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Abstract

In this paper we discuss key aspects of empowering leadership as a basis for conceptualizing and operationalizing the construct. The conceptualization resulted in eight behavioral manifestations arranged within three influence processes, which were investigated in a sample of 317 subordinates in Study 1. The results supported the validity and reliability of a two-dimensional, 18-item instrument, labeled the Empowering Leadership Scale (ELS). In Study 2 (N = 215) and Study 3 (N = 831) the factor structure of ELS was cross-validated in two independent samples from different work settings. Preliminary concurrent validation in Study 1 and 2 found that ELS had a positive relationship to several subordinate variables, among others self-leadership and psychological empowerment. In Study 3 ELS was compared with scales measuring leader-member exchange (LMX) and transformational leadership. Discriminant validity was supported, and moreover, ELS showed incremental validity beyond LMX and transformational leadership when predicting psychological empowerment.

Keywords: empowering leadership, construct clarification, scale development, validation

Empowering Leadership: Construct Clarification, Conceptualization, and Validation of a New Scale

The notion of empowerment was introduced in the field of management in the 1980s, and seems based on a need for an organizational concept that could promote employee productivity (Bartunek & Spreitzer, 2006) relative to fundamental technological and commercial changes that took place both in businesses and the public sector (Fernandez & Moldogaziev, 2011; Hill & Huq, 2004). These changes led to, among others, increased customer/client orientation, more flexible, flattened, and decentralized organization designs, and improvements in quality and efficiency for most organizations. The nature of work has also changed substantially in the last decades by becoming more complex and cognitively demanding (Humphrey, Nahrgang, & Morgeson, 2007), and highly skilled and educated "knowledge workers" have become the core of a rapidly growing segment of the workforce (Parker, Wall, & Cordery, 2001).

In this changing "landscape" empowering leadership (EL) has emerged as a particular form of leadership, distinct from other approaches such as directive, transactional, and transformational leadership (Pearce et al., 2003). At its core, employee empowerment involves enhanced individual motivation at work through the delegation of responsibility and authority to the lowest organizational level where a competent decision can be made (Conger & Kanungo, 1988; Thomas & Velthouse, 1990). As such, EL may generally be defined as "behaviors that share power with subordinates" (Vecchio, Justin, & Pearce, 2010, p. 531). Despite a growing interest in investigating different implications of EL (e.g., Randolph & Kemery, 2011; Raub & Robert, 2010), only a few scale development studies have been published on the construct itself (Arnold, Arad, Rhoades, & Drasgow, 2000; Cox & Sims, 1996; Konczak, Stelly, & Trusty, 2000; Manz & Sims, 1987). The EL measures that have been most frequently employed during the last decade may be categorized into three groups.

The first group includes studies (e.g., Dewettinck & van Ameijde, 2011; Raub & Robert, 2010) that employed the Empowering Leadership Questionnaire (ELQ) developed by Arnold et al. (2000), or studies (e.g., Hakimi, van Knippenberg, & Giessner, 2010) that used the Leader Empowering Behavior Questionnaire (LEBQ) developed by Konczak et al. (2000). This first group also includes studies (e.g., Boudrias, Gaudreau, Savoie, & Morin, 2009; Boudrias et al., 2010) that employed a combination of both measures. The second group includes studies (e.g., Tekleab, Sims, Yun, Tesluk, & Cox, 2008; Vecchio et al., 2010; Yun, Cox, & Sims, 2006) that used EL measures based on the Self-Management Leadership Questionnaire (SMLQ) developed by Manz and Sims (1987), and/or the Strategic Leadership Questionnaire II (SLQII) originated by Cox and Sims (1996) and later analyzed by Pearce and Sims (2002). These two latter measures seem to be based on the superleadership approach of EL, which in particular has focused on facilitating subordinates' self-leadership (Manz & Sims, 2001). The third group consists of studies (e.g., Wallace, Johnson, Mathe, & Paul, 2011; Zhang & Bartol, 2010) that employed an EL scale developed by Ahearne, Mathieu, and Rapp (2005).

Both the ELQ and the SMLQ were developed inductively based on data from settings characterized by external leadership of self-managing work teams. The SLQII seems also largely to be related to team leadership or shared leadership (e.g., Pearce & Sims, 2002). Vecchio et al. (2010) argued that work conditions generally do not "move in the more radical direction of creating a genuine self-managed team structure" (p. 531). This observation highlights the importance of studying EL at the individual level in more traditional hierarchical structures wherein leaders relate to individual employees to a greater extent than teams. The LEBQ and Ahearne et al.'s scale seem to be developed with the individual level as a reference point. However, the discriminant validity of the LEBQ relative to other related leadership approaches was not assessed by Konczak et al. (2000), whereas Ahearne et al.'s

measure was not validated beyond an unrestricted maximum-likelihood factor analysis to examine its dimensionality and an assessment of the concurrent validity relative to the outcome variables in their study. Thus, we believe that a well validated measure developed in an individualized context may add value to future research on EL. Moreover, Arnold et al. (2000) noted that there is little theory focusing on the role of effective empowering leader behavior, which seems equally valid today. We therefore aimed to fill some of this lack and additionally identify key mediators of EL.

Accordingly, the main purpose of the present paper is, at the individual level of analysis, (1) to theoretically underpin and define EL as guideline for (2) conceptualization and operationalization of the construct, (3) to identify central mediators, and (4) to build, refine, and validate a new instrument to measure the construct. We investigate the psychometric properties and validity of the new EL measure through three studies representing different work settings. In the first study we analyze behaviors that may theoretically be included in the superordinate construct of EL, and additionally investigate the initial concurrent validity of the new measure relative to subordinates' self-leadership, performance, work effort, and job satisfaction. In our second study we replicate the factor structure obtained in Study 1, and assess the concurrent validity further relative to subordinates' psychological empowerment and creativity. In the third study we replicate the factor structure once again in a new independent sample, and we investigate the discriminant and incremental validity for the new scale when compared with other popular and well researched measures of leader behavior that may be associated with empowerment.

Theoretical Underpinning of Empowering Leadership

Central Influence Processes of Empowering Leadership

EL involves a transfer of power from top management to knowledge workers with high autonomy and who are able to take initiative and make decisions about daily activities

(Ford & Fottler, 1995). Accordingly, such work characteristics require particular forms of leadership, and in this regard EL has been proposed to be a more effective approach compared with among others, directive, transactional, and transformational leadership (Liu, Lepak, Takeuchi, & Sims, 2003). Considering that leadership in general is described as a process of influencing others (Yukl, 2010), to empower is more about giving influence to than having influence over. In fact, scholars (e.g., Houghton & Yoho, 2005; Manz & Sims, 2001) have suggested that subordinates develop relatively less dependence from EL compared with directive, transactional, and transformational leadership. In such perspective facilitation and support of autonomy is a key characteristic of EL.

The justification to support autonomy is particularly found in research on Hackman and Oldham's (1976) job characteristic model and in self-determination theory (SDT; Deci & Ryan, 1985). For example, in a comprehensive meta-analysis of the work design literature by Humphrey et al. (2007) autonomy was found to be the only motivational characteristic for which the 95 percent confidence interval (CI) did not include zero for the relationship with objective performance. Moreover, research on the SDT model has shown that an autonomy-supportive managerial style yields a variety of positive subordinate outcomes, including performance evaluations, task motivation, and psychological adjustment on the job (e.g., Baard, Deci, & Ryan, 2004; Deci, Connell, & Ryan, 1989; Deci et al., 2001). Other relevant theoretical sources supporting the role of autonomy and self-direction include behavioral self-management theory (e.g., Thorenson & Mahoney, 1974), self-leadership theory (e.g., Manz, 1986), and social cognitive theory (e.g., Bandura, 1986).

We suggest that empowering leaders in particular can affect subordinates' autonomy through three different but related influence processes. The first is the classical socio-structural approach that involves sharing power and delegating formal responsibility and authority (e.g., Burke, 1986). This approach has similarities with related perspectives such as

participative leadership and employee involvement (e.g., Lawler, 1986; Likert, 1961). However, providing subordinates with formal autonomy may not necessarily be sufficient; subordinates should also develop adequate motivation for working autonomously. Conger and Kanungo (1988) noted this assertion, and pointed out that "delegating or resource sharing is only one set of conditions that may (but not necessarily) enable or empower subordinates" (p. 474), and advocated that empowerment alternatively should be viewed as a motivational approach. Likewise, Thomas and Velthouse (1990) claimed that empowering may also mean to energize, which is in line with a motivational usage of the term. Therefore, in addition to sharing formal power, leaders should support subordinates motivation to work autonomously.

A third way to influence autonomy is to promote subordinates' learning and development in their work roles, including the capability to lead themselves (Manz & Sims, 2001). It is a self-evident fact that the experience of being competent, defined as a basic psychological need in SDT (Deci & Ryan, 1985), is necessary to be efficient in an autonomous work role. Likewise, the ability to be self-leading and self-reliant is clearly a prerequisite to cope with autonomy. Taken together, we suggest that leaders particularly can empower subordinates by giving them autonomy through *sharing power*, promote their energy and effort in coping with autonomy through *motivation support*, and facilitate their skills and competence in working autonomously through *development support*.

Based on the above discussion we provide the following definition of EL, which will serve as a guideline in the subsequent further conceptualization and operationalization of the EL construct: *Empowering leadership is the process of influencing subordinates through power sharing, motivation support, and development support with intent to promote their experience of self-reliance, motivation, and capability to work autonomously within the boundaries of overall organizational goals and strategies.*

Essential Behavior Manifestations of Empowering Leadership

In this section we identify core empowering leader behaviors which can be considered as more specific operationalizations of the three influence processes described above (i.e., power sharing, motivation support, and development support). We based our understanding on constructs defined in superleadership as a starting point. We assumed that superleadership with its substantial focus on supporting autonomy represented a well suited foundation for our theoretical approach to EL. Superleadership is defined as the process of leading others to lead themselves and originated in the works of Manz and Sims (1987, 1989, 1991, 2001). Theoretically this EL approach is inspired largely by social cognitive theory (Bandura, 1986) and participative goal-setting research (e.g., Erez & Arad, 1986). When superleadership was considered to have shortcomings related to our perspective on EL, we drew on other relevant sources (e.g., Arnold et al., 2000; Konczak et al., 2000) to compensate for these limitations.

***Power sharing*.** Power sharing is one of the basic assumptions of employee empowerment (Burke, 1986; Kanter, 1979). However, superleadership appears to a lesser degree to focus on formal power sharing as an explicitly expressed construct, although it is indirectly emphasized via its facilitation of self-leadership and independence (e.g., the behavior construct "encourage independent actions"; Pearce & Sims, 2002). Nevertheless, to be "truly" empowering EL should include a clear and distinct reference to the leader's delegation of formal authority to subordinates, such that they, among others things, can make autonomous decisions. Yukl (2010) differentiates between consultation and delegation as distinct decision procedures. Consultation takes place when the leader asks subordinates for their opinions before he/she makes decisions (i.e., participation), whereas delegation is when the leader gives subordinates authority and responsibility for making decisions. Yukl and Fu (1999) described delegation as more empowering than consultation, and Leana (1987) noted that subordinates get real autonomy through delegation. On the other hand consultation, or rather, participation in decision making does not entail this autonomy. Arnold et al. (2000)

included “participative decision making” in their EL measure, whereas Konczak et al. (2000) included “delegation of authority.” We followed Konczak et al. here, because we believe that successful delegation will give subordinates a greater feeling of self-determination and perceived impact than only participation. Thus, we consider *delegation* to be central in EL.

According to Vroom and Yetton (1973) delegation is unlikely to be effective unless a manager and a subordinate share the same task objectives; in other words, goals at different levels should be coordinated. Spreitzer (1996) stated that “in order for individuals to feel empowered, they must understand the goals of their work units and how their own work can contribute to those goals” (p. 488). Coordination also implies sharing of other work related information, and Kanter (1977) noted that having access to information is in itself empowering. For example, information about the overall goals and mission helps create a sense of meaning and purpose (Conger & Kanungo, 1988), and informs employees about how their jobs fit within the organizational context (Ford & Fottler, 1995). Despite that coordination and information sharing are articulated in the conceptual work of superleadership (e.g., Manz & Sims, 2001), it seems not to have been operationalized in any of the measures that build upon this EL approach (e.g., Manz & Sims, 1987; Cox & Sims, 1996). However, both Arnold et al., (2000) and Konczak et al., (2000) identified information sharing as a central behavior of the empowering leader. An inspection of the items that underlie this behavior construct in Arnold et al.’s measure revealed that coordination is represented as well. Thus, we consider *coordination and information sharing* as important to complement delegation under the heading of power sharing.

