



The validation and correlations with empowering leadership and self- efficacy scales

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Abstract: Empowering employees becomes a current issue as leadership approach as well as a managerial means of contemporary approaches. Empowering employees is predicted to impact on self- efficacy positively.

In the first phase of the study, the investigation of validity and reliability of empowering leadership and self-efficacy scale were conducted among healthcare employees in Turkey. In the second phase, the relationships between empowering leadership and the sub- dimension of empowering leadership and self-efficacy were searched.

The related scales were performed among 550 healthcare employees, who were selected randomly from 7 different hospitals of states that in different regions of Turkey. Empowering leadership scale of Amundsen and Martinsen (2014), and General Self-efficacy scale of Chen, Gully and Eden (2001) were used to measure designed model within the study.

As the results of the study, a new version of empowering leadership scale, which is consisted of 2 dimensions and 5 questions in each dimensions and has reliability and validity in Turkish, was reached. Moreover, a new self- efficacy scale that is insisted of one dimension and 4 questions and has reliability and validity in Turkish was obtained within the analyses. Empowering leadership as total score, sub-dimension of empowering leadership as autonomy and development support affects on self-efficacy positively.

Keywords: Empowering Leadership, Autonomy Support, Development Support, Self-Efficacy, Healthcare Employee.

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1. Introduction

Leadership role becomes increasingly crucial within contemporary institutions, it does not matter what the sector is. Leadership reveals itself in each process due to its effects on employee behaviors. In the light of this viewpoint, leadership abilities state an improved and increased knowledge position. Leaders can enhance and foster organizational performance by giving self-control and providing participation of employees in decision making process so that they can put organizational resources to good use (Dierendonck & Dijkstra, 2012, p. 2).

In contemporary management literature, work structure is designed with the current concepts such as autonomy, self-leadership, delegation of responsibility and decision-making authority (Amundsen & Martinsen, 2015, p. 1). Empowering leadership is a crucial instrument for organizational processes such as problem-solving, enhancing autonomous and self-managing teams and individuals (Arnold, Arad, Rhoades, & Drasgow, 2000, p. 249; Tong, Rasiah, Tong, & Lai, 2015, p. 191). Empowering leadership is a facilitator to share power, authority and responsibility between leaders and employees (Kou and Lee, 2015, p. 118). Empowering behaviors support sharing power and authority by improving new ideas and conceptualizing changing process (Jönsson, Muhonen, Denti, & Chen, 2015, p. 3).

As one of the leadership approaches, empowering leadership has a crucial place in modern management approach with the view of positive impact on employees. Empowering employees, imparting participation, authority, right to freedom of expression may reduce many negations. Self-efficacy as another supporting concept this view, may be treated as closely associated with empowering leadership and it can be assumed that self-efficacy is effective about self-development and self-determination. Self-efficacy allows healthcare employees to perceive their colleagues' competencies and confidence in their skills (Nielsen, Yarker, Randall, & Munir, 2009, p. 1242) and empowering feelings have associated with the perception of authority support of healthcare employees by their supervisors or executives, as to the study conducted by Chang, Shih and Lin (2010) (Chang, Shih, & Lin, 2010, p. 432). Healthcare administration should promote empowering behaviors in order to enhance the reflections of satisfaction, commitment and justice on patients and colleagues (Avrama & Priescu, 2012, p. 949), since, effectiveness among healthcare employees can be related with self-efficacy and autonomy support from the organization (Mierlo, Rutte, Vermunt, Kompier, & Doorewaard, 2006, p. 294) and this framework can also contribute to health service quality from the patient perspective.

This paper is presented as follows. In the next section, a general view of literature review related with empowered leadership, self-efficacy and also hypothesis are stated. In the third and fourth sections, research method and results are mentioned. As a last section, discussion and implications for the future studies are addressed and proposed.

1.1. Empowering leadership

Many organizations have transformed their hierarchical management structure into empowering employees in order to improve organizational general flexibility and efficiency (Arnold et al., 2000, p. 249). In the light of this view, empowering expresses a high authority, individual orientation and control over the environment (Arnold et al., 2000, p. 250). Empowering behaviors of leaders present autonomy and decision making opportunities and participation in decision making process (Auh, Menguc, & Jung, 2014, p. 562). Empowering behaviors enable to transform a crowd in the organization into a community by supporting to work together regarding with their values, believes, ideas etc. (Lee, 2008, p. 104).

Empowering leadership, which involves such different capabilities than the other types of leadership as self-control, self-regulation, self-management and self-leadership of the followers (Tekleab, Sims, Yun, Tesluk, & Cox, 2008, p. 187), constructs a framework with supervisor, employee and client, so that this type of leadership supports motivation, efficacy and positive reflections of these factors to the clients or users (Auh et al., 2014, p. 562). This type of leadership aims to foster self-leadership capability and efficiency of followers rather than highlighting general leadership characteristics (Tekleab et al., 2008, p. 197) and is important in as individual based as group-level activities and additionally, connecting a tie between empowering leadership and performance outcomes between groups and within the groups (Fong & Snape, 2015, p. 126) would contribute positive management approach.

Empowering leadership insists of five main factors as coaching, informing, leading by example, showing concern and participative decision making (Arnold et al., 2000, p. 249; Hon & Chan, 2013, p. 200; Raub & Robert, 2010, p. 1747). 'Coaching' refers to show problem solving ways by encouraging team members and sharing knowledge in this matter (Martínez-Córcoles, Schöbel, Gracia, Tomás, & Peiró, 2012, p. 216). As one of the dimensions of empowering leadership, 'informing' expresses that leaders share information about organizational goals, mission, vision and the other important concepts (Martínez-Córcoles, Gracia, Tomás, Peiró, & Schöbel, 2013, p. 294). 'Leading by example' can be explained as behaviors that express the degree of dependence of leader on her/his own work and team members (Martínez-Córcoles et al., 2012, p. 216). 'Showing concern' elucidates that leaders concern about employees' feelings, ideas, view about organization and tasks and this dimension is associated with the understanding of achieving goals and fostering a collective consensus within the organization (Men, 2010, p. 37). 'Participative decision making' illustrates the characteristic of empowering leadership that is defined as leading employees organizational goals and decisions and also encouraging them to take action independently within decision making process (Tuckey, Bakker, & Dollard, 2012, p. 17).

According to Reitzung's (1994) "Developmental Taxonomy of Empowering Principal Behavior", support, facilitation (van Dierendonck & Dijkstra, 2012, p. 4) and possibility are classified as types of empowering behaviors. Support refers encouraging employees taking responsibility, risk and sharing their voice, facilitation demonstrates models for decision making and problem solving processes and possibility is about critique of using of various resources such as time, money and opportunities (Keyes, Hanley- Maxwell & Capper, 1999, p. 206).



Furthermore, authority, facilitation and accountability can be arrayed as the other dimensions of empowering leadership upon many authors in the field (Dierendonck & Dijkstra, 2012, p.4). Authority refers sharing power between leaders and followers by stating accountable responsibilities by managing performance evaluation process (Hakimi, 2010, p. 13). Facilitator role of empowering leadership is associated with considering alternative ways for reaching goals and completing decision making process (Keyes, Hanley- Maxwell & Capper, 1999, p. 203). The factor 'accountability' can be described as explaining employees the organizational goals and expecting them as being responsible for achieving these goals (Dierendonck & Dijkstra, 2012, p. 4).

Feeling empowerment has a potential to support focusing on belonging and benefits of the organization (Li, Chiaburu, & Kirkman, 2014, p. 5). Empowering leadership behaviors are associated with less dysfunctional resistance, greater independence from authority and cooperation, that is also addressed within the study of Vecchio, Justin, and Pearce (2010, p. 538). Furthermore, empowering leadership behaviors constitute a sharing organizational environment that employees can possess a feeling that coping with complex and challenging situations and tasks (Carmeli, Schaubroeck, & Tishler, 2011, p. 408).

Studies conducted by Harris et al. (2014) revealed that empowering leadership supports the predicting personnel creativity (Harris, Li, Boswell, Zhang, & Xie, 2014, p. 592) and also has a positive impact on performance and role clarity (Harris et al., 2014, p. 594). Moreover, empowering leadership has a key role to describe team self-concordance and efficacy (Hon & Chan, 2013, p. 200). Additionally, the results of Liu, Fu and Zhang's (2008) study exhibit the effects of factors of empowering leadership behaviors on many organizational variables. As one of the factors of empowering leadership behaviors, 'leading by example' has positive impact on perceived meaning of the job and also the other factor, 'participative decision making' enhances to express employees' opinions, moreover, 'facilitating', 'coaching' and 'informing' enable to gain control to fulfill employees' goals (Liu, Fu, & Zhang, 2008, pp. 942-943).

