
Works as hard as he/she can
Works as hard as anyone in my work group
Sets a good example by the way he/she behaves
Leads by example

Participative Decision-Making

Encourages work group members to express ideas/suggestions
Listens to my work group's ideas and suggestions
Uses my work group's suggestions to make decisions that affect us
Gives all work group members a chance to voice their opinions
Considers my work group's ideas when he/she disagrees with them
Makes decisions that are based only on his/her own ideas

Coaching

Helps my work group see areas in which we need more training
Suggests ways to improve my work group's performance
Encourages work group members to solve problems together
Encourages work group members to exchange information with one another
Provides help to work group members
Teaches work group members how to solve problems on their own
Pays attention to my work group's efforts
Tells my work group when we perform well
Supports my work group's efforts
Helps my work group focus on our goals
Helps develop good relations among work group members

Informing

Explains company decisions
Explains company goals
Explains how my work group fits into the company
Explains the purpose of the company's policies to my work group
Explains rules and expectations to my work group
Explains his/her decisions and actions to my work group

Showing Concern/Interacting with the Team

Cares about work group members' personal problems
Shows concern for work group members' well-being
Treats work group members as equals
Takes the time to discuss work group members' concerns patiently
Shows concern for work group members' success
Stays in touch with my work group
Gets along with my work group members
Gives work group members honest and fair answers
Knows what work is being done in my work group
Finds time to chat with work group members