Motivation support. A review of the literature on superleadership (e.g., Manz & Sims, 1989, 1991, 2001; Sims & Lorenzi, 1992; Sims & Manz, 1996) reveals a set of behaviors that an empowering leader should manifest to promote employees’ motivation to work autonomously. First, superleaders encourage subordinates to take initiative, start task

oriented efforts, make decisions, and engage in self-leadership (Manz & Sims, 1991, 2001; Yun et al., 2006). The concept of personal initiative is explained as a "behavior syndrome resulting in an individual's taking an active and self-starting approach to work, and going beyond what is formally required in a given job" (Frese, Fay, Hilburger, Leng, & Tag, 1997, p. 140). In accordance with SDT, encouraging self-initiation is an autonomy-supportive behavior through which managers can create autonomous motivation in their subordinates (Gagné & Deci, 2005). Clearly, to *encourage initiative* is important for an empowering leader.

Second, encouraging subordinates to work towards self-defined and inspiring goals has been proposed as an important part of superleaders' behavior (Houghton & Yoho, 2005; Manz & Sims, 2001; Sims & Lorenzi, 1992). Locke and Latham (2002) argued that goals affect motivation and performance through four mechanisms. They (a) give direction to attention and action, (b) give energy to mobilize effort, (c) affect persistence and prolong effort, and (d) lead to the discovery and use of task-relevant knowledge and strategies. Thus, to *encourage goal focus* actively empowers employees and stimulates their motivation.

Third, superleaders' ability to show interest, confidence, and trust is important for enhancing subordinates' positive thought patterns and self-efficacy beliefs (Manz & Sims, 1989, 1991). To listen to their opinions, ideas and suggestions may contribute to their experience of being considered and taken into account, which may support autonomy and have implications for motivation and efficacy (Deci et al., 1989). In addition, empowering leaders should be familiar with their subordinates' capabilities and encourage their use of their competences. Such efforts may contribute to the development of their self-efficacy beliefs, which can be influenced by positive emotional support and words of encouragement and positive persuasion (Bandura, 1997). Additionally, Conger and Kanungo (1988) related a

sense of self-efficacy to their motivational model of empowerment. Consequently, leaders' *efficacy support* is important regarding subordinates' motivation.

We also suggest that empowering leaders affect subordinates' motivation by creating a climate where employees feel inspired (Maynard, Gilson, & Mathieu, 2012), which is also included as a key dimension of transformational leadership (Bass, 1985); another leadership approach that has been associated with empowerment (e.g., Castro, Perinan, & Bueno, 2008). Following this perspective, an empowering leader may inspire subordinates and create positive emotional states by demonstrating enthusiasm and trust in future goals and perspectives. Menon (2001) suggested that internalized ideas about the future represent an enabling power that contributes to a psychologically empowered state. Talking optimistically about the future can also create positive thought patterns and opportunity-seeking among subordinates, which has been found to be a cognitive strategy in the concept of self-leadership (Neck & Manz, 1996). In her model of EL, Howard (1998) included 'the inspirer' as a leadership role. Thus, employees may be empowered by the *inspiring* behavior of their leaders.

Development support. A central characteristic of superleaders is to serve as observable models for their subordinates (Manz & Sims, 1991, 2001) by systematically displaying effective self-leadership skills and other favorable work related behavior. Model learning is a component in social cognitive theory and the principle of triadic reciprocality (Bandura, 1986), which states that a person's cognitive processes, behaviors, and environmental influences may all be related. This implies that a behavior may be learned or modified by observing others, especially those who are seen as having status, power, success and/or competence (Sims & Lorenzi, 1992). Despite the fact that modeling is one of the core characteristics of superleadership, we have not found any instrument based on this EL approach that explicitly includes such leader behaviors – although Arnold et al.'s (2000)

instrument seeks to capture this behavior with a dimension labeled "leading by example." However, we interpret the items that underlie this dimension to be more a qualitative description of the leader's behavior, which does not necessarily imply that the leader and subordinate spend sufficient time together for the subordinate effectively to learn self-leadership. Successful modeling requires that "the modeled behavior should be repeated a number of times for the observer, and the behavior should be displayed in a vivid and detailed manner" (Sims & Lorenzi, 1992, p. 155). Thus, we consider *modeling* to be central in empowering leaders' support of subordinates' learning and development.

Additionally, superleaders guide employees in the transition from dependence upon the leader to independent self-leadership (Manz & Sims, 2001), which includes behaviors such as teaching, guidance, encouraging, and coaching. Within the terminology of superleadership this behavior is called "guided participation." Feeling empowered may include a sense of competence and acting with skill (Conger & Kanungo, 1988), and leader behaviors that help enhance employees' learning and mastery are associated with empowerment. In line with this, Beattie (as cited in Hamlin, Ellinger, & Beattie, 2006) identified instruction, coaching, guidance, and counseling as discrete behaviors of managers as facilitators of learning. Within the development perspective, coaching has emerged as an important attribute of leaders, and has, among others, been defined as a process of giving guidance, encouragement, and support (Redshaw, 2000). Both Arnold et al. (2000) and Konczak et al. (2000) identified coaching as an empowering leader behavior, which has certain similarities with guidance. Clearly, empowering leaders use *guidance* actively to empower and develop employees.

Taken together, we have identified eight different empowering leader behaviors which are suggested to be arranged within three influence processes. The first process is labeled "power sharing" and includes the behaviors "delegating" and "coordinating and information sharing." The second process is labeled "motivational support" and includes the behaviors

"encourage initiative," "encourage goal focus," "efficacy support," and "inspiring," whereas the third process is labeled "development support" and includes the behaviors "modeling" and "guidance."

Central Mediators of Empowering Leadership

The label "empowering" clearly points to a basic purpose with EL; that is, the empowering "actions" (i.e., behaviors) taken by leaders should create specific empowering "reactions" in subordinates. A discussion of EL is therefore not complete without examining the subordinate side of the empowerment equation in more detail. Empowerment reactions of subordinates may be seen as different from ordinary outcome variables, such as diverse attributions of the leader (e.g., leader satisfaction, leader effectiveness), job satisfaction, commitment, and performance (van Knippenberg & Sitkin, 2013). Instead they may be considered as central characteristics of empowered employees that mediate the effect of EL on subordinate outcomes. We will therefore argue that leader empowering actions and subordinate empowering reactions are inseparably tied to the empowerment concept itself. Following this reasoning we next describe two key characteristics of empowered employees; that is, to feel psychologically empowered and efficiency in self-leadership.

In the literature there is agreement that empowered employees are characterized by being in a mental state called psychological empowerment, defined as intrinsic task motivation manifested in four cognitions; meaning, competence, self-determination, and impact (Thomas & Velthouse, 1990). Together, these four cognitions reflect an individual's active orientation to his or her work role (Spreitzer, 1995). Empowerment has then really occurred only if employees experience this state (Greasley et al., 2008). This also implies that "for the empowering behavior of a leader to have its intended effect, the focal employee must, in turn, feel psychologically empowered" (Zhang & Bartol, 2010, p. 110). The positive association between EL and psychological empowerment has been supported empirically in a

number of studies, which additionally found psychological empowerment to be a mediating mechanism between EL and employee outcomes such as challenging extra-role behaviors (Raub & Robert, 2010), behavioral empowerment (Boudrias et al., 2009), job satisfaction and organizational commitment (Konczak et al., 2000), creativity (Zhang & Bartol, 2010), and intention to stay (Dewettinck & van Ameijde, 2011).

We will argue, however, that the experience of psychological empowerment is a necessary but not sufficient condition to cope with autonomous work roles; the individual employee should also become efficient in self-leadership. The self-leadership capability of employees is described as the heart of empowerment (Manz, 1992), and consists of a set of strategies and skills through which individuals influence themselves toward higher levels of motivation, performance, and effectiveness (Manz, 1986). Self-leadership is, however, not a sufficient substitute for external leadership, and Stewart, Courtright, and Manz (2011) identified EL as an important external factor that facilitates employees' self-influencing skills. Previous studies have indicated positive associations between EL and self-leadership (e.g., Tekleab et al., 2008; Yun et al., 2006), whereas in other studies self-leadership has shown positive associations with employee outcomes such as self-efficacy (Prussia, Anderson, & Manz, 1998), job performance (Frayne & Geringer, 2000), and job satisfaction (Neck & Manz, 1996). To the best of our knowledge self-leadership have not yet been investigated as mediator between EL and subordinate outcomes.

Based on this reasoning we suggest that psychological empowerment and self-leadership represent necessary "be and do" characteristics respectively of empowered employees. Houghton and Yoho (2005) proposed that self-leadership and psychological empowerment could be considered as sequential variables with self-leadership operating as a mediator between EL and psychological empowerment. However, they also pointed out that this relationship may be multi-directional, in that "a person experiencing feelings of self-

determination, competence, purpose and impact may be more likely to engage in self-leading behaviors than a person who is not experiencing psychological empowerment" (p. 68). Moreover, in light of social cognitive theory (Bandura, 1986) it is reasonable to assume that employees' self-leadership practice is not the only source that affects the psychological state of being empowered; external sources such as empowering behaviors of leaders may also play a role. We will therefore argue that EL, at least partially, directly affect both psychological empowerment and self-leadership. Other empowering forms of leadership, such as transformational leadership (Bass, 1985) and leader-member exchange (LMX; Dansereau, Graen, & Haga, 1975) also have the potential to influence these two empowerment characteristics of employees. However, EL, which main purpose clearly is to empower employees, should be the leadership approach that may describe the best qualifications to do that. Recent empirical evidence provides some support for this view in that Tekleab et al. (2008) found that EL explained incremental variance in subordinate self-leadership after controlling for transformational leadership, whereas the reverse was not the case.

Research Questions

The model of EL discussed above provides a theoretical definition of the construct, a set of eight first-order EL behaviors, and how these behaviors are arranged within three higher-order influence processes. Consequently, we initially aimed to investigate the fit of a three second-order correlated factors model, and whether confirmatory factor analyses (CFA) would identify the theoretically derived higher-order factors as distinct (Research Question 1). Because previous studies (e.g., Arnold et al., 2000; Boudrias et al., 2009; Konczak et al., 2000) have demonstrated that aspects of empowering leader behaviors can be highly correlated, it was reasonable to expect that several of the identified behavior categories could have overlapping characteristics. This coherence also has been found regarding other

multidimensional leadership approaches such as transformational leadership (Avolio, Bass, & Jung, 1999). Thus, we also aimed to investigate whether CFA would identify the eight theoretically derived first-order factors as distinct (Research Question 2). However, since the present perspective on EL was new we additionally had to be open for exploratory efforts in cases where our proposed solutions were not ideal.

Study 1

The purpose of Study 1 was to investigate the psychometric properties of the theoretically proposed EL model described above (Research Questions 1 and 2), and if any ambiguities were detected, seek to refine the model. We also aimed to provide initial evidence for the factorial and concurrent validity of the model (Messick, 1980). The concurrent analyses were performed with subordinates' job-satisfaction, work effort, self-leadership and performance as outcome variables. In accordance with our theoretical expectation was self-leadership additionally investigated as a mediating variable between EL and performance.

A number of studies have indicated a positive relationship between job satisfaction, defined by Locke (1976) as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience" (p. 1300), and EL, including Dewettinck and van Ameijde (2011), Konczak et al. (2000), and Vecchio et al. (2010). This leads to the first hypothesis:

Hypothesis 1: Empowering leadership is positively related to subordinates' job satisfaction.

We also proposed that EL should be related to work effort, which has been defined as "the force, energy, or activity by which work is accomplished" (Brown & Peterson, 1994, p. 71). To our knowledge, work effort has not yet been investigated within the domain of EL. However, Ahearne, Mathieu, & Rapp (2005) demonstrated that EL enhances employees' belief in their personal self-efficacy, and according to Bandura (1997), self-efficacy plays a

significant role in task-oriented behaviors by influencing an individual's choice, effort, and persistence. In line with this, we postulate the following:

Hypothesis 2: Empowering leadership is positively related to subordinates' work effort.

One main purpose of EL is the facilitation of subordinates' self-leadership (e.g., Manz & Sims, 1989), which was emphasized in our theoretical discussion of EL earlier in this paper. The relationship between EL and self-leadership has previously been supported in studies by Tekleab et al. (2008) and Yun et al. (2006). This leads to our third hypothesis:

Hypothesis 3: Empowering leadership is positively related to subordinates' self-leadership.

EL has also shown a positive relationship with subordinates' performance (Vecchio et al., 2010). In accordance with Christen, Iyer, and Soberman (2006), here we distinguish between work effort (cf. Hypothesis 2) and job performance in that "effort is an input to work, and job performance is an output from this effort" (p. 139). In this regard it is possible to have high effort and low output and vice versa. This leads to the final hypothesis:

Hypothesis 4: Empowering leadership is positively related to subordinates' performance.

Self-leadership for its part is proposed to affect job performance (e.g., Neck & Houghton, 2006), which previously has been supported empirically (e.g., Frayne & Geringer, 2000). Together with Hypotheses 3 and 4 this forms a model in which EL affected subordinates' job performance through their self-leadership. This model may take three different functional forms, including an indirect effect model, a full mediating model, and a partial mediating model (Mathieu & Taylor, 2006). We do not propose any hypothesis here, but investigate this issue more closely as our Research Question 3.