According to literature review, empowering leadership has two dimensions, classified as autonomy support and development support.

1.1.1. Autonomy Support

Autonomy is identified as the need for choosing behaviors and views independently and as to self-will, as mentioned in the framework with self-determination theory (Shih, 2012, p. 3). Empowering behavior taxonomy insists many variables such as support, facilitation and encouraging behaviors etc., as one of the concepts, autonomy is consisted of providing taking responsibility in problem solving process, encouraging taking risks, developing opportunities and opinions (Reitzug, 1994, p. 291). Moreover, self-determination theory defines concept of autonomy as a preferred environment that enhancing motivation, internalized learning outcomes and allowing individuals to making preferences and choices freely (Shih, 2008, p. 315).

Autonomy supportive role of empowering leadership is a key point in order to comprehend and make a sense about self-confidence of employees and providing control over the goals and decisions, also it can be roadmap for employees and leaders to develop extra positive abilities and behaviors (Sharma & Kirkman, 2015, pp. 5-27). Besides, these behaviors refer motivation implies that present alternatives for individuals for making independent choices and preferences and also affecting on individual's perception (Raub & Robert, 2010, p. 1747). As this view, motivation tools will contribute to employees' satisfaction, autonomy and more adaptive behaviors (Lim & Wang, 2009, pp. 52-55). Autonomy functions with facilitator and protective role as a negative predictor of burnout, emotional exhaustion, as well as positively associated with personal success (Madathil, Heck, & Schulberg, 2014, pp. 161-163), psychological well-being (Kinnafick, Thøgersen-Ntoumani, Duda, & Taylor, 2014, p. 196), creative behaviors and job performance (Çekmecelioğlu & Günsel, 2011, p. 889), self-motivated behaviors (Ho & Nesbit, 2014, p. 394), decreasing the effects of controlled motivation (Oostlander, Güntert, Schie, & Wehner, 2014, p. 873).

Autonomy support can be provided in three ways as constituting an understanding for tasks, presenting alternatives for doing tasks and empathizing feelings about the tasks (Gagné, Koestner, & Zuckerman, 2006, p. 1843). Empowerment and autonomy support are essentials for achieving organizational goals among healthcare employees (Sabiston & Laschinger, 1995, p. 42). Employees can feel themselves as neglected, abandoned and less committed due to the lack of autonomy support and independent work setting (Aube, Rousseau, & Morin, 2007, p. 484). Furthermore, higher perceived autonomy supportive behaviors and opportunities for thinking and acting independently motivate learning outcomes in problem-based process (Stefanou, Stolk, Prince, Chen, & Lord, 2013, p. 109).

1.1.1. Development Support

Development is identified as enhancing knowledge, skills and competencies of employees in order to gain individual and professional advancement (Gilley, Shelton, & Gilley, 2011, p. 387), as well as leadership focuses on personal goals achievement and development as to its structure that has skills, strategies and competencies (Johnson, 1999, p. 4). Constructive-developmental theory presents a structure that involves implications for potential growth and predicting performance changes (Strang & Kuhnert, 2009, p. 431). In other words, this theory focuses on individual growth and comprehends the potential developing ways of self and the environment (McCauley, Drath, Palus, O'Connor, & Baker, 2006, p. 634). Moreover, the concept of developmentalism highlights the balance between benefits from individual supports and challenges and constructing individual growth (Drago-Severson & Blum-DeStefano, 2014, p. 116).

When leaders have awareness of values, strengths, weaknesses and confidence in individuals, the development process is required autonomy and gain individuals' efficacy (Ladegard & Gjerde, 2014, p. 635). Developmental behaviors affect on



many variables such as self-identity, organizational citizenship behaviors of employees, work-related knowledge, skills (Zhang & Chen, 2013, p. 535). Individuals should be participated in collaborative work in the organization in order to survive development process (Lim & Wang, 2009, p. 57). Developmental support role of leadership is key point for creativity, innovation, problem solving, achieving expected goals by using growth and development of employees (Gilley et al., 2011, p. 389). Developing skills builds a motivational environment for employees by experiencing the sense of competence (Ho & Nesbit, 2014, p. 395).

1.2. Self-efficacy

Self-efficacy beliefs, which is crucial for social cognitive theory (Ekholm, Zumbun, & Conklin, 2015, p. 198), is occurred by appraisal processes of knowledge and using it as a guide (Alessandri, Vecchione, & Caprara, 2015, p. 25). Self-efficacy provides to assess individual competence and beliefs for achieving goals and fulfilling job demands (Chang & Edwards, 2015, p. 36). As the management perspective, planning process and self-efficacy have a reciprocal relationship (Ernsting, Knoll, Schneider, & Schwarzer, 2015, p. 241). Self-efficacy theory presents a framework for this concept as a cycle from harmful or challenging situations to beneficial sides (Mystakidou et al., 2015, p. 161). Self-efficacy is related with individual decisions or beliefs about feelings, thoughts, and individual motivational tools, behaviors in order to control situations and achieve the goals (Rowland, Adamski, Neal, Myers, & Burnett, 2015, p. 60).

Social cognitive theory locates self-efficacy as beliefs in individual capability in order to fulfill the tasks and achieve the goals in the action process (Wang, Xu, & Chan, 2015, p. 205). Therefore, self-efficacy can be described as ability to copy with a difficult or resource demanding behavior (Schwarzer, Antoniuk, & Gholami, 2015, p. 57). The concept of self-efficacy has a sophisticated structure, so that it is beneficial to understand and search different fields and views. Generally, self-efficacy has an impact on job satisfaction, enhancing ability of coping with challenging situations, workplace well-being (Chang & Edwards, 2015, p. 43), low depressive behaviors (Du, Li, Lin, & Tam, 2015, p. 241), quality of life (Yu et al., 2014, p. 2). Due to the association of self-efficacy many concepts, this term has been studied with many variables in different search fields. In such a study, authors found out the relationship between social support, planning and self-efficacy and positive effect of self-efficacy on health behaviors (Ernsting et al., 2015, p. 244), communication, teamwork, leadership (Watters et al., 2015, p. 1). Self-efficacy is a central point for coping with unexpected challenges, developing human resources, defining core purposes (Hallak, Assaker, & Lee, 2015, p. 38), task initiative, persistence (Heath, Curtis, Fan, & McPherson, 2015, p. 125), career maturity, attachment (Lee, Lee, Song & Kim, 2015, p. 154) especially as to Bandura (1995) individual decisions, emotions, level of effort (Isik, 2014, p. 217), participation in activities and environments (Verevkina, Shi, Fuentes-Caceres, & Scanlon, 2014, p. 491). Self-efficacy can be described as individual beliefs in capability in order to fulfill tasks and achieve goals (Lin, Liang & Tsai, 2015, p. 449), ability to engage in behaviors effectively (Majer, Glantsman, Palmer, & Jason, 2015, p. 40), as mentioned by Bandura (1977, 1986, 1997) (Mystakidou et al., 2015, p. 161; Peguero & Shaffer, 2015, p. 47; Qualter et al., 2015, p. 33; Verevkina et al., 2014, p. 591).

In many studies, authors treat the concept of self-efficacy as employee motivation (Mulvaney, 2014, p. 460). Basically, this perspective can be considerable, however it should be explained within broader management approach as that this term is associated with many factors, especially in decision making process and affects on many organizational outcomes. Self-efficacy refers a merit in terms of achievement according to social cognitive theory (Mulvaney, 2014, p. 467; Ventura, Salanova, & Llorens, 2015, p. 278). According to study results of Khani and Mirzaee (2015), self-efficacy states as a mediator in order to diminish negative effects of stressors on employee burnout (Khani & Mirzaee, 2015, p. 95), the positive perceived work environment and psychological well-being (Ventura et al., 2015, p. 278). In another study that was conducted among healthcare professionals it was found that self-efficacy affected improving learning outcomes (Watters et al., 2015, p. 5).

As is seen, self-efficacy has correlations with many organizational variables. This study insists on the effect of empowering leadership on self-efficacy. Empowering behaviors motivate employees to perform tasks effectively and encourage them to fulfill their goals and roles (Raub and Robert, 2010, p. 1747). Empowering behaviors enhance the understanding of tasks and responsibilities for employees, since these behaviors present leaders' beliefs and views about employees' competence and abilities, so they can improve positive psychological commitment to the organization (Lorinkova & Perry, 2014, p. 6). Furthermore, empowering leadership states to constitute a contextual framework of responsibilities, roles, tasks and organizational goals so that employees can motivate to adopt problems or organizational situations, and also this term is beneficial for encouraging employees to accept responsibilities and express their voice as coaching (Gao, Janssen, & Shi, 2011, p. 790). It is assumed that empowering leadership that motivates employees and supports their achievement of roles effectively has an increasing impact on self-efficacy and the following second hypothesis is designed:

Hypothesis 1. Empowering leadership is positively related to self-efficacy.

Many leadership theories that supports to gain employees confidence, hope transparency can promote self-efficacy that generates healthy work environment (Laschinger, Borgogni, Consiglio, & Read, 2015, p. 9). Autonomy supporting behaviors, which are common in many research fields as a concept by referring the same framework, enhance the motivation ways and providing engagement (Reeve, Jang, Carrell, Jeon, & Barch, 2004, p. 147). MacDavitt, Chou and Stone's (2007) study, which was conducted among nurses, showed within the results that autonomy support correlates with many outcomes such as collaboration, job satisfaction, turnover, occupational and patient safety (MacDavitt, Chou, & Stone, 2007, p. 45). Another research, which was conducted among nurses, about autonomy emphasizes that empowering staff as providing them opportunities to self-determination and participating in decision making process and

providing autonomy can enhance occupational skills (Kramer & Schmalenberg, 2003, p. 13). According to the study results of Guay et al. (2006), autonomy support contributes to individuals for enhancing self-efficacy and initiative behaviors about finding out alternatives (Guay, Ratelle, Senécal, Larose, & Deschênes, 2006, p. 248). In the light of that giving opportunity for employees to gain autonomy will support self-efficacy as mentioned in the following designed hypothesis:

Hypothesis 2. Autonomy Support is positively related to self-efficacy.

Self-efficacy beliefs, which are related with role responsibilities, can be enhanced by leaders as increasing confidence in employees' skills and willingness to take responsibility and risk (Ladegard & Gjerde, 2014, p. 636). Self-efficacy, which refers individuals' beliefs about their skills, contributes to response more effectively to negative stereotype, enhances well-being and performance (Hoyt & Blascovich, 2010, pp. 90-99). Development support contributes to individuals how they can adapt to complex situations and find solving ways for their experiences (McCauley et al., 2006, p. 634). The study of Zhang and Chen (2013) addressed that developmental behaviors positively associated with self-determination feelings, that is to say perceived self-efficacy (Zhang & Chen, 2013, p. 536). The review leads us to assume the following hypothesis:

Hypothesis 3. Development Support is positively related to self-efficacy.

1. Research method

2.1. Proposed model

In the first phase of the study, the investigation of validity and reliability of empowering leadership and self-efficacy scale were conducted among healthcare employees in Turkey. In the second phase, the relationships between empowering leadership and the sub- dimension of empowering leadership and self-efficacy were searched. Our proposed model is shown in Fig. 1. A conceptual overview along with the rationale for each of the hypothesized relationships is provided below.

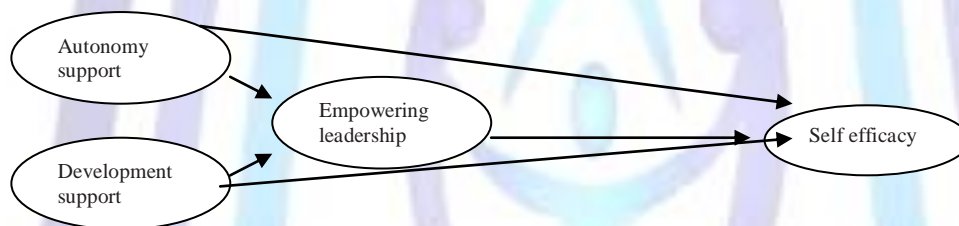


Fig. 1. The research model.

2.1. Data collection

Seven states were determined from seven different regions in Turkey and the study was performed among 550 healthcare employees by designating hospitals randomly. Participants were selected via stratified sampling method as 100 employees from 3 hospitals and 50 employees from 5 hospitals. A great majority of participants are married (n=304, 55.3%), educated associate degree (n=226, 41.1%), work as nurse (n=319, 58%), healthcare professional as physician (n=84, 15.3%), medicine technicians (x-ray technicians, laboratory technicians etc.) (n=66, 12 %) and administrative personnel (n=81, 14.7%) are women (n=343, 62.4), aged between 27 and 35 (n=195, 35.5%), 18-26 (n=182, 33.1%). The average age of the participants is 32.13 (SD = 9.44).

2.2. Measures

Empowering leadership and self-efficacy scale were performed within the study.

2.2.1. Empowering leadership

The scale was obtained from the study of Amundsen and Martinsen (2014) and consisted of two dimensions and 18 items as autonomy support (12 items) and development support (6 items). Cronbach Alpha Coefficient was found as .93 for both dimensions. It was rated with 7 likert point in the original source, however 5 likert point was used within this study (1=never, 5=always).

2.2.2 General self-efficacy

It was consisted of 8 items and obtained from the study of Chen, Gully and Eden (2001) and also rated with 5 likert- point (1=strongly disagree, 5=strongly agree). Chen, Gully and Eden (2001) have addressed that many studies have resulted as reliability scores between .76-89 and they reached Cronbach Alpha coefficient in their study for three dimension as .87, .88 and .85.

3. Analysis and results

3.1. Measurement analysis

Firstly, scales were translated English to Turkish by 10 philologist and experts. Initially, factors of the scales were identified with exploratory factor analysis (EFA) via SPSS 10.0 version and then confirmatory factor analysis (CFA) via LISREL program (Jöreskog & Sörbom, 1993). EFA latent has consisted of subjective decision series such as defining the numbers of variables. Measurement error is accepted as uncorrelated and all hidden variables can affect on any latent variables (Auerbach, & Beckerman, 2011, p.157). Confirmatory factor analysis (CFA) is used for measuring construct validity (Harrington, 2009, p. 3; Tinsley & Brown, 2000). CFA, which is used to obtain unobserved variables from observed variables, is a model of structural equation. Measurement errors are allowed to associate with the effects of latent variable on observed one and the covariance of the latent variable can be predicted (Auerbach, & Beckerman, 2011, p.157).

Construct validity is analyzed with two ways as convergent validity and discriminant validity (Harrington, 2009: 6-7). Convergent validity is calculated via the following Formula: (*AVE: The average variance extracted*):(sum of squared standardized loading/sum of squared standardized loading+sum of indicator measurement error-sum of the variance due to random measurement error in each loading=1 minus the square of each loading) (Fornell and Larcker, 1981; Nusair and Hua; Hair and et al., 1998). AVE coefficient is desired to be over .50. Higher AVE coefficient scores demonstrate a better representation of latent construct through indicators (Lin, Tsao, Hsu, Chang & Lin, 2014). Furthermore, the discriminant validity can be measured by AVE coefficient. AVE coefficient for each item in the model should be higher than correlation squares of all items.

The validity and reliability of scales were analyzed within the study. Item reliability and construct reliability are proposed for reliability. Item reliability is calculated via the squares of factor loads for each question and the results are expected to be higher than .50, also the questions that have a over score than .70 are accepted as excellent (Gulliksen, 1945, p. 79; Wanous & Hudy, 2001, p. 361). Construct reliability (CR) is over than .70 that is accepted as an indicator of reliability (Vinzi, Chin, Henseler, & Wang, 2010). Construct reliability (CR) is a measure of internal consistency that is expressed by Cronbach Alpha. This is calculated via the following Formula: (sum of standardized loading)²/[(sum of standardized loading)²+ sum of indicator measurement error (the sum of the variance due to random measurement error for each loading-1 minus the square of each loading)] (Lavrakas, 2008; Nusair and Hua, 2010; Hair and et al., 1998; Fornell and Larcker, 1981).