Method

Participants and procedure. The participants were 87 leaders, who worked in three different Norwegian municipalities, and 412 of their subordinates. The leaders participated in a leadership development program, and data used in the present study was collected through

three separate online surveys before the program started. The leaders represented different hierarchical levels in the organizations and had various areas of responsibility, including education and children, health and care, administration and staff, technical tasks, and cultural tasks. The first survey (i.e., subordinate sample) was sent to subordinates (including leaders who had a superior), who were asked to rate their superior relative to EL as well as to provide ratings of their own job satisfaction and work effort. The second survey (i.e., leader sample) was sent to the leaders, who were asked to rate their self-leadership, while the third survey (i.e., superior sample) was sent to eight superiors, who provided ratings of their subordinate leader's job performance. After two reminders, 81 leaders (93 percent) and 337 subordinates (81 percent) had answered the surveys, while 77 leaders (89 percent) had been rated by their superior. Among the leaders, 60 percent were female, and 75 percent were aged 45 or older; 46 percent of the leaders worked in municipality one, 36 percent in municipality two, and 18 percent in municipality three. As for educational level, 2 percent had high school, 30 percent had three years or less at college/university and 68 percent had four or more years at college/university. Among the subordinates, 70 percent were female, and 58 percent were aged 45 or older; 4 percent had elementary schooling, 27 percent had high school, 27 percent had three years or less at college/university and 42 percent had four or more years at college/university.

The public sector, here represented by three municipality organizations, was considered to be representative of the type of sector in which EL is more individualized than team-based. By this we mean that leadership activities to a greater extent occurs directly between the individual subordinate and his/her leader within a more traditional hierarchical context. This pattern was also noted by Vecchio et al. (2010), who pointed out that "employees in governmental positions are not likely to be offered opportunities to be a part of a team culture because of inherent bureaucratic controls" (p. 531). Additionally, the

municipality sector in Norway has been through a change during the last decade, involving the introduction of new management systems characterized by delegation and employee responsibility. In this context empowerment is an actual organizational concept.

Measures. All measures were rated on a seven-point Likert-type scale (1 = *never* to 7 = *always*).

Empowering leadership. Items for the study were obtained from an instrument under development (Martinsen, 2005, 2009) measuring superleadership and related aspects of leadership, as well as self-leadership. The included scales were independently designed, but clearly based on the definitions and recommendations outlined in the literature on superleadership and self-leadership (e.g., Manz, 1986; Manz & Sims, 1989, 2001), and other relevant sources (e.g., Yukl, 2002). Some additional scales were included to describe other empowering and more conventional aspects of leadership, such as supporting, inspirational, and strategic orientation. Items were originally generated based on group discussions with students and colleagues and tested for reliability and correlation. Recent studies have shown promising validity for aspects of the inventory (Martinsen, 2009; Sandvik & Martinsen, 2013). For the present study, a subset of scales and items were chosen from the leadership part of the instrument (i.e., not self-leadership) that was directly related to our conceptualization of EL. The selected eight EL behaviors were measured with 24 items (see Table 1), with each behavior category operationalized based on three-item scales with Cronbach's alphas as follows: Delegation ($\alpha = .78$), coordination and information sharing ($\alpha = .82$), encourage initiative ($\alpha = .84$), encourage goal focus ($\alpha = .85$), efficacy support ($\alpha = .81$), inspiring ($\alpha = .82$), modeling ($\alpha = .89$), and guidance ($\alpha = .85$).

Job satisfaction. Three items were adapted from the Michigan Organizational Assessment Questionnaire (Cammann, Fichman, Jenkins, & Klesh, 1983), and one item was added to secure reliability. The items were: (1) "All in all, I am satisfied with my job"; (2) "In

general, I don't like my job" (reverse coded); (3) "In general, I like working here"; and (4) "All in all, I feel well on the job." Alpha for the scale was .90.

Work effort. Four items inspired by the "Extra Effort" subscale from the Multifactor Leadership Questionnaire (MLQ) (Bass & Avolio, 2000) were used. However, we ensured that effort was measured in a way that does not include any contingency upon the leader. The items were: (1) "I invest a lot of effort in my job"; (2) "I give it everything in my job"; (3) "I make a strong effort to reach my goals"; and (4) "I use a great deal of energy at work." Alpha for the scale was .83.

Self-leadership. Self-leadership was assessed using a research version of the self-leadership part of the instrument described above regarding the EL measure. Beyond the classic definitions of self-leadership and its facets (e.g., Manz, 1986; Neck & Houghton, 2006), a few scales were added by Martinsen (2009). The reason was that self-leadership might pertain not only to individual and self-oriented thoughts and behaviors, but also to the need to coordinate efforts and cooperate with others. Additionally, Martinsen argued that self-leadership might include a focus on new ideas and a willingness to acquire the necessary competence to master task requirements.

The full version of the present self-leadership measure includes 13 underlying facets and 52 items. In the original study (Martinsen, 2009), based on a sample of 612 employees from diverse organizations, these facets were well represented by two factors labeled *achievement orientation* and *self-regulation*. The self-leadership facets that loaded on achievement orientation were behavioral self-observation, self-goal setting, focus on new ideas, competence development, cooperation, coordination, and positive inner dialogue, whereas the facets that loaded on the self-regulation factor were self-reward, practicing, priority to interesting tasks, priority to facilitative working conditions, cognitive self-observation, and visualization of outcomes. The abbreviated research version, comprised of

20 items, was developed to be used in settings where practical limitations would restrict the use of the full version. Items for the research version were selected that had maximum loadings on the primary factor and minimum loadings on the secondary factor. This procedure was followed to optimize the representativeness of the two original factors in the research version. The correlation between the corresponding factors in the full version and the abbreviated research version were .96 and .90 for achievement orientation and self-regulation, respectively. Consequently, we based our self-leadership measure on the 20 item research version reflecting achievement orientation (12 items; $\alpha = .82$; sample item: "I work towards specific goals that I set for myself") and self-regulation (8 items; $\alpha = .82$; sample item: "I give priority to tasks that give me a clear experience of self-determination"). CFA on a one-factor model gave a significantly poorer model fit than the two-factor model [χ^2_{diff} (1) = 102.56, $p < .001$], indicating support for the factor validity of the self-leadership measure. The standardized factor loadings were all significant on their respective factors (range .32 to .86, $p < .01$), and the intercorrelation between the two factors was .48 ($p < .01$).

Job performance. Job performance was assessed by four items ($\alpha = .88$) developed for the current leadership program. The items were: (1) "My subordinate leader reaches his/her goals"; (2) "My subordinate leader achieves good results"; (3) "My subordinate leader contributes to the organization's value creation"; and (4) "My subordinate leader is valuable to the department's overall performance."

Control variables. Based on previous research (e.g., Kuvaas & Dysvik, 2011; Wang & Lee, 2009), we controlled for gender and age of the respondents. Gender was coded 0 for "male" and 1 for "female." Age was coded 1 for <25 years, 2 for 25–34, 3 for 35–44, 4 for 45–54, and 5 for ≥55. We also controlled for organizational affiliation by including two dummy variables, with organization 3 chosen as the reference group.

Data analysis. Analysis of the subordinate sample was conducted in six steps: (a) analysis of missing data, outliers and normality, (b) CFA of the theoretically derived EL measurement model, (c) splitting the original sample randomly into two halves, (d) EFA using principal axis factoring with oblique rotation on the first subsample, (e) cross-validating the EFA solution in CFA using maximum likelihood (ML) estimation on the second subsample, and (f) testing the concurrent validity of the new measure relative to job satisfaction and work effort using a multilevel modeling approach. In addition the concurrent validity was investigated further relative to self-leadership and performance using multilevel modeling on a subset of the leader sample.

EFA was conducted based on a matrix of polychoric correlations (Bollen & Barb, 1981) to handle the restriction of limited number of categories in the response scales. To cope with the slight multivariate non-normality of data and assess the stability of sample results, CFA with bootstrapping techniques was used (Efron & Tibshirani, 1993). Within the CFA framework, multigroup analysis (Byrne, Shavelson, & Muthén, 1989) was performed to assess additional evidence of construct validity of the measure across random subsamples, gender, and organizations. To overcome the chi-square test's sensitivity to sample size, the overall goodness-of-fit of the CFA models was evaluated by reporting multiple fit indices. In line with Kline (2005), we reported (a) the chi-square test statistics with corresponding degrees of freedom and level of significance; (b) the root mean square error of approximation (RMSEA; Steiger & Lind, 1980) with its corresponding 90 percent CI, for which values <.05 indicates close fit, .05–.08 fair fit, .08–.10 mediocre fit, and >.10 poor fit (Browne & Cudeck, 1993); (c) the standardized root mean square residual (SRMR; Bentler, 1995), for which values ≤.08 indicates good fit (Hu & Bentler, 1999); and (d) the comparative fit index (CFI; Bentler, 1990), for which values >.90 are generally considered to be indicative of acceptable fit (Bentler & Bonett, 1980). CFAs were performed using AMOS version 16.0 (Arbuckle,

2007), whereas polychoric correlations were estimated in PRELIS version 2.8 (Jöreskog & Sörbom, 1996). All other analyses were carried out using SPSS version 16.0 (SPSS Inc., 2007).

Results and Discussion

Analysis of missing data, outliers, and normality for the subordinate sample. An initial data screening with SPSS MVA found a total of 2.9 percent missing data points in the sample, which were replaced using the EM algorithm (Dempster, Laird, & Rubin, 1977). Univariate skewness and kurtosis values were all well within the cutoff values of ±1.0 recommended by Muthén and Kaplan (1985). By removing 17 outliers that exceeded a critical value of $\chi^2 = 51.18$, $df = 24$, $p < .001$ the normalized Mardia's kurtosis coefficient (Mardia, 1970) was reduced from 35.25 to 15.65.

Analysis of the theoretically derived empowering leadership model. Means, standard deviations, and coefficient alphas were computed on the eight dimensions using the total sample ($N = 317$). The mean values ranged from 3.57 to 5.29, which indicates that subordinates generally observed differences in the extent to which leaders engaged in the eight empowering behaviors. Standard deviations ranged from 0.97 to 1.30, indicating moderate variability in the ratings, whereas coefficient alphas ranged from .78 to .85. CFA on our theoretically derived three higher-order correlated factors model (i.e., power sharing, motivation support, and development support) gave an acceptable-to-mediocre fit [$\chi^2(241, N = 317) = 881.57$, $p < .001$; RMSEA = .092 (CI_{90} = .085–.098); SRMR = .066; CFI = .89]. However, examining of the bootstrapped 95 percent CI of the latent correlation between power sharing and motivation support revealed an interval that included unity (r = 0.95 – 1.04), which indicated that the actual pair of factors was not distinct and evidence of discriminant validity was not achieved (Anderson & Gerbing, 1988). Accordingly, this gave a negative answer to Research Question 1. The substantial high correlation between power

sharing and motivational support may alternatively be theoretically meaningful because to be provided self-determination may in itself be a source of intrinsic motivation (Deci & Ryan, 1985; Thomas & Velthouse, 1990). We therefore decided to combine these two factors into one factor and label it *autonomy support*, and next assess the fit of an alternative two second-order correlated factors model. The results indicated that the fit was somewhat worse than for the three factors model [$\chi^2(243, N = 317) = 904.11$, $p < .001$; RMSEA = .093 ($CI_{.90}$ = .086–.099); SRMR = .066; CFI = .89], but still at an acceptable level. Discriminant validity between development support and the new factor autonomy support were achieved because the latent correlation did not include unity (r = .70 – .82), indicating support for these two factors as distinct but related aspects of EL.

We next performed CFA on the 24-item, eight first-order correlated factors model, which gave an acceptable-to-mediocre fit [$\chi^2(224, N = 317) = 730.52$, $p < .001$; RMSEA = .085 ($CI_{.90}$ = .078–.091); SRMR = .054; CFI = .91]. However, the factor intercorrelations ranged from .53 to .97 (average .78), and 8 of the 28 correlations exceeded .90. The high factor correlations indicated questionable discriminant validity among several constructs. This condition was assessed further by using bootstrapping to calculate CIs around the correlations between pairs of factors. Examination of both the 95 percent and 99 percent CIs revealed three and six intervals that included unity, respectively, and thus indicated that several dimensions overlapped significantly with each other. This represented a negative answer to Research Question 2. All 24 items had significant standardized loadings on their respective latent first-order factors (range .69 – .89, average .79, $p < .001$). However, an examination of modification indices provided by AMOS revealed that 9 items had ambiguous cross-loadings on other factors than they were intended. Combined with high intercorrelations among the first-order factors this called for refining and improvement of the psychometric properties of the 24-item, eight factor measurement model by removing

ambiguous items and investigating whether the two-factor structure (i.e., autonomy support and development support) also could be identified and validated at the item-level of analysis. This was done using a combined EFA and CFA approach.

Refinement and reanalysis of the measurement model of empowering leadership.

Calibration and cross-validation samples. Prior to performing EFA and CFA, we randomly split the original sample into two groups, creating a calibration sample for EFA (n = 158) and a cross-validation sample for CFA (n = 159). Table 1 presents the full wording of the 24 items with the mean and standard deviation for each of the subsamples.

Insert Table 1 about here

Independent t-tests were performed to test the mean differences between the two samples. Using a significance level of $p \leq .01$, no significant differences were found between any demographic variables (i.e., gender, age, education, organization affiliation, and job type). Likewise, no significant differences were indicated between the 24 items. Factorability of the EFA correlation matrix was assessed using Bartlett's (1950) test of sphericity and the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO; Kaiser, 1974). Bartlett's test yielded a significant result [$\chi^2(276, n = 158) = 3527.82, p < .001$], and the KMO test revealed a value of .92, well above the suggested value of .60 (Tabachnick & Fidell, 2007). In sum, both tests indicated that data had an adequate correlation structure destined for factor analysis. The correlation matrix for both subsamples is available by request addressed to the first author.

Exploratory factor analysis. EFA was performed on the matrix of polychoric correlations from the calibration subsample. Because of the supposed multi-faceted nature of EL, principal axis factoring was used as an extraction technique (Conway & Huffcutt, 2003).

Promax rotation (kappa = 4) was chosen because factors were expected to correlate. Various methods were combined to determine the number of factors to retain, including (a) the eigenvalue-greater-than-one rule (Kaiser, 1960), (b) the scree test (Cattell, 1966), (c) parallel analysis (Horn, 1965), (d) approximate simple structure (McDonald, 1985), and (e) interpretability of obtained factors (Gorsuch, 1983). Together these methods clearly suggested two factors as the most preferred solution. Table 2 presents the initial factor pattern and factor structure coefficients, along with communalities (h^2), eigenvalues, and variance accounted for by each factor.

Insert Table 2 about here

Inspection of the pattern matrix revealed a substantial amount of factor loadings in the range .51 to .97, and the cutoff size was set to retain an item to .50. Complex items, with a difference < .30 between their absolute values of loadings on the two factors, were also deleted. Based on these criteria, items 13, 15, 4, 8, 17, and 16 were deleted (in that order), and the remaining items were re-analyzed, since deleting a single item could affect the total loading structure. As Table 2 shows, 18 items were retained. The first factor consisted of 12 items that reflect the degree to which leaders provide *autonomy support* to their subordinates by delegating, coordinating and informing, inspiring, giving efficacy support, and encouraging initiative and goal focus. The second factor consisted of six items that measured the degree to which leaders provide *development support* through modeling and guidance. Accordingly, EFA could identify the same two latent constructs in the underlying item structure as indicated by the higher-order CFA of the theoretical derived EL model above. The factors were significantly correlated, $r = .58$, $p < .001$. Coefficient alpha was estimated at .92 for both of the subscales, which indicated high levels of internal consistency. Alpha was

not increased by deleting any of the items. Because of the high intercorrelation among first-order factors within both autonomy support and development support, and because the refining process gave only one remaining item for two of the first-order factors, we decided to continue our analysis on a 18-items, two first-order correlated factors model of EL.

Confirmatory factor analysis. Several CFAs were conducted on raw scores from the cross validation sample (see Table 3). For comparison purposes, a one-factor model was tested in which all 18 items were constrained to load on one latent factor. This model revealed poor model fit, which excluded the possibility of the 18 items measuring a unitary construct. We then cross-validated the hypothesized two-factor EFA model, in which each item was constrained to load on its respective latent factor. The hypothesized model provided a reasonable-to-mediocre fit to the data, with fit indices RMSEA = .086, SRMR = .060, and CFI = .93, respectively. Modification indices (MI) provided by AMOS suggested that model fit could be improved by allowing two pairs of measurement errors to correlate. This implied that the unique variances of the associated items overlapped; that is, they measured something in common beyond the specified latent factor. To prevent the risk of capitalizing on chance (MacCallum, Roznowski, & Necowitz, 1992), both substantive and statistical conditions are recommended to guide the inclusion of correlated residuals (Byrne, 1994). In our case, error correlations were suggested between items 2 and 3 (MI = 11.38) in the autonomy support subscale, and between items 22 and 23 (MI = 20.88) in the development support subscale. Allowing these two pairs of error terms to correlate appeared to be theoretically acceptable, since the respective pairs of items were originally based on two construct operationalizations (i.e., delegating and guidance, respectively). Therefore, the error correlations were likely to descend from content overlap, which is not uncommon in social psychological research (Byrne, 1998). Adding these correlations one at a time produced significant improved model fit compared with the baseline two-factor model [χ^2_{diff} (2, *n* =

159) = 34.67, $p < .001$], with model fit indices RMSEA = .077, SRMR = .062, and CFI = .94. The estimated error correlation coefficients were both significant: e2–e3 ($r = .28$, $p < .01$), and e22–e23 ($r = .40$, $p < .001$). Analysis of the EFA subsample replicated the two error correlations: e2–e3 (MI = 26.25, $r = .30$, $p < .001$), and e22–e23 (MI = 29.22, $r = .32$, $p < .001$), which provided additional support for their relevance.

Insert Table 3 about here

After this modification, the model statistics revealed no other pertinent areas of localized strain. Because post-hoc model modifications were performed, the bivariate correlation coefficient was calculated between the hypothesized model parameter estimates and the parameter estimates from the modified model, $r = .99$, $p < .001$. This indicated that the parameter estimates were highly related to each other; that is, despite the modifications, the model had not changed substantially. Examination of the standardized factor loadings revealed that all 18 items had significant loadings (range .58 to .89, $p < .001$) on their respective constructs (see Table 4). The squared standardized factor loadings ranged from .34 to .79, which indicated acceptable reliability of the indicators. Cronbach's coefficient alpha was estimated at .93 for both scales and was not increased by deleting any of the items. The intercorrelation between the two factors was .72, $p < .001$, 95% CIs [.61, .80]. Since the bias-corrected bootstrap CI did not include unity, evidence for discriminant validity was obtained (Anderson & Gerbing, 1988). Figure 1 presents the final CFA model.

Insert Figure 1 about here

Insert Table 4 about here

In order to assess the robustness and stability of the original ML estimates, bootstrapped estimates were calculated in AMOS (Fan, 2003). As recommended by Nevitt and Hancock (2001), the number of bootstrapped samples was set to 2000. The average bootstrap-based estimates were all similar or close to original normal theory-based ML-estimates for factor loadings (deviations in the range .000–.002, average .001), the factor correlation (deviation .004), and the two error correlations (.001 and .006, respectively). No estimates of the 95 percent bias-corrected CIs included zero, and the observed distribution of chi-square values obtained for the bootstrap samples supported the assumption of underlying normality. Overall, the bootstrap findings supported the robustness of the ML estimates and the stability of the estimated parameters across possible alternative subsamples of the present data set.

Three sets of multigroup analysis were performed using AMOS (Byrne, 2004) to determine whether the two-factor model of EL was psychometrically equivalent across groups (see Table 5). Firstly, the model was compared between two randomly divided subsamples of the original sample (n = 158 and 159, respectively), which was different from the EFA and CFA subsamples. Secondly, data from males (n = 96) and females (n = 221) was compared to assess the possibility of the measurement structure varying by gender. Thirdly, the model was compared between data from the three municipalities (n= 61, 115, and 141, respectively) to test for possible differences in organizational affiliation. Each set of analysis followed the recommended sequence of models summarized by Vandenberg and Lance (2000). Firstly, a baseline unconstrained model was established (configural model), in which all parameters were freely estimated across groups within the pattern of factor loadings. The factor loadings were then constrained to test their similarity in the different groups (metric

invariance), followed by testing the more restrictive requirement with similarity in factor variances (invariant factor variances). Finally, similarity in the covariance across groups was tested (invariant factor covariance). Differences between nested multigroup models were evaluated using the standard chi-square difference test and changes in CFI estimates. Following Cheung and Rensvold (2002), a $\Delta CFI \leq -.01$ was taken as evidence that the null hypothesis of invariance should not be rejected. To adjust for downward bias in RMSEA values estimated in multigroup analyses, the RMSEA point estimate and 90 percent CIs were multiplied by $\sqrt{g}$, where g is the number of groups (Steiger, 1998). The results in Table 5 indicate acceptable fit and no significant differences between groups for all models tested, apart from the test of equivalence in the covariance across gender. Overall, 99 percent of the parameters tested were equivalent across random samples, gender and organizations, suggesting that the measurement model of EL was stable and replicable. Hence, the findings supported the factor validity of the scale, since the EFA revealed a theoretical meaningful and parsimonious two-factor structure of EL that could be replicated in the CFAs. The new instrument was called the Empowering Leadership Scale (ELS).

Insert Table 5 about here

Analysis of concurrent validity of ELS.

The relationship of ELS with subordinates' job satisfaction and work effort. In the investigation of these relationships we used the subordinate sample. First, we assessed the discriminant validity between the study variables using CFA, where the variables' items served as indicators for the latent variables. We constrained the estimated correlation between pairs of latent variables to unity, after which a chi-square difference test was performed (Jöreskog, 1971). The test was carried out for one pair of constructs at a time. "A

significantly lower chi square value for the model in which the trait correlation(s) are not constrained to unity would indicate that the traits are not perfectly correlated and that discriminant validity is achieved" (Bagozzi & Phillips, 1982, p. 476). Consistent with this procedure, the chi-square difference test revealed significant values at the $p < .001$ level for all comparisons, indicating that the variables under study demonstrated adequate discrimination (results are available by request addressed to the first author). Single composite scores were then calculated for the two EL subscales and the hypothesized outcome variables by averaging the items that constituted each scale. Descriptive statistics, correlations and reliabilities are provided in Table 6.

Insert Table 6 about here

Due to the hierarchical nature of data (subordinates nested within leaders), the intra-class correlation coefficient (ICC) was calculated by conducting a two-level intercept-only model. The results indicated that approximately 20 percent (Wald Z = 2.89, $p < .01$, one-tailed) of the variability in work effort and 15 percent (Wald Z = 2.34, $p < .01$, one-tailed) in job satisfaction were associated with differences between leaders, suggesting that multilevel modeling would be an appropriate data analytic choice to avoid underestimation of standard errors and thus enhanced probability of doing Type-I errors. The use of multilevel modeling did not affect our assumption of studying EL at an individual level of analysis because both EL and the two outcome variables were treated as Level 1 (i.e., subordinate level) variables. Grand mean centering was used for the independent variables because it helps reduce the covariance between intercepts and slopes, thereby reducing potential problems associated with multicollinearity (Kreft, de Leeuw, & Aiken, 1995). The control variables were included in all analyses.

Hypotheses 1 and 2 postulated that EL would be positively related to job satisfaction and work effort, respectively. Table 7 summarizes the results from the multilevel analysis, which supported Hypotheses 1 and 2 by revealing a positive and significant slope (γ_{50}) for both EL subscales in prediction of job satisfaction and work effort, respectively. A positive and significant quadratic effect (γ_{60}) was also found, apart from the autonomy-support job satisfaction relationship. Apart from the autonomy-support work effort relationship, gender was found to be a significant predictor (females scored higher than men on the outcome variable). Moreover, apart from the development-support job satisfaction relationship, there was significant variability in intercepts (u_{0j}) and a negative covariation between the variability in intercepts and slopes (u_{0j} u_{5j}) across leaders. The latter result indicated that, across leaders, the value of the slope decreased as the intercept for the relationship between EL and subordinates outcome increased. No significant variability in slopes (u_{5j}) between EL and outcome variables was found across leaders. Together, the analysis results supported the two proposed Hypotheses, and hence, gave preliminary evidence for the concurrent validity of ELS.

Insert Table 7 about here

Because cross-sectional, self-report surveys may be affected by common method variance (CMV) bias, Harman's single-factor test (Podsakoff & Organ, 1986) was conducted using EFA on the 26 items that constituted the four composite scales. The first component accounted for 41 percent of the total variance, indicating that a single common factor did not account for the majority of the variance. Additionally, our finding of significant quadratic effects of ELS on outcome variables can be interpreted as meaningful, because such effects in an OLS regression cannot be artifacts of CMV (Siemsen, Roth, & Oliveira, 2010).

The relationship of ELS with subordinates' self-leadership and job performance. Within the leader sample we were able to identify a subset of 31 subordinate leaders with complete data on the study variables. Eight superiors had rated their subordinate leader's job performance, whereas the subordinate leaders had rated their superior's EL as well as their own self-leadership. The discriminant validity between the study variables was assessed using the same CFA procedure as described for the concurrent analyses above. However, to increase the ratio of sample size to estimated parameters in the CFAs (Bentler & Chou, 1987), we used three parcels as indicators for both EL (i.e., two for the autonomy support subscale and one for the development support subscale) and self-leadership (i.e., two for the achievement orientation subscale and one for the self-regulation subscale). All chi-square difference tests revealed significant values at the $p < .001$ level, indicating that the variables under study demonstrated adequate discrimination (results are available by request addressed to the first author). Given the relatively high correlation between the two ELS subscales ($r = .58$, $p < .01$) and between the two self-leadership subscales ($r = .54$, $p < .01$), single composite scores were calculated for EL and self-leadership as well as for job performance. Descriptive statistics, correlations and reliabilities are provided in Table 6.