Goodness of fit of the scales was investigated in confirmatory factor analysis. Accordingly, χ^2/df ratio, RMSEA value, GFI, NFI, CFI, NNFI and AGFI indexes were researched. (Byrne, 2009; Stevens, 2009; Schermelleh-Engel, Moosbrugger & Müller, 2003, p.31).As the result of analysis, below than 5 of χ^2/df ratio exhibits acceptable goodness-of-fit; if it is below than 2, it will show its goodness- of-fit (Li, Ragu-Nathan and Ragu-Nathan, 2005, p. 629; Şimşek, 2007, p.19).The ratio χ^2/df should be as possible as minimal. Although it has not any certain standard, a model that has a value as the range of 2 is accepted as "good" and 3 is accepted as "acceptable". However, sensitivity should be known in the sample size (Schermelleh-Engel, Moosbrugger & Müller, 2003, p.33).If Root Mean Square Error of Approximation (RMSEA) value is below or equal 0 and 0.05, data fit of model will be excellent (Colom, Rebollo, Palacios, Juan-Espinosa, & Kyllonen, 2004). RMSEA values between .05 and .08 are considered acceptable(Şimşek, 2007,p.19). Models with values above .10represent a poor fit (Auerbach, & Beckerman, 2011, p.158). Comparative fit index (CFI) values above .90 suggest an acceptable model fit (Auerbach, & Beckerman, 2011, p.158).To be over .95 of CFI is an indicator of goodness of fit as good (Şimşek, 2007, p.14). Adjusted Goodness of fit index (AGFI) values above .90 suggest an acceptable model fit, also when it is over .95, then it is indicated that it has a goodness of fit as good (Şimşek, 2007, p. 14).Goodness of fit for AGFI is expressed as good for $.90 \leq AGFI$ and $.90 \leq AGFI \leq 1.00$, acceptable goodness of fit is as $.85 \leq AGFI < .90$ (Schermelleh-Engel, Moosbrugger, Müller, 2003, p. 52).Goodness of fit index (GFI)values above .90 suggest an acceptable model fit also when it is over .95, then it is indicated that it has a goodness of fit as good (Şimşek, 2007, p.14).Normed fit index (NFI) values above .90 suggest an acceptable model fit also when it is over .95, then it is indicated that it has a goodness of fit as good (Şimşek, 2007, p.48).. $.97 \leq NNFI \leq 1.00$ is defined for the value of non-normed fit index (NNFI)as a good fit, $.95 \leq NNFI < .97$ is evaluated as acceptable (Schermelleh-Engel, Moosbrugger, Müller, 2003, p. 52).

Ultimately, mean and standard deviation values of the scale items were calculated. Item-total correlation was examined for the relation between each items and general scale score. High correlation value with total scale score is an indicator of measuring degree of desired item for desired variable and it also demonstrates item reliability. Accordingly, correlation coefficients should not be negative and be higher than 0.25 (Şahin and Gülleroğlu, 2013).Lastly, *t* value in confirmatory factor analysis should be significant (Nejati, 2013).



Table 1. Results of the measurement analysis

Empowering leadership (EL) b	Dimension ^b Autonomy Support (AS) Development Support (DS)	Initial EFA		CFA Model 1	CFA Model 2	CFA Model 3	Item reliability	t-value	Total-item correlation	Mean	Std. Deviation	CR/AVE/
		Factor 1	Factor 2									
1	AS	.147	.783	.55 ^a								
2	AS	.187	.814	.61 ^a								
3	AS	.278	.787	.67 ^a								
5	AS	.409	.614	.69 ^a								AS=.87/.58
6	AS	.512	.541	.74	.72	.73	.53	19.15	.795**	3.37	1.115	
7	AS	.582	.478	.75	.77	.79	.62	21.22	.837**	3.28	1.205	
9	AS	.569	.454	.72	.72	.73	.53	19.14	.796**	3.30	1.189	
10	AS	.552	.371	.65 ^a								
11	AS	.507	.392	.64 ^a								
12	AS	.618	.445	.76	.77	.78	.61	21.06	.824**	3.27	1.194	
14	AS	.659	.353	.74	.76	.76	.58	20.02	.806**	3.19	1.197	
18	AS	.742	.277	.73	.74^c							DS=.88/.60
19	DS	.799	.209	.79	.79	.82	.67	22.99	.852**	3.14	1.214	
20	DS	.793	.168	.78	.79	.82	.67	23.03	.862**	3.13	1.206	
21	DS	.771	.220	.80	.80	.81	.66	22.37	.852**	3.09	1.200	
22	DS	.774	.289	.83	.83	.79	.62	21.74	.833**	3.21	1.205	
23	DS	.795	.265	.85	.84^c							
24	DS	.763	.239	.80	.80	.78	.61	21.01	.837**	3.13	1.259	

Note: Standardized item loadings reported for CFA. $p < .001$ for all loadings.

**Correlation is significant at the 0.01 level (2-tailed)^aItems were below .70, ^cItems were required modification indexes.

^bThe items are as in the original source of Amundsen and Martinsen (2014).

Initially, explanatory factor analysis was performed for the scale KMO: .947, Barlett's test $s 6.449E3$, ($p < .01$). Total variance explained is for both factors are 60.276 % and initial eigenvalues is 10.85. As it is seen, it is determined that the scale has two factors as in the original source.

In the second phase, confirmatory factor analysis was performed for the scale. In initial version of the scale, questions that defined with two dimensions was identified similarly, however goodness-of-fit values could not be reached (Goodness-of-Fit Statistics: $\chi^2/df = 949.65/134 = 7.08$, NFI=.86, NNFI=.86, CFI=.88, AGFI=.79, GFI=.84, RMSEA=.11). Goodness of- Fit vales were not found in CFA Model 1 (Initial Model) and the new version of the scale was performed confirmatory factor

analysis. Goodness of- Fit test did not work in Model 2 (Goodness-of-Fit Statistics: $\chi^2/df = 346.13/53=6.53$, NFI=.93, NNFI=.92, CFI=.94, AGFI=.86, GFI=.90, RMSEA=.10). Finally, in CFA model 3, the scale reached acceptable goodness-of-fit values with two dimensions (Goodness-of-Fit Statistics: Goodness-of-Fit Statistics: $\chi^2/df = 123.93/34=3.64$, NFI=.96, NNFI=.96, CFI=.97, AGFI=.93, GFI=.96, RMSEA=.06).

The coefficients ranged from .73 to .82 and were significant at the .00 level. Finally, *t* value in confirmatory factor analysis was found as significant. Item reliability was found between the range as .53-.67 and over .50. Item-total correlation coefficients of the scale were found as between .53-.67, so as over .25. A new version of empowering leadership scale, which is consisted of two dimensions and 5 questions in each dimension and has reliability and validity in Turkish, was reached as a result of the analysis.

Table 2. Goodness-of-Fit Statistics

Model	$\chi^2/$	df	NFI	NNFI	CFI	AGFI	GFI	RMSEA
Model 1	949.65	134	.86	.86	.88	.79	.84	.11
Model 2	346.13	53	.93	.92	.94	.86	.90	.10
Model 3*	123.93	34	.96	.96	.97	.93	.96	.06

Note. CFI = comparative fit index; GFI = goodness of fit index; AGFI= adjusted goodness of fit index; normed fit index (NFI); non-normed fit index (NNFI); RMSEA = root mean square error of approximation. * model with acceptable fit.

The most valid model is model 3 as seen in Table 2. The ratio χ^2/df 3.645 is accepted as “acceptable” (Schermelel-Engel, Moosbrugger & Müller, 2003, p.33). Normed fit index (NFI) values (.96), goodness of fit index (GFI) values (.96), and Comparative fit index (CFI) (.97) over .95, then it is indicated that it have a goodness of fit as good (Şimşek, 2007, pp.14-48). Non-normed fit index (NNFI) value (.96), $.95 \leq NNFI < .97$ is evaluated as acceptable (Schermelel-Engel, Moosbrugger & Müller, 2003, p. 52). Goodness of fit for AGFI value (.93) is expressed as good for $.90 \leq AGFI$ and $.90 \leq AGFI \leq 1.00$ (Schermelel-Engel, Moosbrugger & Müller, 2003, p. 52). RMSEA values (.06) between .05 and .08 are considered acceptable (Şimşek, 2007, p.19).

Table 3. Results of the measurement analysis

Self efficacy ^b	Initial EFA	CFA Model 1	CFA Model 2	CFA Model 3	CFA Model 4	Item reliability	t-value	Total-item correlation	Mean	Std. Deviation	CR/AVE
											.88/.63
1	.757	.71 ^a									
2	.820	.79	.74	.74	.73	.53	18.87	.825**	3.81	.978	
3	.759	.72 ^a									
4	.807	.78	.78	.81	.83	.69	22.42	.862**	3.83	.940	
5	.808	.78	.82	.83	.83	.69	22.65	.863**	3.82	.935	
6	.822	.80	.80	.79	.78	.61	20.75	.847**	3.92	.939	
7	.792	.75	.75 ^a								
8	.749	.71	.72	.69 ^a							

Note: Standardized item loadings reported for CFA. $p < .001$ for all loadings.

**Correlation is significant at the 0.01 level (2-tailed)^a Items were below .70, ^c Items were required modification indexes.

^bThe items are as in the original source of Chen, Gully, and Eden (2001).

Initially, explanatory factor analysis was performed for the scale KMO: .917, Barlett's test is 2.553E3, ($p < .01$). Total variance explained is for both factors are 62.368% and initial eigenvalues is 4.989. As it is seen, it is determined that the scale has one factor with 8 questions as it is in the original source.