A substantial ICC value indicated that 70 percent (Wald $Z = 1.79$, $p < .05$, one-tailed) of the variability in job performance ratings could be attributed to superiors, which called for multilevel analyses to avoid underestimation of standard errors. Because of the small sample size and restrictions in obtaining convergence in the estimation procedure, we were only able to model random intercepts among superiors, and not random slopes. Grand mean centering was used for the independent variables, and control variables were included in the analyses. Support for Hypothesis 3 was obtained since the results suggested a positive and significant slope ($\gamma = .29$, $p < .01$) for EL in prediction of self-leadership. We found no significant quadratic effect of EL, and none of the control variables were significantly related. Support

for Hypothesis 4 was also obtained thorough a significant slope ($\gamma = .18$, $p < .05$) for EL in prediction of job performance, with organizational affiliation as a significant control variable ($p < .05$). Moreover, self-leadership was significant in prediction of job performance ($\gamma = .41$, $p < .01$), and organizational affiliation was also significant ($p < .05$). With both EL and self-leadership as predictors of job performance, EL lost its significance ($\gamma = .01$, *ns*), whereas self-leadership was still significant ($\gamma = .40$, $p < .01$). Organizational affiliation was also still significant ($p < .05$) in the latter analysis. Together, these results indicated that self-leadership fully mediated the relationship between EL and job performance (cf. Research Question 3). Additionally, we performed the empirical-M test (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002) to assess the CI for the product term $ab = .12$. The 95 percent CIs were calculated to .02 and .25, respectively, which indicated that the mediating effect was significant.

Although data for EL and self-leadership were gathered using two separate surveys, CMV may have biased the correlation between the variables because of same source problematic. To investigate this issue we conducted supplementary analyses and used the single-common-method-factor approach recommended by Podsakoff, MacKenzie, Lee, and Podsakoff (2003). The model in which the method factor predicted the indicators of EL and self-leadership directly did not provide a better fit to the data compared with the model with no method factor added, [χ^2_{diff} (6, $N = 31$) = 4.40, *ns*]. The path coefficient between EL and self-leadership was also significant and approximately the same in the two models ($\gamma = .33$ vs. $\gamma = .32$). These results indicated that CMV may not have biased the correlation between EL and self-leadership in the present study.

Study 2

The results of Study 1 indicated that two broad factors constituted central empowering leader behaviors; that is, autonomy support and development support. The investigation of

ELS was mainly based on an approach where the original sample was divided into a calibration and a cross-validation sample. However, this approach represented a limitation since the two samples were not truly independent. Therefore, the purpose of Study 2 was to cross-validate and test the generalizability of the two-factor model with data gathered from a new organization representing another work sector. We also aimed to investigate further the concurrent validity of ELS by assessing its relationship with psychological empowerment and creativity, and additionally, the properties of psychological empowerment as a mediator between EL and creativity. A number of previous studies have shown a positive relationship between EL and psychological empowerment, including Boudrias et al. (2009) and Raub and Robert (2010), which led us to put forward the first hypothesis:

Hypothesis 1: Empowering leadership is positively related to subordinates' psychological empowerment.

Zhang and Bartol (2010) found a positive relationship between EL and creativity, defined by DiLiello and Houghton (2006) "as the formation of novel, appropriate and useful ideas by individuals or small groups" (p. 321). This leads to the second hypothesis:

Hypothesis 2: Empowering leadership is positively related to subordinates' creativity.

Zhang and Bartol (2010) also found psychological empowerment to mediate the relationship of EL on creativity. This is in line with our theoretical emphasis of psychological empowerment as a mediator variable between EL and subordinate outcomes. We do not propose any hypothesis here, but investigates this mediation issue more closely as our Research Question 1.

Method

Participants and procedure. A survey was sent by e-mail to 1,475 employees working in a large food company in Norway. After two reminders, 218 participants had answered, representing a response rate of 15 percent. The respondents held a variety of job

positions, such as economy and finance, marketing, communication, HR, and production. The sample consisted of 37 percent females, and the age of the participants ranged from 18 to 67 years with an average age of 43. Given the relatively low response rate, we checked the potential for non-response bias by comparing characteristics and responses of early and late respondents. Armstrong and Overton (1977) argued that late respondents are representative of non-respondents. The results of *t*-tests for gender ($p = .64$) and age ($p = .11$) of the respondents, as well as the composite scores for ELS ($p = .43$), revealed no significant differences between late and early respondents.

Measures. The scales for EL, psychological empowerment, and creativity were administrated as part of a larger leadership survey in the organization. We also added a marker variable (i.e., general community interest) to assess the effects of CMV in the data set (Williams, Edwards, & Vandenberg, 2003). We selected the marker variable on the basis that it was supposed to be theoretically unrelated to the substantive variables of interest. All measures were rated on a seven-point Likert-type scale (1 = *never* to 7 = *always*).

Empowering leadership. EL was measured with ELS developed in Study 1. Alpha for the autonomy support subscale was .94 and for the development support subscale .91.

Psychological empowerment. Psychological empowerment was assessed with Spreitzer's (1995) 12-item scale, which comprises three items each for the four subdimensions: meaning ($\alpha = .87$; sample item: "The work I do is very important to me"), competence ($\alpha = .81$; sample item: "I am confident about my ability to do my job"), self-determination ($\alpha = .84$; sample item: "I have significant autonomy in determining how I do my job"), and impact ($\alpha = .82$; sample item: "My impact on what happens in my department is large").

Creativity. Creativity was assessed by thirteen items (α = .92) obtained from George and Zhou (2001). Example items are: "I am a good source of creative ideas" and "I come up with creative solutions to problems."

General community interest. The marker variable was assessed by three items (α = .93) developed for the current study. The items were: (1) "I am a community-interested person"; (2) "I follow up on what is happening in the community"; and (3) "I keep updated on what is happening in the community."

Control variables. We controlled for gender and age of the participants. Gender was coded 0 for 'male' and 1 for 'female'. Age was coded 1 for <25 years, 2 for 25–34, 3 for 35–44, 4 for 45–54, and 5 for ≥55.

Data analysis. The data was first screened for multivariate outliers followed by calculation of descriptive statistics and reliabilities for the study variables (see Table 6). Next, we cross-validated ELS in the CFAs using ML estimation in AMOS. The overall goodness-of-fit of the CFAs was evaluated with the same fit indices as in Study 1. Finally, we investigated the relationship of ELS with psychological empowerment and creativity as well as the mediating effect of psychological empowerment between ELS and creativity using structural equation modeling.

Results and Discussion

Cross-validation of ELS. To improve the multivariate normality of the data, Mahalanobis distance scores were calculated for all cases. Three multivariate outliers were removed that exceeded the critical value of $\chi^2 = 42.31$, $df = 18$, $p < .001$, leaving 215 cases for further analysis. Descriptive statistics and reliabilities for ELS subscales are shown in Table 4. CFA on the two-factor model indicated a reasonable-to-mediocre fit to the data (see Table 3). Compared with Study 1, the results were less satisfactory on the fit indices RMSEA = .095 and CFI = .91, and slightly better on SRMR = .054. However, modification indices

provided by AMOS suggested that model fit could be improved by allowing the same two pairs of measurement errors to correlate as suggested in Study 1; that is, between items 2 and 3, MI = 7.15, $r = .19$, $p < .01$, and between items 22 and 23, MI = 69.26, $r = .63$, $p < .001$. Adding these correlations gave a significant improvement in model fit compared with the baseline model [χ^2_{diff} (2, $N = 215$) = 94.41, $p < .001$]. The fit indices RMSEA = .072 and CFI = .94 were also substantially improved, whereas SRMR = .061 was somewhat worse. Examination of the standardized factor loadings revealed that all items had significant loadings (range .61 to .91, $p < .001$) on their respective constructs, and thus they were comparable with those in Study 1 (see Table 4). The intercorrelation between the two factors was .78, $p < .001$, which was somewhat higher than in Study 1 ($r = .72$). The bias-corrected bootstrap CI around the correlation did not include unity, 95% CIs [.70, .85], and hence, evidence for discriminant validity was achieved (Anderson & Gerbing, 1988). Taken together, the results demonstrated that the structure of ELS was robust and replicable in an independent sample.

The relationship of ELS with subordinates' psychological empowerment and creativity. To increase the ratio of sample size to estimated parameters, we used three parcels as indicators for EL (i.e., two randomly created parcels for the autonomy support subscale and one for the development support subscale) and three randomly created parcels for creativity, whereas psychological empowerment was based on its four subdimensions serving as indicators. For the marker variable we used the three items as indicators. Discriminant validity between the variables was assessed using the same CFA procedure as described for the concurrent analyses in Study 1. All chi-square difference tests revealed significant values at the $p < .001$ level, indicating that the variables under study demonstrated adequate discrimination (results are available by request addressed to the first author).

The structural "marker" model with paths from the marker variable to all indicators of the three substantive variables provided better fit to the data [$\chi^2(77, N = 215) = 175.47$, $p < .001$; RMSEA = .077 (CI_{90} = .062–.092); SRMR = .087; CFI = .95] than a baseline model where the paths from the marker variable were constrained to zero [$\chi^2(87, N = 215) = 230.28$, $p < .001$; RMSEA = .088 (CI_{90} = .074–.102); SRMR = .158; CFI = .93]. A chi-square difference test revealed that this improvement in fit was significant [χ^2_{diff} (10) = 54.81, $p < .001$], which indicated that CMV was present in the data. However, a third model, where the structural path coefficient between EL and respectively psychological empowerment and creativity were constrained to the unstandardized value in the baseline model, did not show a significantly worse fit than the "marker" model [χ^2_{diff} (2) = 2.65, *ns*], which indicated that the path coefficient was not biased although CMV was present. Neither age nor gender were significant as predictors of psychological empowerment, whereas age was significant in the prediction of creativity (γ = -.14, $p < .05$). The "marker" model, which controlled for CMV, supported Hypotheses 1 and 2 since the standardized path coefficient between EL and psychological empowerment was estimated to .76 ($p < .001$) and between EL and creativity to .42 ($p < .001$).

We were unable to obtain meaningful results using SEM in the estimation of psychological empowerment as a mediator between EL and creativity. The model collapsed and produced standardized regression coefficients greater than 1. We therefore used a SPSS macro (i.e., PROCESS) provided by Hayes (2013) to investigate the mediation model and obtain bootstrapped CIs for the indirect effect. The estimation indicated that the average indirect linear effect of EL on creativity (via psychological empowerment) was .30, SE = .04, p < .001, 95% CIs [.24, .38], whereas the average total linear effect was .34, SE = .05, p < .001. Accordingly, 88 percent of the association between EL and creativity was mediated through psychological empowerment (Research Question 1), and was significant because the

CI did not include zero. We showed above that CMV did not have biased the path coefficient between EL and psychological empowerment and creativity, respectively. We performed the same marker variable test on the path coefficient between psychological empowerment and creativity and did not find any biasing effect [χ^2_{diff} (1) = 0.34, *ns*], which indicated that none of the three paths in the mediating model were biased by CMV.

Study 3

The purpose of Study 3 was three fold. Firstly, we aimed to cross-validate and test the generalizability of ELS in a larger sample representing yet another work sector. Secondly, we aimed to test the discriminant validity (Messick, 1980) of ELS compared with other leader behavior measures to provide evidence for the uniqueness of the new scale. Bagozzi, Yi, and Phillips (1991) noted that "if two or more concepts are unique, then valid measures of each should not correlate too highly" (p. 425). Thus, to assess discriminant validity, we first compared the subscales of ELS with a measure of LMX (Dansereau et al., 1975). LMX was chosen because of its focus on the quality of relationships between leaders and subordinates, which may also be an important aspect of EL. Although the field of leadership research has evolved considerably over the past decades, LMX has maintained its actuality as a relevant theoretical approach (Schriesheim, Wu, & Cooper, 2011). We also compared the subscales of ELS with transformational leadership (Bass, 1985), which is an important contemporary theory in leadership research (Avolio, Reichard, Hannah, Walumbwa, & Chan, 2009). Although transformational leadership is considered to have overlapping qualities compared with empowering leader behaviors (e.g., individualized consideration; DeRue, Nahrgang, Wellman, & Humphrey, 2011), previous studies have indicated that EL and transformational leadership may be considered two distinct constructs (e.g., Tekleab et al., 2008).

Thirdly, and finally, we sought to investigate the uniqueness (i.e., incremental validity; Sechrest, 1963) of ELS by assessing if ELS could explain variance beyond LMX

and transformational leadership in predicting psychological empowerment. Detection of such incremental validity for ELS relative to LMX and transformational leadership is important, since all three leadership approaches are considered to be empowering in their nature (e.g., Kark, Shamir, & Chen, 2003; Keller & Dansereau, 1995; Vecchio et al., 2010), and since they have demonstrated significant associations with psychological empowerment in previous research (e.g., Aryee & Chen, 2006; Bartram & Casimir, 2007; Boudrias et al., 2009). Antonakis (2004) asserted that "incremental validity is the most difficult and the most important test to pass and can be considered a litmus test of validity" (p. 174).

Method

Participants and procedure. We sent questionnaires to 1,422 employees in two large Norwegian industrial organizations. Both organizations have subsidiaries and activities in other countries. After one reminder, 843 participants (59 percent) had answered, and 72 percent of them were located in Norway. The majority (679) of the respondents were employed in one of the organizations. To satisfy requirements for anonymity we could not register gender and age in this organization. Out of the 164 participants who worked in the second organization, 134 were male. The age of the participants in this organization ranged from 18 to 67 years, and the average age was 45. Regarding the education level, 4 percent of the total sample had elementary schooling, 25 percent had high school, 32 percent had three years or less at college/university and 39 percent had four or more years at college/university. The respondents held a variety of job positions, including both production and administrative functions. Data was collected using both a web-based system and a paper-based questionnaire, the latter was the case for 102 of the respondents.

Measures. The scales for EL, LMX, transformational leadership and psychological empowerment were administered as part of a larger leadership survey in the two

organizations. All measures were rated on a seven-point Likert-type scale (1 = *never* to 7 = *always*).

Empowering leadership. EL was measured with ELS developed in Study 1, and alpha for the autonomy support subscale was .95 and for the development support subscale .94.

LMX. LMX was assessed with the eight-item leader-member social exchange scale (LMSX), recently developed and validated by Bernerth, Armenakis, Feild, Giles, and Walker (2007). An example item is: "My efforts are reciprocated by my manager," and alpha for the scale was .94. The scale is proposed to reflect the social exchange process more accurately than previous LMX scales, and thereby be more consistent with the theoretical foundation of the construct (Bernerth et al., 2007).

Transformational leadership. To measure transformational leadership, we employed 20 items from the Multifactor Leadership Questionnaire (MLQ) Form 5X short (Bass & Avolio, 2000). This is one of the most frequently used measures of transformational leadership, and assesses the five subdimensions (consisting of four items each): idealized influence-attributed (α = .85; sample item: "Displays a sense of power and confidence"), idealized influence-behavior (α = .87; sample item: "Talks to us about his/her most important values and beliefs"), inspirational motivation (α = .88; sample item: "Articulates a compelling vision of the future"), intellectual stimulation (α = .87; sample item: "Re-examines critical assumptions to question whether they are appropriate"), and individualized consideration (α = .87, sample item: "Helps others to develop their strengths").

Psychological empowerment. In the same way as in Study 2, psychological empowerment was assessed with Spreitzer's (1995) 12-item scale. Alpha for the subdimensions were: meaning (α = .86), competence (α = .83), self-determination (α = .85), and impact (α = .84).

Data analysis. Data analysis was performed in three steps. First, cross-validation of ELS was performed with the same procedures as in Study 2. Second, to investigate how ELS was related to LMX and transformational leadership, several analyses were performed. The first was a simple bivariate correlation analysis and the second was a CFA to estimate the factor intercorrelations along with its 99 percent bias-corrected bootstrapped CIs. The 99 percent level was chosen to secure a conservative approach. The third analysis was a chi-square difference test to compare a model where the correlation between a pair of factors was constrained to unity with a model where the factor correlations were freely estimated. The constructs' items were used as indicators in all the CFAs. Finally, regression analysis was performed to determine how much variance of the ELS subscales was accounted for by the LMSX scale and the transformational leadership scales, respectively. Third, to investigate the incremental validity of ELS in predicting psychological empowerment we performed hierarchical multiple regression analysis. Evidence for incremental validity would be indicated if ELS explained significant additional unique variance (R^2_{change}) beyond LMX and transformational leadership in the prediction. Single composite scores were used for all variables in the regression analyses and calculated by averaging the items that constituted each scale. Because the three leadership predictors were substantially correlated (r = .62, .71, and .78, respectively), there was a potential multicollinearity problem. As such, we computed collinearity diagnostics and compared the results relative to criteria suggested by Belsley, Kuh, and Welsch (1980).

Results and Discussion

Cross-validation of ELS. To improve the multivariate normality of the data, twelve multivariate outliers were removed, leaving 831 cases for further analysis. Descriptive statistics for the two ELS subscales are shown in Table 4. CFA on the two-factor model revealed a reasonable-to-mediocre fit to the data (see Table 3). The chi-square was somewhat

large, but given the considerably larger sample size than in Study 1 (N = 159) and Study 2 (N = 215), this was not unexpected. The other fit indices (RMSEA = .094; CFI = .93; SRMR = .041) were almost the same as those in the other two studies. Likewise, as in the two previous studies, modification indices suggested that improvement in model fit could be made when allowing the same error terms to correlate; that is, between items 2 and 3, MI = 35.41, r = .21, p < .001, and between items 22 and 23, MI = 198.76, r = .52, p < .001. The chi-square difference test revealed that the modification was significant [χ^2_{diff} (2, N = 831) = 255.12, p < .001]. The two fit indices RMSEA = .082 and CFI = .95 were also substantially improved compared with the baseline model, whereas SRMR = .043 was largely the same. Table 4 shows that the standardized factor loadings were in the range .71 to .89, and all were significant at the p < .001 level. The loadings were also comparable with those in the two other studies. The intercorrelation between the two factors was .83, p < .001, which was somewhat higher than in Study 1 (r = .72) and Study 2 (r = .78). However, evidence for discriminant validity was achieved since the bias-corrected bootstrapped CI around the correlation did not include unity, 95% CIs [.80, .85]. Together, the results of Study 3 replicated the findings in the two other studies, and gave further evidence supporting the factorial validity of ELS and its generalizability to a wider range of work sectors.

Discriminant and incremental validity for ELS. Table 8 shows bivariate correlations, factorial correlations and their respective CIs, and chi-square difference values. All correlations were strong, positive and significant at the p < .001 level, indicating that the ELS subscales were substantially related to the other leader constructs. However, this was expected, given the relational and empowering nature of all three leadership approaches. No CIs included unity, and all the chi-square difference tests were significant at the p < .001 level, suggesting that the two ELS subscales were distinct and not identical with either the LMSX scale or the transformational leadership subscales in MLQ. The adjusted overall R^2

from the regression analysis revealed that the LMSX scale accounted for 58 percent in the autonomy support subscale and 51 percent in the development support subscale. Similarly, a composite score of the five MLQ transformational leadership subscales accounted for 49 and 48 percent in the autonomy support and development support subscales, respectively. Clearly, there was still sizable unique variance in the ELS subscales that was not accounted for by the other leader constructs. Since the reliability of ELS was high, this unique variance seems to be reliable.

In regard to assessing the incremental predictive validity of ELS beyond LMX and transformational leadership, we first checked the possibility of multicollinearity in the data. No conditioning index exceeded 30 (i.e., the largest was 17.44) for a given dimension coupled with variance proportions greater that .50 for at least two variables (i.e., .91, .43, and .34, respectively; Belsley et al., 1980). In addition, all variance inflation factors (VIF) were less than 10 (i.e., 2.04, 2.63, and 3.25, respectively), generally suggested as a cut off value to detect multicollinearity problems (e.g., Belsley, 1991). These results indicated that multicollinearity was not a serious problem in the subsequent regression analysis, which revealed that ELS explained 8.3 percent unique variance beyond LMX and transformational leadership in predicting psychological empowerment [$F(1, 827) = 95.03$, $p < .001$]. The overall adjusted R^2 was .273. When ELS was entered first in the analysis, LMX and transformational leadership did not predict significant incremental variance in psychological empowerment [$F(2, 827) = 1.56$, *ns*], indicating that ELS was the dominant predictor. To conclude with more certainty on this issue we performed supplemental dominance analysis (Budescu, 1993). According to Budescu, "one variable is more important than its competitor if its predictive ability exceeds all others' in all subset regressions" (p. 545). This method confirmed that ELS was the most important (i.e., dominant) predictor relative to psychological empowerment, followed by LMX, and transformational leadership as the least

important predictor, see Table 9. In regard to the potential effects of CMV, this might only have biased the magnitude of the regression coefficients and not the incremental R^2 (i.e., relative validity) of an additional independent variable; provided that all predictor-criterion relationships were affected equally by the same potential method factors (cf. Piccolo et al., 2012, p. 579-580).

In sum, the results provided evidence supporting the discriminant and incremental validity of ELS, and that the new scale provides unique information that is not redundant compared with the other leader constructs. This may also indicate that leaders who wish to empower subordinates should consider behaving in ways that are somewhat different from the behaviors described in theories of LMX and transformational leadership.

Insert Table 8 about here

Insert Table 9 about here

General Discussion

This paper sought to make a theoretical contribution by identifying central influence processes (i.e., power sharing, motivational support, and development support) and associated behavior manifestations that empowering leaders should exert to promote individual subordinates in working autonomously. We used superleadership (Manz & Sims, 2001) as a starting point for our behavior conceptualization, because of its particular emphasis on autonomy. Other relevant empowerment sources were examined and included where superleadership was considered to have shortcomings. With the aim of performing a sound validation process of the new scale, we conducted three independent studies,

representing different work settings to assess the scale's factor validity, concurrent validity, discriminant validity, and incremental validity (Messick, 1980; Sechrest, 1963). We discuss our findings and their implications more in detail below.

Theoretical Implications

Factor analyses in Study 1 provided adequate support for a theoretical meaningful two-dimensional construct of EL, which we labeled the Empowering Leadership Scale (ELS). Support for the two-factor solution was further obtained through cross-validation in two independent samples (Studies 2 and 3). The psychometric properties of ELS were consistent across all three studies, which support the generalizability of the instrument to a wider range of organizations and work sectors. Both EL dimensions are anchored in the identified influence processes in that autonomy support was found to be a composite dimension of power sharing and motivational support, whereas development support was found to be a statistically distinct dimension. However, the fairly high correlation coefficients of the two dimensions in all three studies indicated that they share conceptual similarities.

The first dimension, autonomy support, consisted of empowering leader behaviors that theoretically influence subordinates' opportunities and motivation in performing autonomous work-role activities through delegation, coordination and information sharing, encouragement of initiative and goal focus, efficacy support, and inspirational communication. The second dimension, development support, included leader behaviors that influence subordinates' continuous learning and development through leaders' role modeling and guidance, which also clearly have implications for their ability to cope with autonomous activities. A common characteristic of these broad dimensions and their included behaviors is the leader's genuine interest in subordinates' motivation and development to work autonomously within the framework of the organization's goals and strategies.

To further justify the relevance of the two EL dimensions, it is useful to consider them in light of what researchers have discussed previously. In this regard Conger and Kanungo (1988) pointed out that managerial techniques and strategies that strengthen employees' self-determination needs and self-efficacy beliefs will make them feel more powerful. Moreover, Petter, Byrnes, Choi, Fegan, and Miller (2002) found in a qualitative study of empowerment of street-level bureaucrats at a large state service agency that having adequate skills and tools, and also sufficient autonomy and independence, was valued by each of the participants that were interviewed. Additionally, Fernandez and Moldogaziev (2011) identified that management practices that provided employees with job-related knowledge and skills and granted them greater discretion had a positive influence on employees' perceived performance. Also self-determination theory (SDT; Deci & Ryan, 1985), which states that people are intrinsically motivated when their psychological needs of competence, autonomy, and relatedness are satisfied, can be conceptually related to the dimensions identified in ELS. Based on SDT, intrinsic motivation is influenced by autonomy because it stems from one's sense of self and is accompanied by willingness and engagement in the work itself. The opposite of autonomous motivation is "controlled motivation," which involves a sense of external pressure (Gagné & Deci, 2005). The present paper considers EL to be an autonomy-supporting form of leadership, and the two distinct dimensions of ELS appear to be consistent with supportive behaviors described as important for satisfying the basic psychological needs in SDT.

In our theoretical discussion of EL we suggested that self-leadership and psychological empowerment may be regarded as important empowering characteristics with subordinates that have the potential to transmit the effect of EL on subordinate outcomes. Our analysis confirmed the mediating function of these two constructs in that self-leadership mediated the effect of EL on subordinates' performance and that psychological

empowerment mediated the effect of EL on creativity. When considering this issue in more detail, there may be some underlying similarities between leadership that facilitates self-leadership and psychological empowerment, respectively. One of the most central theoretical denominators appears to be intrinsic motivation (Deci & Ryan, 1985), in that psychological empowerment itself is defined as the experience of intrinsic task motivation (Thomas & Velthouse, 1990). Self-leadership "has also been significantly informed by the concept of intrinsic motivation" (Neck & Houghton, 2006, p.281), especially through the natural reward and positive thought pattern strategies. It is therefore reasonable to argue that a major part of the specific empowering leader behaviors underlying EL share a focus on facilitation of intrinsic motivation among subordinates; that is, by affecting their intrinsic task motivation directly, but also indirectly by facilitating subordinates' ability to influence their own intrinsic motivation through self-leadership.