In the second phase, confirmatory factor analysis was performed for the scale. In initial version of the scale, questions that defined with one dimension were identified similarly, however goodness-of-fit values could not be reached (Goodness-of-Fit Statistics: $\chi^2/df = 196.64/20=9.83$, NFI=.93, NNFI=.91, CFI=.94, AGFI=.85, GFI=.92, RMSEA=.12). Goodness of- Fit values were not found in CFA Model 1 (Initial model) and the new version of the scale was performed confirmatory factor analysis. Goodness of- Fit values could not be reached in Model 2 (Goodness-of-Fit Statistics: $\chi^2/df = 73.91/9=8.21$, NFI=.96, NNFI=.94, CFI=.97, AGFI=.90, GFI=.96, RMSEA=.11). Goodness of- Fit worked in Model 3 (Goodness-of-Fit Statistics: $\chi^2/df = 19.62/5=3.94$, NFI=.99, NNFI=.98, CFI=.99, AGFI=.96, GFI=.99, RMSEA=.07). Item reliability should be over .50 and accordingly factor loadings should be over .70 in order to reach that CR coefficient is acceptable (Hair et. al.,

1998; Nusair and Hua, 2010), so Model 4 was developed with a new CFA analysis and this model has better Goodness of-Fit values than Model 3 (Goodness-of-Fit Statistics: $\chi^2/df = 7.17/2=3.58$, NFI=.99, NNFI=.99, CFI=1.00, AGFI=.97, GFI=.99, RMSEA=.06).

The coefficients ranged from .73 to .83 and were significant at the .00 level. Finally, *t* value in confirmatory factor analysis was found as significant. Item reliability was found between the range as .53-.69 and over .50. Item-total correlation coefficients of the scale were found as between .82-.86. A new version of self-efficacy scale, which is consisted of one dimension and 4 questions and has reliability and validity in Turkish, was reached as a result of the analysis.

Table 4. Goodness-of-Fit Statistics

	χ^2	df	NFI	NNFI	CFI	AGFI	GFI	RMSEA
Model 1	196.64	20	.93	.91	.94	.85	.92	.12
Model 2	73.91	9	.96	.94	.97	.90	.96	.11
Model 3	19.62	5	.99	.98	.99	.96	.99	.07
Model 4*	7.17	2	.99	.99	1.00	.97	.99	.06

Note. CFI = comparative fit index; GFI = goodness of fit index; AGFI= adjusted goodness of fit index; normed fit index (NFI); non-normed fit index (NNFI); RMSEA = root mean square error of approximation. * model with acceptable fit.

The most valid model is Model 4, as seen in Table 4. The ratio χ^2/df 3.585 is accepted as “acceptable” (Schermelel-Engel, Moosbrugger & Müller, 2003, p.33). Normed fit index (NFI) values (.99), goodness of fit index (GFI) values (.99) and over .95, then it is indicated that it have a goodness of fit as good (Şimşek, 2007, pp.14-48). Comparative fit index (CFI) values (1.00) ≤ 1.00 . Non-normed fit index (NNFI) value (.99), $.97 \leq NNFI \leq 1.00$ is defined for the value of non-normed fit index (NNFI) as a good fit. Goodness of fit for AGFI value (.97) is expressed as good for $.90 \leq AGFI \leq 1.00$ (Schermelel-Engel, Moosbrugger & Müller, 2003, p.52). RMSEA values (.06) between .05 and .08 are considered acceptable (Şimşek, 2007, p.19).

Table 5. Construct correlations, means and standard deviations

Construct	Mean	Standard deviation	(AS)	(DS)	(EL)	(SE)
Autonomy Support (AS)	3.28	1.004				
Development Support (DS)	3.11	1.091	.689**			
Empowering leadership (EL)	3.28	.976	.873**	.877**		
Self efficacy (SE)	3.93	.845	.175**	.152**	.143**	
Age	32.13	9.438	-.043	-.181**	-.123**	.051

**Correlation is significant at the 0.01 level (2-tailed)

As seen in Table 7, the results of performed correlation analysis, a positive low correlation was discovered between the empowering leadership total score and self efficacy ($r=.14$). A correlation between age and empowering leadership was found as negatively and significantly ($r=-.12$) ($p>.01$). However, it could not be found that self-efficacy is correlated with age as statistically significant ($p<.05$).

Table 8
Standardized parameter estimates, t-values, and model fit statistics

Structural path	Standardized value	tvalue	Hypothesis
Empowering leadership → Self-efficacy	.17	3.91	H1 accepted
Autonomy Support→ Self-efficacy	.28	2.32	H2 accepted
Development Support→ Self-efficacy	.21	2.01	H3 accepted

Goodness-of-Fit Statistics: $\chi^2/df=4.28/1=4.28$, NNFI=.99, NFI=1.00, CFI=1.00, AGFI=.96, GFI=1.00, RMSEA=.07

In Table 8, standardized value and t values are exhibited. Accordingly, t values were found as statistically significant.

3.2. Structural model estimation

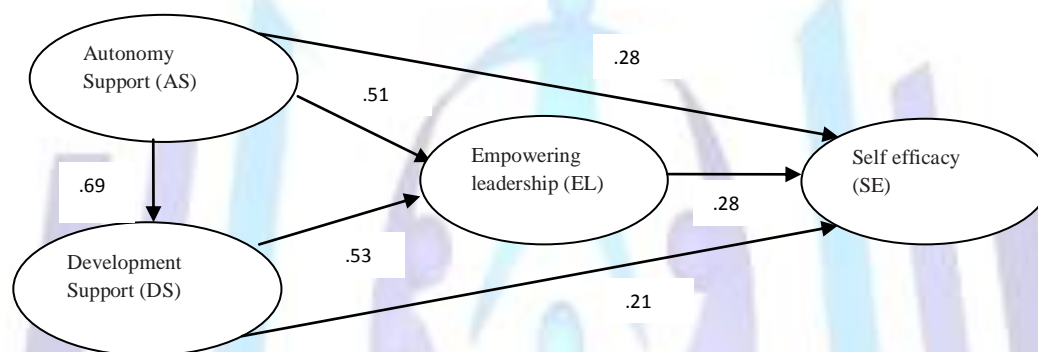


Fig.2. The Result Model

At the result of the path analysis done it has been determined the path coefficient between autonomy support and empowering leadership as .51 ($p<.01$). The path coefficient between development support and empowering leadership as .53 ($p<.01$). The path coefficient between autonomy support and development support as .69 ($p<.01$). In addition to that, in tested model, the path coefficient between empowering leadership and self-efficacy as .28 ($p<.01$). The path coefficient between development support and self-efficacy as .21 ($p<.01$). The path coefficient between autonomy support and self-efficacy as .28 ($p<.01$). It could be stated the model is acceptable because obtained values in the model are yield values of Goodness-of-fit (Goodness-of-Fit Statistics: $\chi^2/df=4.28/1=4.28$, NNFI=.99, NFI=1.00, CFI=1.00, AGFI=.96, GFI=1.00, RMSEA=.07)(See Fig.2).At the result of analysis, Hypothesis 1, Hypothesis 2, and Hypothesis 3 have been accepted.

4. Discussion

As the results of the study, a new version of empowering leadership scale, which is consisted of 2 dimensions and 5 questions in each dimensions and has reliability and validity in Turkish, was reached. Moreover, a new self-efficacy scale that is insisted of one dimension and 4 questions and has reliability and validity in Turkish was obtained within the analyses. Another result of the study shows that empowering leadership as totally, the sub-dimension of empowering leadership, named as autonomy support and development support have a positive impact on self-efficacy.

Power, authority (Dierendonck & Dijkstra, 2012, p. 4), responsibility and control redound on employees as contribute to facts and tasks with their own ideas, decisions and feelings rather than the directions from their boss (Kuo and Lee, 2011, p. 116).

On the other side, as the other main concept of the study, self-efficacy has associated with many health and social outcomes. The psychological, emotional and physical dimensions of self-efficacy can be predicted by health behaviors, life experiences, suicide attempts and addictive behaviors (Majer et al., 2015, p. 44) as supported by the study of Czyn et al. (2014, p. 699) and also physical activity goals as cited from the study of David et al. (2014, p. 573). Furthermore, self-efficacy is expressed as an important predictor of psychological and physical health, intention to quit and also associated with higher job satisfaction and lower burnout (Wang, Hall, & Rahimi, 2015, p. 127), career commitment (Niu, 2010, p. 743), work attendance (Borgogni, Russo, Miraglia, & Vecchione, 2013, p. 129).