Other important findings in Study 1 and Study 2 were the initial support for the concurrent validity of ELS by showing its positive relationship to a number of subordinate outcomes beyond self-leadership and psychological empowerment, including job satisfaction, work effort, creativity, and performance. Although most studies have shown a positive relationship between EL and job satisfaction (e.g., Vecchio et al., 2010), the inverse has also been observed. For example, Robert, Probst, Martocchio, Drasgow, and Lawler (2000) identified lowered or even negative associations between managerial empowering practices and job satisfaction in national cultures with high power distance relative to those with low power distance. Concerning work effort, this has traditionally been a variable in motivational theories, such as in expectancy theory (Vroom, 1964), goal setting theory (Locke & Latham, 1990), and self-efficacy theory (Bandura, 1997). EL, as conceptualized in the present paper, is considered to be consistent with these theories through its focus on leader behaviors associated with goal orientation, encouraging initiative, focus on strengths among

subordinates, and self-efficacy support. The finding of a positive relationship between ELS and work effort was therefore as expected. Also expected was the positive finding between ELS and creativity, as ELS has substantial focus on motivational support and because intrinsic motivation has been conceptualized as one of the most important antecedents of creativity (Amabile, 1983).

Study 3 indicated that ELS included variance that was not accounted for by LMX and transformational leadership, and thus, support for discriminant validity of ELS was obtained. Additionally, Study 3 gave support for ELS predicting significant incremental variance in psychological empowerment beyond LMX and transformational leadership. These two findings are important, since demonstration of discriminant and incremental validity is a prerequisite to evaluate the uniqueness and value of the new ELS compared with related and well-established leadership constructs. Accordingly, the findings suggest that ELS is a distinct scale compared with both LMX and transformational leadership. One possible explanation for the uniqueness of ELS is our conceptual focus on the support of autonomy and independence, which is not explicitly considered in the other two leadership approaches.

Practical Implications

The results of this paper may have several practical implications for organizations, managers and leaders. Our findings suggest that EL may be a more effective leadership approach than LMX and transformational leadership when the aim is to promote subordinates' perception of psychological empowerment. From a conceptual point of view we also suggest EL to be more effective in promoting subordinates' self-leadership, although this is not tested empirically in this paper. However, the finding of Tekleab et al. (2008) that EL predicted self-leadership when controlling for transformational leadership but not the reverse, give some empirical support to this issue.

To be perceived as empowering our results suggest that leaders should support employees' autonomy, motivation and development. This multidimensionality is important, since enhanced autonomy through delegation is dependent on employees having the skills, resources, and psychological support necessary to handle new responsibilities (Yukl, 2010). Thus, empowering leaders cannot just delegate and then retire into a passive role relative to their subordinates; they should also play an active role in motivating and developing subordinates. Trevelyan (2001) found some support for this notion in that employees who were granted autonomy perceived job satisfaction when they had a participative leader; without this leader involvement they had a tendency to feel isolated.

Organizations that focus on empowerment should ensure that their leader selection and development activities take into account and foster attitudes and behaviors in line with those that we have conceptualized in the present paper. EL may be considered as a relational-oriented form of leadership, and DeRue et al. (2011) found support for the idea that leader's interpersonal attributes, such as extraversion and agreeableness, were associated with relational-oriented behaviors. Although not tested, they also mentioned communication skills and emotional intelligence under the heading of interpersonal attributes. However, although such attributes may predispose leaders to empowering behaviors, these behaviors also have the potential to be learned and developed. Hardré and Reeve (2009) found support for this view in an experimental study where managers after receiving training significantly displayed a more autonomy-supportive managerial style than non-trained managers in a control group. However, to share power with employees may be challenging for some leaders. For example, Forrester (2000) noted that forces within managers such as needs for control, achievement, and recognition, prevent them from sharing power. We therefore recommend organizations implement empowerment systems gradually, since both leaders and subordinates may need

time to learn and internalize the necessary attitudes and behaviors that empowerment requires.

Limitations and Suggestions for Future Research

This study has its limitations. First, the data which formed the basis for the investigation of the concurrent validity of ELS in Study 1 and Study 2 were mainly collected from subordinates, which may have inflated estimates of correlations between ELS and outcome variables due to common method variance (CMV). Even though statistical procedures were used to uncover and control for CMV bias, the incompleteness of these applied techniques means that we could not conclude with certainty on this issue. Therefore, there is a need to test the concurrent validity of ELS in future studies that have further controls for CMV. Second, we were only able to test the relationship between EL and self-leadership in a relatively small sample. We therefore recommend, as one of the next steps in the research program, to further investigate this relationship using a larger sample. Moreover, in accordance with Houghton and Yoho's (2005) suggestion, there is also a need to test whether self-leadership operates as a mediator between EL and psychological empowerment. Third, the concurrent analyses in Study 1 and Study 2 revealed a correlational relationship between the study variables, but they did not establish a causal relationship. To assess causal directions and predictive validity, the findings should be replicated in future experimental and/or longitudinal research. Additionally, future research should investigate the impact of culture on the relationship between ELS and outcome variables, since previous studies (e.g., Robert et al., 2000) have suggested such coherence.

Fourth, the stability and generalizability of ELS should be tested further in other samples gathered from other types of rating sources, organizations, work sectors and cultures than those that we included. Concerning rating sources, we recommend future investigation of the psychometric properties and validity of ELS on data gathered from multiple sources,

including subordinates, supervisors, peers, and leaders' self-ratings. Such exploration may give indications about the usefulness of ELS as a multisource feedback instrument in, for example, leader development programs (Hezlett, 2008). We also recommend investigation of the degree of congruence between rating sources, especially between subordinates' ratings and leaders' self-ratings, since these tend to be in the lower range (Conway & Huffcut, 1997) and since the level of agreement between raters may have implications for predictions of several outcomes (Fleenor, Smither, Atwater, Braddy, & Sturm, 2010). In addition, the cultural implications of the coherence between self and other ratings need to be further investigated since there may be variations across cultures (Atwater, Wang, Smither, & Fleenor, 2009).

Fifth and finally, since scale validation is a continuous process (Nunnally, 1978), continued refinement and validation of the scale is needed. A next fruitful step could be to test the discriminant validity of ELS further relative to other EL measures, such as ELQ (Arnold et al., 2000), and other related leadership approaches, such as servant leadership (e.g., Liden, Wayne, Zhao, & Henderson, 2008), authentic leadership (e.g., Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008), and ethical leadership (e.g., Brown, Treviño, & Harrison, 2005). Because we were not able to assess ELS' incremental validity relative to other empowering leadership approaches in predicting self-leadership, we also recommend future research do this. Additionally, new items should be created to test the 24-item original measurement model further because this model had close to satisfactory fit in our initial analyses.

Conclusion

This paper has sought to clarify central aspects of empowering leadership as a foundation to identify its key influence processes, associated behavior manifestations, and central mediators at the individual level of analysis. Based on extensive and comprehensive

factor analytic methods we have developed and validated a meaningful two-dimensional measure that captures core practices that empowering leaders should apply towards individual subordinates. The two dimensions (i.e., autonomy support and development support) appear to be supported both theoretically and empirically by previous research on empowerment. It is our intention that the paper's clarification of the EL construct, including the development of the new instrument, may advance future research in the leader's role in the empowerment process of employees. In addition, we hope the paper may give leaders and managers additional inspiration and practical insight in their efforts to provide employees with autonomy, motivation and self-leadership skills.

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Table 1

Descriptive Statistics and Wording for the Empowering Leadership Items for the EFA and CFA Subsample

Item number and wording	Dimension	Exploratory factor analysis		Confirmatory factor analysis	
		M	*SD*	*M*	*SD*
1. My leader conveys that I shall take responsibility	Delegating 1	5.30	1.09	5.20	1.32
2. My leader gives me power	Delegating 2	4.95	1.21	4.71	1.31
3. My leader gives me authority over issues within my department	Delegating 3	5.83	1.05	5.77	1.02
4. My leader encourages me to start tasks on my own initiative	Initiative 1	4.78	1.13	4.77	1.45
5. My leader expresses positive attitudes related to me starting with my own defined tasks	Initiative 2	5.15	1.11	5.04	1.32
6. My leader encourages me to take initiative	Initiative 3	5.12	1.05	4.87	1.28
7. My leader is concerned that I reach my goals	Goal focus 1	5.23	1.16	5.13	1.25
8. My leader makes me work towards goal attainment	Goal focus 2	4.85	1.11	4.79	1.14
9. My leader is concerned that I work in a goal-directed manner	Goal focus 3	5.10	1.00	4.91	1.11
10. My leader listens to me	Efficacy support 1	5.70	1.12	5.65	1.13
11. My leader recognizes my strong and weak sides	Efficacy support 2	4.95	1.03	4.75	1.12
12. My leader invites me to use my strong sides when needed	Efficacy support 3	5.27	1.15	5.01	1.29
13. My leader is enthusiastic about what we can achieve	Inspiring 1	4.78	1.28	4.74	1.40
14. My leader conveys a bright view of the future	Inspiring 2	5.10	1.11	5.00	1.13
15. My leader shows that he/she is optimistic about the future	Inspiring 3	5.46	1.10	5.38	1.08
16. My leader coordinates his/her goals with my goals	Coordinating 1	4.50	1.25	4.22	1.33
17. My leader talks with me about his/her own and my goals	Coordinating 2	4.41	1.35	4.16	1.46
18. My leader discusses shared affairs with me	Coordinating 3	4.99	1.11	4.84	1.35
19. My leader lets me see how he/she organizes his/her work	Modeling 1	3.92	1.38	3.70	1.42
20. My leader's planning of his/her work is visible to me	Modeling 2	4.01	1.34	3.80	1.37
21. I gain insights into how my leader arranges his/her work days	Modeling 3	3.91	1.46	3.58	1.57
22. My leader shows me how I can improve my way of working	Guidance 1	3.57	1.14	3.41	1.25

23. My leader guides me in how I can do my work in the best way	Guidance 2	3.93	1.21	3.77	1.37
24. My leader tells me about his/her own way of organizing his/her work	Guidance 3	3.54	1.43	3.21	1.46
Univariate skewness range		-.73 to .20		-.72 to .25	
Univariate kurtosis range		-.62 to .41		-.66 to .48	
Mardia's normalized multivariate kurtosis coefficient		9.14		11.75	

Table 2

Exploratory Factor Analysis of Initial and Final Set of Empowering Leadership Items

	Initial set of 24 items					Final set of 18 items				
	Factor 1		Factor 2			Factor 1		Factor 2		
Item number and dimension	P	S	P	S	h^2	P	S	P	S	h^2
3. Delegating 3	**.97**	.74	-.35	.30	.61	**.94**	.77	-.29	.27	.64
12. Efficacy support 3	**.85**	.84	-.02	.54	.70	**.84**	.84	.02	.51	.71
5. Encourage initiative 2	**.82**	.73	-.14	.41	.54	**.79**	.73	-.10	.37	.53
2. Delegating 2	**.82**	.72	-.16	.39	.53	**.81**	.75	-.11	.37	.56
11. Efficacy support 2	**.80**	.80	.00	.53	.64	**.78**	.80	.03	.49	.64
6. Encourage initiative 3	**.74**	.85	.17	.66	.75	**.73**	.84	.19	.62	.73
7. Encourage goal focus 1	**.73**	.82	.14	.62	.68	**.72**	.80	.14	.57	.66
10. Efficacy support 1	**.69**	.71	.03	.49	.50	**.69**	.72	.05	.45	.51
1. Delegating 1	**.64**	.67	.04	.47	.45	**.64**	.67	.06	.43	.45
9. Encourage goal focus 3	**.64**	.75	.18	.60	.59	**.63**	.74	.18	.55	.56
18. Coordinating 3	**.61**	.75	.20	.61	.58	**.62**	.76	.22	.59	.60
14. Inspiring 2	**.54**	.67	.19	.55	.46	**.50**	.63	.20	.51	.42
8. Encourage goal focus 2	**.51**	.79	.43	.76	.73					
15. Inspiring 3	.48	.63	.21	.53	.42					
4. Encourage initiative 1	.48	.73	.37	.69	.61					
13. Inspiring 1	.36	.57	.31	.56	.38					
24. Guidance 3	-.14	.51	**.97**	.88	.79	-.05	.50	**.92**	.89	.80
20. Modeling 2	-.10	.54	**.96**	.90	.81	-.02	.53	**.93**	.92	.84
21. Modeling 3	-.18	.44	**.93**	.81	.68	-.11	.43	**.90**	.84	.71
19. Modeling 1	-.11	.49	**.89**	.82	.69	-.03	.47	**.86**	.84	.70
22. Guidance 1	-.03	.52	**.84**	.82	.67	.03	.49	**.77**	.79	.63
23. Guidance 2	.15	.60	**.67**	.77	.61	.19	.57	**.64**	.75	.59
16. Coordinating 1	.27	.66	**.59**	.77	.63					
17. Coordinating 2	.34	.71	**.55**	.77	.66					

Eigenvalue	12.58	2.12	9.22	2.07
Variance accounted for (%)	52.4	8.8	51.2	11.5

Note. n = 158. P = pattern coefficients; S = structure coefficients; h^2 = communalities. Pattern coefficients with loadings ≥ .50 are in boldface.