Autonomy, which is accepted as an indicator of preventing negative impacts of workload in terms of learning opportunities within the organization (Roca & Gagne, 2008, p. 1585; Ruysseveldt & Dijke, 2011, p. 478), and self-efficacy are associated closely that mentioned in many studies as also an effecting factor on performance (Neve, Devos, & Tuytens, 2015, p. 37). Self-efficacy leads the understanding process of pessimism and confusion (Garcia, Restubog, Bordia, Bordia, & Roxas, 2015, p. 11). Self-efficacy is associated with social support (Garcia et al., 2015, p. 15). Moreover, self-



efficacy enhances optimism, because it is beneficial for providing confidence in order to achieving goals, tasks and making decisions (Garcia et al., 2015, p. 16). As an example of health sector, nurses had a sense to enhance their activities, responsibilities, self-image and job satisfaction, as mentioned in the study of Yakubovich, Carmel, Zwanger and Zaltzman (1989) (Yakubovich, Carmel, Zwanger, & Zaltzman, 1989, p. 1315). Self-determination is assumed as an effecting factor on job demands, job control and personal accomplishment (Fernet, Guay, & Senecal, 2004, p. 52). Parker, Jimmieson and Amiot (2010) highlighted similar results in their study that was conducted employees of a health insurance organization, self-determination supports job control, greater engagement and lower health complaints (Parker, Jimmieson, & Amiot, 2010, p. 52). Conversely, the main reason of empowering barriers among healthcare employees can be classified as lack of resources and the structure of practical and clinical implementations (Scambler, Newton, Sinclair, & Asimakopoulou, 2012, p. e18), as considering the structure of health sector.

Followers can perceive empowering leadership as laissez-faire leadership because this type of leadership draws employees an uncertain and flexible picture within the organization, so employees can perceive this work environment as less effective (Humborstad & Giessner, 2015, p. 2). It would be better to explain the difference of empowering leaders as that they guide for employees by alternative ways such as face-to-face communication, participation of employees in decision making process, valuing and increasing willingness to express their opinions and views and providing reciprocal trusty behaviors within their relationship (Gao et al., 2011, p. 788), better work (Welters, Mitchell, & Muysken, 2014, p. 34), sharing information and social support among healthcare employees (Bartlett & Coulson, 2011, p. 117).

5. Future research

There are many studies showing that supporting right of choice and participation in decision process of employees are central point for gaining better organizational outcomes in the literature. Sustainable development, empowering leadership behaviors to employees, supporting participative climate would enhance job productivity of healthcare employees (Chang & Liu, 2008, p. 1446). Besides, the studies related with empowering and especially developmental support tools and the degree of use these implementations can be contribute to leadership review. Additionally, the studies should be conducted as designing a model with psychological and emotional variables in terms of supporting autonomy of employees and self-efficacy. It is also suggested that researchers should focus on the effects and relationship between communication between patients and healthcare employees and self- efficacy and empowering leadership behaviors.

Moreover, these concepts can result more clearly and presented job requirements with research models separately that insisted of not only hospitals but also employees and executives, who work in clinical departments such as intensive care units, operation rooms etc. by considering different management structure and legal implementation of health sector.

Higher autonomy support, broader opportunities for development and efforts for self-efficacy of healthcare employees can be a key role to prevent malpractice, which is one of the main problems of healthcare service quality and patient safety, therefore these concepts might be investigated with this perspective, as an outcome of health employees and institutions.

References

1. Alessandri, G., Vecchione, M., & Caprara, G. V. (2015). Assessment of Regulatory Emotional Self-Efficacy Beliefs: A Review of the Status of the Art and Some Suggestions to Move the Field Forward. *Journal of Psychoeducational Assessment*, 33(1), 24-32. doi: Doi 10.1177/0734282914550382
2. Amundsen, S., & Martinsen, Ø. L. (2015). Linking Empowering Leadership to Job Satisfaction, Work Effort, and Creativity: The Role of Self-Leadership and Psychological Empowerment. *Journal of Leadership & Organizational Studies*, 1-20. doi: DOI: 10.1177/1548051814565819
3. Arnold, J. A., Arad, S., Rhoades, J. A., & Drasgow, F. (2000). The empowering leadership questionnaire: the construction and validation of a new scale for measuring leader behaviors. *Journal of Organizational Behavior*, 21(3), 249-269. doi: Doi 10.1002/(Sici)1099-1379(200005)21:3<249::Aid-Job10>3.0.Co;2-#
4. Aube, C., Rousseau, V., & Morin, E. M. (2007). Perceived Organizational Support and Organizational Commitment: The Moderating Effect of Locus of Control and Work Autonomy. *Journal of Managerial Psychology*, 22(5), 479-495.
5. Auh, S., Menguc, B., & Jung, Y. S. (2014). Unpacking the relationship between empowering leadership and service-oriented citizenship behaviors: a multilevel approach. *Journal of the Academy of Marketing Science*, 42(5), 558-579. doi: DOI 10.1007/s11747-014-0370-0
6. Carmeli, A., Schaubroeck, J., & Tishler, A. (2011). How CEO Empowering Leadership Shapes Top Management Team Processes: Implications for Firm Performance. *The Leadership Quarterly*, 22, 399-411.
7. Chang, Y. S., & Edwards, J. K. (2015). Examining the Relationships Among Self-Efficacy, Coping, and Job Satisfaction Using Social Career Cognitive Theory: An SEM Analysis. *Journal of Career Assessment*, 23(1), 35-47. doi: Doi 10.1177/1069072714523083
8. Colom, R., Rebollo, I., Palacios, A., Juan-Espinosa, M., & Kyllonen, P. C. (2004). Working Memory is (almost) Perfectly Predicted by g. *Intelligence*, 32(3), 277-296.
9. Czyz, E. K., Bohnert, A. S. B., King, C. A., Price, A. M., Kleinberg, F., & Ilgen, M. A. (2014). Self-Efficacy to Avoid Suicidal Action: Factor Structure and Convergent Validity among Adults in Substance Use Disorder Treatment. *Suicide and Life-Threatening Behavior*, 44(6), 698-709. doi: Doi 10.1111/Sltb.12101
10. Çekmecelioğlu, H. G., & Günsel, A. (2011). Promoting Creativity Among Employees Of Mature Industries: The Effects Of Autonomy And Role Stress On Creative Behaviors And Job Performance. *Procedia Social and Behavioral Sciences*, 24, 889-895.