Table 3

Confirmatory Factor Analysis of the Empowering Leadership Scale in Three Independent Samples (Study One, Two, and Three)

Model	*df*	χ^2	Δdf	χ^2_{diff}	RMSEA (90% CIs)	SRMR	CFI
Study One (*N* = 159)							
One-factor model	135	565.42			.142 (.130–.154)	.085	.80
Two-factor model	134	291.24	1	274.18***	.086 (.073–.100)	.060	.93
Two-factor modified model[a]	132	256.57	2	37.67***	.077 (.063–.091)	.062	.94
Study Two (*N* = 215)							
Two-factor model	134	393.50			.095 (.084–.106)	.054	.91
Two-factor modified model[a]	132	299.09	2	94.41***	.077 (.065–.088)	.061	.94
Study Three (*N* = 831)							
Two-factor model	134	1115.14			.094 (.089–.099)	.041	.93
Two-factor modified model[a]	132	860.02	2	255.12***	.082 (.076–.087)	.043	.95

Note. CI = confidence interval; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; CFI = comparative fit index.

[a]Two pairs of error terms were permitted to correlate (Item 2 and 3, and Item 22 and 23).

***$p < .001$.

Table 4

Standardized Factor Loadings and Descriptive Statistics for the Empowering Leadership Scale in Three Independent Samples (Study One, Two, and Three)

	Autonomy support subscale			Development support subscale		
Item	Study One	Study Two	Study Three	Study One	Study Two	Study Three
I1	.80	.73	.79			
I2	.65	.61	.77			
I3	.62	.70	.71			
I5	.70	.68	.80			
I6	.87	.85	.87			
I7	.82	.81	.84			
I9	.78	.68	.80			
I10	.74	.83	.84			
I11	.71	.81	.78			
I12	.86	.81	.84			
I14	.58	.70	.75			
I18	.75	.81	.80			
I19				.83	.91	.89
I20				.86	.75	.88
I21				.89	.77	.86
I22				.73	.72	.77
I23				.76	.77	.80
I24				.89	.81	.87
M	5.09	5.21	5.03	3.58	4.02	3.99
SD	.93	1.07	1.19	1.21	1.32	1.37
Alpha	.93	.94	.95	.93	.91	.94

Note. Study One (*N* = 159); Study Two (*N* = 215); Study Three (*N* = 831). Item wordings are shown in Table 1.

Table 5

Multigroup Analysis of Random Subsamples, Gender, and Organization Affiliation

Model	*df*	χ^2	RMSEA (90% CIs)	SRMR	CFI	Δdf	χ^2_{diff}	ΔCFI
Random subsamples								
Configural invariance	264	533.69	.081 (.071–.091)	.051	.934			
Metric invariance	280	547.90	.078 (.068–.088)	.056	.934	16	14.21	.000
Invariant factor variances	282	549.92	.078 (.068–.088)	.058	.934	2	2.02	.000
Invariant factor covariance	283	552.90	.078 (.068–.088)	.065	.934	1	2.98	.000
Gender								
Configural invariance	264	556.26	.083 (.074–.093)	.063	.929			
Metric invariance	280	578.58	.082 (.072–.092)	.062	.927	16	22.32	-.002
Invariant factor variances	282	581.58	.082 (.072–.092)	.066	.927	2	3.00	.000
Invariant factor covariance	283	585.55	.082 (.072–.092)	.072	.926	1	3.97*	-.001
Organizations								
Configural invariance	396	677.73	.083 (.071–.094)	.078	.931			
Metric invariance	428	712.62	.080 (.069–.090)	.080	.931	32	34.89	.000
Invariant factor variances	432	716.68	.080 (.069–.090)	.082	.931	4	4.06	.000
Invariant factor covariance	434	719.82	.080 (.069–.090)	.091	.930	2	3.14	-.001

Note. CI = confidence interval; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; CFI = comparative fit index.

*$p < .05$.

Table 6

Descriptive Statistics, Bivariate Correlations, and Reliabilities

Study 1 variables, subordinate sample[a]	*M*	*SD*	1	2	3	4	5	6	7	8
1. Organization 1 (dummy)	na	na								
2. Organization 2 (dummy)	na	na	-.68***							
3. Gender	0.69	0.46	-.09	.08						
4. Age	3.63	0.97	.05	-.04	-.03					
5. Autonomy support	5.15	0.88	.01	.07	.07	-.15**	(.93)			
6. Development support	3.70	1.17	-.02	-.03	.07	-.27***	.64***	(.93)		
7. Work effort	5.52	0.69	-.04	.09	.17**	-.01	.43***	.19**	(.83)	
8. Job satisfaction	5.72	0.84	.03	.07	.19**	-.04	.44***	.32***	.35***	(.90)
Study 1 variables, leader subsample[b]	*M*	*SD*	1	2	3	4	5	6	7	
1. Organization 1 (dummy)	na	na								
2. Organization 2 (dummy)	na	na	-.77***							
3. Gender	0.52	0.51	.31	-.29						
4. Age	3.97	0.71	-.06	.14	-.23					
5. Empowering leadership	4.56	0.70	.07	.02	-.28	.24	(.92)			
6. Self-leadership	4.55	0.44	-.23	.10	-.39*	.05	.46**	(.83)		
7. Job performance	5.85	0.55	-.69***	.38*	-.19	-.01	-.12	.38*	(.82)	
Study 2 variables[c]	*M*	*SD*	1	2	3	4	5	6		
1. Gender	.62	.49								
2. Age	3.40	1.13	.10							
3. Empowering leadership	4.81	1.08	-.08	.08	(.95)					
4. Psychological empowerment	5.53	0.76	-.04	.08	.61***	(.86)				
5. Creativity	5.01	0.85	.05	-.06	.42***	.65***	(.92)			
6. General community interest	5.68	1.11	.08	.19**	.31***	.34***	.31***	(.93)		

Note. na = not applicable. Gender: 0 = male, 1 = female; Age: 1 = < 25 years, 2 = 25–34 years, 3 = 35–44 years, 4 = 45–54 years, and 5 = ≥ 55 years. Cronbach's alphas are in parentheses on the diagonal.

[a]$N = 317$. [b]$N = 31$. [c]$N = 215$.

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

Table 7

Multilevel Analysis Predicting Job Satisfaction and Work Effort from the Empowering Leadership Dimensions Autonomy Support and Development Support

	Job satisfaction				Work effort			
Parameter	Estimate	*SE*	Estimate	*SE*	Estimate	*SE*	Estimate	*SE*
Fixed effects								
Intercept (γ_{00})	5.41***	.19	5.17***	.21	5.30***	.16	5.25***	.18
Organization 1 dummy (γ_{10})	.07	.13	.24	.13	-.06	.12	.04	.12
Organization 2 dummy (γ_{20})	.09	.13	.24	.13	.05	.11	.13	.11
Gender (γ_{30})	.25**	.09	.29**	.09	.13	.08	.17*	.08
Age (γ_{40})	.01	.04	.03	.04	.01	.03	.02	.04
Autonomy support (γ_{50})	.44***	.05			.36***	.04		
Autonomy support squared (γ_{60})	.04	.04			.09*	.03		
Development support (γ_{50})			.21***	.04			.07*	.03
Development support squared (γ_{60})			.07**	.03			.08***	.02
Random effects								
Within var(e_{ij})	.40***	.03	.49***	.05	.26***	.03	.30***	.03
Intercept var(u_{0j})	.08**	.03	.05	.03	.06**	.02	.07**	.03
Slope var(u_{5j})	.04	.03	.06	.05	.02	.02	.07	.05
cov(u_{0j} u_{5j})	-.05*	.02	-.05	.03	-.03*	.02	-.05*	.03

Note. N =317 subordinates (level 1) nested within N = 86 leaders (level 2).

*p < .05. **p < .01. ***p < .001.

Table 8

Analysis of Discriminant Validity between Leader Behavior Constructs

		Transformational leadership (MLQ)				
Scale	LMSX	Idealized influence-attributed	Idealized influence-behavior	Inspirational motivation	Intellectual stimulation	Individualized consideration
ELS autonomy support						
Bivariate correlation	.76	.66	.66	.61	.65	.63
Factor correlation	.81	.73	.73	.67	.72	.71
99% CIs factor correlation	[.76, .85]	[.67, .79]	[.66, .78]	[.59, .73]	[.67, .78]	[.65, .77]
Chi-square difference[a]	1246.01	582.91	682.89	930.38	708.79	763.16
ELS development support						
Bivariate correlation	.72	.65	.65	.56	.66	.62
Factor correlation	.75	.69	.70	.60	.71	.69
99% CIs factor correlation	[.68, .80]	[.63, .75]	[.64, .75]	[.53, .67]	[.65, .77]	[.62, .75]
Chi-square difference[a]	1336.78	634.16	714.11	1064.43	702.56	786.39
LMSX						
Bivariate correlation		.61	.56	.50	.59	.57
Factor correlation		.68	.62	.55	.65	.66
99% CIs factor correlation		[.60, .74]	[.54, .68]	[.46, .63]	[.57, .72]	[.59, .72]
Chi-square difference[a]		684.60	923.63	1190.19	870.27	874.14

Note. CI = confidence interval; MLQ = the Multifactor Leadership Questionnaire; LMSX = leader-member social exchange; ELS = the Empowering Leadership Scale. All correlations and chi-square difference values (*df* = 1) are significant at $p < .001$ level.

[a]The difference between chi-square values for a model with the factor correlation constrained to unity and a model where the factor correlation was estimated freely.

Table 9

Dominance Analysis for Psychological Empowerment

Leadership dimensions entered in		Incremental contribution (R^2) of dimension in Model 2		
Model 1	R^2 for Model 1	ELS	LMSX	TFL
ELS	.27***		.00	.00
LMSX	.18***	.09***		.01**
TFL	.12***	.16***	.08***	
ELS, LMSX	.27***			.00
ELS, TFL	.27***		.00	
LMSX, TFL	.19***	.08***		

Note. ELS = the Empowering Leadership Scale; LMSX = leader-member social exchange; TFL = transformational leadership. Column 1 lists the variables entered in the first step of a hierarchical regression (Model 1), with column 2 presenting the R^2 for the first step. Values in columns 3–5 represent the incremental R^2 for each individual dimension when added separately in a second step of the regression (Model 2).

$N = 831$.

**$p < .01$. ***$p < .001$.

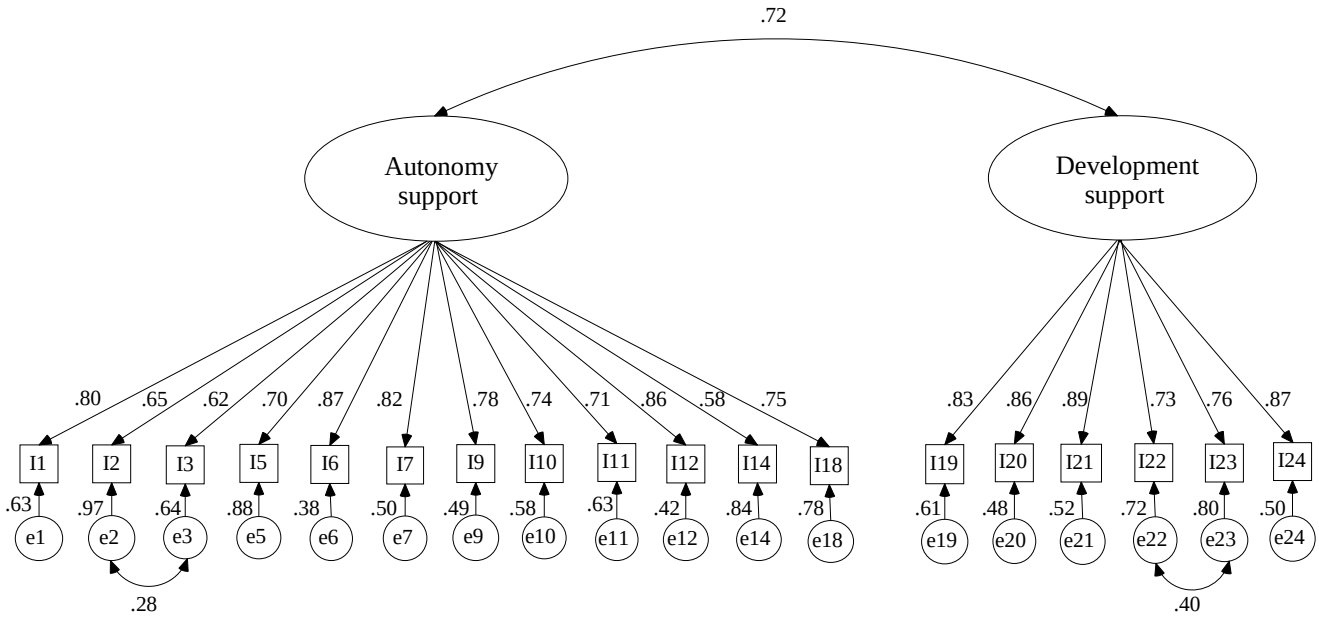

Figure 1. The final two-factor, 18-item confirmatory factor analysis model of the Empowering Leadership Scale (ELS).