11. David, P., Pennell, M. L., Foraker, R. E., Katz, M. L., Buckworth, J., & Paskett, E. D. (2014). How Are Previous Physical Activity and Self-Efficacy Related to Future Physical Activity and Self-Efficacy? *Health Education & Behavior, 41*(6), 573-576. doi: Doi 10.1177/1090198114543004
12. Drago-Severson, E., & Blum-DeStefano, J. (2014). Leadership for Transformational Learning: A Developmental Approach to Supporting Leaders' Thinking and Practice. *Journal of Research on Leadership Education, 9*(2), 113-141.
13. Du, H. F., Li, X. M., Lin, D. H., & Tam, C. C. (2015). Collectivistic Orientation, Acculturative Stress, Cultural Self-Efficacy, and Depression: A Longitudinal Study Among Chinese Internal Migrants. *Community Mental Health Journal, 51*(2), 239-248. doi: DOI 10.1007/s10597-014-9785-9
14. Ekholm, E., Zumbunn, S., & Conklin, S. (2015). The relation of college student self-efficacy toward writing and writing self-regulation aptitude: writing feedback perceptions as a mediating variable. *Teaching in Higher Education, 20*(2), 197-207. doi: Doi 10.1080/13562517.2014.974026
15. Ernsting, A., Knoll, N., Schneider, M., & Schwarzer, R. (2015). The enabling effect of social support on vaccination uptake via self-efficacy and planning. *Psychology Health & Medicine, 20*(2), 239-246. doi: Doi 10.1080/13548506.2014.920957
16. Fong, K. H., & Snape, E. (2015). Empowering Leadership, Psychological Empowerment and Employee Outcomes: Testing a Multi-level Mediating Model. *British Journal of Management, 26*(1), 126-138. doi: Doi 10.1111/1467-8551.12048
17. Gagné, M., Koestner, R., & Zuckerman, M. (2006). Facilitating Acceptance of Organizational Change: The Importance of Self-Determination. *Journal of Applied Social Psychology, 30*(9), 1843-1852.
18. Gao, L., Janssen, O., & Shi, K. (2011). Leader Trust and Employee Voice: The Moderating Role of Empowering Leader Behaviors. *The Leadership Quarterly, 22*, 787-798.
19. Garcia, P. R. J. M., Restubog, S. L. D., Bordia, P., Bordia, S., & Roxas, R. E. O. (2015). Career Optimism: The Roles of Contextual Support and Career Decision-Making Self-Efficacy. *Journal of Vocational Behavior*(88), 10-18.
20. Gilley, J. W., Shelton, P. M., & Gilley, A. (2011). Developmental Leadership: A New Perspective for Human Resource Development. *Advances in Developing Human Resources, 13*(3), 386-405.
21. Gulliksen, H. (1945). The Relation of Item Difficulty and Inter-Item Correlation to Test Variance and Reliability. *Psychometrika, 10*(2), 79-91.
22. Hakimi, N. (2010). *Leader Empowering Behaviour: The Leader's Perspective*. Rotterdam: Erasmus University.
23. Hallak, R., Assaker, G., & Lee, C. (2015). Tourism Entrepreneurship Performance: The Effects of Place Identity, Self-Efficacy, and Gender. *Journal of Travel Research, 54*(1), 36-51. doi: Doi 10.1177/0047287513513170
24. Harris, T. B., Li, N., Boswell, W. R., Zhang, X. A., & Xie, Z. T. (2014). Getting What's New from Newcomers: Empowering Leadership, Creativity, and Adjustment in the Socialization Context. *Personnel Psychology, 67*(3), 567-604. doi: Doi 10.1111/Peps.12053
25. Heath, C. L., Curtis, D. F., Fan, W. H., & McPherson, R. (2015). The Association Between Parenting Stress, Parenting Self-Efficacy, and the Clinical Significance of Child ADHD Symptom Change Following Behavior Therapy. *Child Psychiatry & Human Development, 46*(1), 118-129. doi: DOI 10.1007/s10578-014-0458-2
26. Ho, J., & Nesbit, P. L. (2014). Self-Leadership in a Chinese Context: Work Outcomes and the Moderating Role of Job Autonomy. *Group & Organization Management, 39*(4), 389-415.
27. Hon, A. H. Y., & Chan, W. W. H. (2013). Team Creative Performance: The Roles of Empowering Leadership, Creative-Related Motivation, and Task Interdependence. *Cornell Hospitality Quarterly, 54*(2), 199-210. doi: Doi 10.1177/1938965512455859
28. Hoyt, C. L., & Blascovich, J. (2010). The Role of Leadership Self-Efficacy and Stereotype Activation on Cardiovascular, Behavioral and Self-Report Responses in the Leadership Domain. *The Leadership Quarterly, 21*, 89-103.
29. Humborstad, S. I. W., & Giessner, S. R. (2015). The Thin Line Between Empowering and Laissez- Faire Leadership: An Expectancy-Match Perspective. *Journal of Management, 1*-27.
30. Isik, E. (2014). Effects of a Brief Interest Inventory Intervention on Career Decision Self-Efficacy. *Australian Journal of Guidance and Counselling, 24*(2), 215-226. doi: Doi 10.1017/Jgc.2014.13
31. Johnson, J. R. (1999). Leadership and Self-Determination. *Focus on Autism and Other Developmental Disabilities, 14*(1), 4-16.
32. Jönsson, S., Muhonen, T., Denti, L., & Chen, K. (2015). Social Climate and Job Control as Mediators between Empowering Leadership and Learning from a Cross-Cultural Perspective. *International Journal of Cross Cultural Management, 1*-15. doi: 10.1177/1470595815572170
33. Keyes, M. W., Hanley-Maxwell, C., & Capper, C. A. (1999). "Spirituality? It's the core of my leadership": Empowering leadership in an inclusive elementary school. *Educational Administration Quarterly, 35*(2), 203-237. doi: Doi 10.1177/00131619921968527
34. Keyes, M. W., Hanley-Maxwell, C., & Capper, C. A. (1999). "Spirituality? It's the Core of My Leadership": Empowering Leadership in an Inclusive Elementary School. *Educational Administration Quarterly, 35*(2), 203-237.
35. Khani, R., & Mirzaee, A. (2015). How do self-efficacy, contextual variables and stressors affect teacher burnout in an EFL context? *Educational Psychology, 35*(1), 93-109. doi: Doi 10.1080/01443410.2014.981510
36. Kinnafick, F.-E., Thøgersen-Ntoumani, C., Duda, J. L., & Taylor, I. (2014). Sources of Autonomy Support, Subjective Vitality and Physical Activity Behaviour Associated with Participation in a Lunchtime Walking Intervention for Physically Inactive Adults. *Psychology of Sport and Exercise*(15).



37. Kuo, R.-Z., & Lee, G.-G. (2015). Knowledge Management System Adoption: Exploring the Effects of Empowering Leadership, Task-Technology Fit and Compatibility. *Behaviour & Information Technology*, 30(1), 113–129.
38. Kuo, R. Z., & Lee, G. G. (2011). Knowledge management system adoption: exploring the effects of empowering leadership, task-technology fit and compatibility. *Behaviour & Information Technology*, 30(1), 113-129. doi: Pii 927635867
39. Doi 10.1080/0144929x.2010.516018
40. Ladegard, G., & Gjerde, S. (2014). Leadership Coaching, Leader Role-Efficacy, and Trust in Subordinates. A Mixed Methods Study Assessing Leadership Coaching as a Leadership Development Tool. *The Leadership Quarterly*, 25, 631–646.
41. Lavrakas, P. J. (2008). *Encyclopedia of Survey Research Methods*. USA: Sage Publications, Inc. .
42. Lee, S. A., Lee, H. S., Song, H. S., & Kim, S. G. (2015). The relationship between attachment and career maturity: The mediating role of self-efficacy. *International Social Work*, 58(1), 153-164. doi: Doi 10.1177/0020872812456053
43. Lee, W. (2008). ELP: Empowering the leadership in professional development communities. *European Early Childhood Education Research Journal*, 16(1), 95-106. doi: Doi 10.1080/13502930801897087
44. Li, N., Chiaburu, D. S., & Kirkman, B. L. (2014). Cross-Level Influences of Empowering Leadership on Citizenship Behavior: Organizational Support Climate as a Double- Edged Sword. *Journal of Management*, 20(10), 1-27.
45. Lim, B. S. C., & Wang, C. K. J. (2009). Perceived Autonomy Support, Behavioural Regulations in Physical Education and Physical Activity Intention. *Psychology of Sport and Exercise*, 10, 52–60.
46. Lin, T. C., Liang, J. C., & Tsai, C. C. (2015). Conceptions of Memorizing and Understanding in Learning, and Self-Efficacy Held by University Biology Majors. *International Journal of Science Education*, 37(3), 446-468. doi: Doi 10.1080/09500693.2014.992057
47. Lin, W.-T., Tsao, L.-C., Hsu, G.-Y., Chang, H.-L., & Lin, C.-Y. (2014). *An Analysis in Influence of Biotechnology Industry on Purchase Intention of Infant Nutrient Foods: An Example of Edible Lactobacillus*. Paper presented at the International Conference on Humanity and Social Science, China.
48. Liu, J., Fu, P. P., & Zhang, T. T. (2008). A Moderated-Mediation Model of Empowering Leadership-OCB Link. *2008 International Conference on Management Science & Engineering (15th), Vols I and II, Conference Proceedings*, 939-944. doi: Doi 10.1109/Icmse.2008.4669025
49. Lorinkova, N. M., & Perry, S. J. (2014). When Is Empowerment Effective? The Role of Leader-Leader Exchange in Empowering Leadership, Cynicism, and Time Theft. *Journal of Management*, 20(10), 1–24.
50. Madathil, R., Heck, N. C., & Schulderg, D. (2014). Burnout in Psychiatric Nursing: Examining the Interplay of Autonomy, Leadership Style, and Depressive Symptoms. *Archives of Psychiatric Nursing*, 28, 160-166.
51. Majer, J. M., Glantsman, O., Palmer, J. S., & Jason, L. A. (2015). Predictors of Abstinence Self-Efficacy: Examining the Role of HIV-Risk Sexual Behavior. *Journal of Social Service Research*, 41(1), 39-48. doi: Doi 10.1080/01488376.2014.935559
52. Martínez-Córcoles, M., Gracia, F. J., Tomás, I., Peiró, J. M., & Schöbel, M. (2013). Empowering Team Leadership and Safety Performance in Nuclear Power Plants: A Multilevel Approach. *Safety Science*, 51, 293–301.
53. Martínez-Córcoles, M., Schöbel, M., Gracia, F. J., Tomás, I., & Peiró, J. M. (2012). Linking Empowering Leadership to Safety Participation in Nuclear Power Plants: A Structural Equation Model. *Journal of Safety Research*, 43, 215–221.
54. McCauley, C. D., Drath, W. H., Palus, C. J., O'Connor, P. M. G., & Baker, B. A. (2006). The Use of Constructive-Developmental Theory to Advance the Understanding of Leadership. *The Leadership Quarterly*, 17, 634–653.
55. Men, L. R. (2010). *Measuring the Impact of Leadership Style and Employee Empowerment on Perceived Organizational Reputation*. (Doctoral Degree), University of Miami, Brunson Drive.
56. Mierlo, H. v., Rutte, C. G., Vermunt, J. K., Kompier, M. A. J., & Doorewaard, J. A. M. C. (2006). Individual Autonomy in Work Teams: The Role of Team Autonomy, Self-Efficacy, and Social Support. *European Journal of Work and Organizational Psychology*, 15(3), 281-299.
57. Mulvaney, M. A. (2014). Leave Programs/Time Off and Work-Stress Family Employee Benefits Programs, Organizational Commitment, and Self-Efficacy Among Municipal Employees. *Public Personnel Management*, 43(4), 459-489. doi: Doi 10.1177/0091026014529661
58. Mystakidou, K., Parpa, E., Tsilika, E., Panagiotou, I., Theodorakis, P. N., Galanos, A., & Gouliamos, A. (2015). Self-Efficacy and Its Relationship to Posttraumatic Stress Symptoms and Posttraumatic Growth in Cancer Patients. *Journal of Loss & Trauma*, 20(2), 160-170. doi: Doi 10.1080/15325024.2013.838892
59. Nejati, M. (2013). *Frontiers of Business, Management and Economics: An Interdisciplinary Collection of Managerial Research Findings and Breakthroughs*. Florida: Universal Publishers.
60. Neve, D. D., Devos, G., & Tuytens, M. (2015). The Importance of Job Resources and Self-Efficacy for Beginning Teachers' Professional Learning in Differentiated Instruction. *Teaching and Teacher Education*(47), 30-41.
61. Oostlander, J., Güntert, S. T., Schie, S. v., & Wehner, T. (2014). Leadership and Volunteer Motivation: A Study Using Self-Determination Theory. *Nonprofit and Voluntary Sector Quarterly*, 43(5), 869–889.
62. Peguero, A. A., & Shaffer, K. A. (2015). Academic Self-Efficacy, Dropping Out, and the Significance of Inequality. *Sociological Spectrum*, 35(1), 46-64. doi: Doi 10.1080/02732173.2014.978428
63. Qualter, P., Pool, L. D., Gardner, K. J., Ashley-Kot, S., Wise, A., & Wols, A. (2015). The Emotional Self-Efficacy Scale: Adaptation and Validation for Young Adolescents. *Journal of Psychoeducational Assessment*, 33(1), 33-45. doi: Doi 10.1177/0734282914550383



64. Raub, S., & Robert, C. (2010). Differential effects of empowering leadership on in-role and extra-role employee behaviors: Exploring the role of psychological empowerment and power values. *Human Relations*, 63(11), 1743-1770. doi: Doi 10.1177/0018726710365092
65. Reitzug, U. C. (1994). A Case Study of Empowering Principal Behavior *American Educational Research Journal*, 31(2), 283-307.
66. Roca, J. C., & Gagne, M. n. (2008). Understanding e-Learning Continuance Intention in the Workplace: A Self-Determination Theory Perspective. *Computers in Human Behavior*, 24, 1585-1604.
67. Rowland, D. L., Adamski, B. A., Neal, C. J., Myers, A. L., & Burnett, A. L. (2015). Self-Efficacy as a Relevant Construct in Understanding Sexual Response and Dysfunction. *Journal of Sex & Marital Therapy*, 41(1), 60-71. doi: Doi 10.1080/0092623x.2013.811453
68. Ruysseveldt, J. v., & Dijke, M. v. (2011). When are Workload and Workplace Learning Opportunities Related in a Curvilinear Manner? The Moderating Role of Autonomy. *Journal of Vocational Behavior*, 79, 470-483.
69. Sabiston, J. A., & Laschinger, H. K. S. (1995). Staff Nurse Work Empowerment and Perceived Autonomy: Testing Rantner's Theory of Structural Power in Organizations. *Journal of Nursing Administration*, 25(9), 42-50.
70. Scambler, S., Newton, P., Sinclair, A. J., & Asimakopoulou, K. (2012). Barriers and Opportunities of Empowerment as Applied in Diabetes Settings: A Focus on Health Care Professionals' Experiences. *Diabetes Research and Clinical Practice*, 97, e18- e22.
71. Schwarzer, R., Antoniuk, A., & Gholami, M. (2015). A brief intervention changing oral self-care, self-efficacy, and self-monitoring. *British Journal of Health Psychology*, 20(1), 56-67. doi: Doi 10.1111/Bjhp.12091
72. Sharma, P. N., & Kirkman, B. L. (2015). Leveraging Leaders: A Literature Review and Future Lines of Inquiry for Empowering Leadership Research. *Group & Organization Management*, 40(2), 193-237.
73. Shih, S.-S. (2008). The Relation of Self-Determination and Achievement Goals to Taiwanese Eighth Graders' Behavioral and Emotional Engagement in Schoolwork. *The Elementary School Journal*, 108(4), 313-334.
74. Shih, S.-S. (2012). The Effects of Autonomy Support versus Psychological Control and Work Engagement versus Academic Burnout on Adolescents' Use of Avoidance Strategies. *School Psychology International*, 34(3), 330-347.
75. Stefanou, C., Stolk, J. D., Prince, M., Chen, J. C., & Lord, S. M. (2013). Self-Regulation and Autonomy in Problem- and Project-based Learning Environments. *Active Learning in Higher Education*, 14(2), 109-122.
76. Strang, S. E., & Kuhnert, K. W. (2009). Personality and Leadership Developmental Levels as Predictors of Leader Performance. *The Leadership Quarterly*, 20, 421-433.
77. Tekleab, A. G., Sims, H. P., Yun, S., Tesluk, P. E., & Cox, J. (2008). Are We On the Same Page?: Effects of Self-Awareness of Empowering and Transformational Leadership. *Journal of Leadership & Organizational Studies*, 14(3), 185-201.
78. Tinsley, H. E. A., & Brown, S. D. (2000). *Handbook of Applied Multivariate Statistics and Mathematical Modeling* USA: Academic Press.
79. Tong, D. Y. K., Rasiah, D., Tong, X. F., & Lai, K. P. (2015). Leadership Empowerment Behaviour on Safety Officer and Safety Teamwork in Manufacturing Industry. *Safety Science*(72), 190-198.
80. Tuckey, M. R., Bakker, A. B., & Dollard, M. F. (2012). Empowering Leaders Optimize Working Conditions for Engagement: A Multilevel Study. *Journal of Occupational Health Psychology*, 17(1), 15-27.
81. van Dierendonck, D., & Dijkstra, M. (2012). The Role of the Follower in the Relationship Between Empowering Leadership and Empowerment: A Longitudinal Investigation. *Journal of Applied Social Psychology*, 42, E1-E20. doi: DOI 10.1111/j.1559-1816.2012.01022.x
82. Vecchio, R. P., Justin, J. E., & Pearce, C. L. (2010). Empowering Leadership: An Examination of Mediating Mechanisms within a Hierarchical Structure. *The Leadership Quarterly*, 21, 530-542.
83. Ventura, M., Salanova, M., & Llorens, S. (2015). Professional Self-Efficacy as a Predictor of Burnout and Engagement: The Role of Challenge and Hindrance Demands. *Journal of Psychology*, 149(3), 277-302. doi: Doi 10.1080/00223980.2013.876380
84. Verevkina, N., Shi, Y. F., Fuentes-Caceres, V. A., & Scanlon, D. P. (2014). Attrition in Chronic Disease Self-Management Programs and Self-Efficacy at Enrollment. *Health Education & Behavior*, 41(6), 590-598. doi: Doi 10.1177/1090198114529590
85. Vinzi, V. E., Chin, W. W., Henseler, J., & Wang, H. (2010). *Handbook of Partial Least Squares: Concepts, Methods and Applications* Berlin: Springer- Verlag Berlin Heidelberg.
86. Wang, D. L., Xu, L. L., & Chan, H. C. (2015). Understanding the continuance use of social network sites: a computer self-efficacy perspective. *Behaviour & Information Technology*, 34(2), 204-216. doi: Doi 10.1080/0144929x.2014.952778
87. Wanous, J. P., & Hudy, M. J. (2001). Single-Item Reliability: A Replication and Extension. *Organizational Research Methods*, 4(4), 361-375.
88. Watters, C., Reedy, G., Ross, A., Morgan, N. J., Handslip, R., & Jaye, P. (2015). Does interprofessional simulation increase self-efficacy: a comparative study. *Bmj Open*, 5(1). doi: ARTN e005472
89. DOI 10.1136/bmjopen-2014-005472
90. Yu, C. H., Parsons, J. A., Mamdani, M., Lebovic, G., Hall, S., Newton, D., . . . Straus, S. E. (2014). A web-based intervention to support self-management of patients with type 2 diabetes mellitus: effect on self-efficacy, self-care and diabetes distress. *Bmc Medical Informatics and Decision Making*, 14. doi: Artn 117
91. Doi 10.1186/S12911-014-0117-3
92. Zhang, Y., & Chen, C. C. (2013). Developmental Leadership and Organizational Citizenship Behavior: Mediating Effects of Self-Determination, Supervisor Identification, and Organizational Identification. *The Leadership Quarterly*, 24, 534-543.

