

Turkish Version of the Principals' Sense of Efficacy Scale: Validity and Reliability Study¹

Ayşe Negiş IŞIK *
Deniz DERİNBAY **

Suggested Citation:

Negiş-Işık, A., & Derinbay, D. (2015). Principals' sense of efficacy scale: Validity and reliability study. *Eurasian Journal of Educational Research*, 60, 1-16
Doi: 10.14689/ejer.2015.60.1

Abstract

Problem Statement: Principals are known as important actors in effective schools. So it is important to know which variables influence principals' success. One of these predictors can be self-efficacy. However, there is very few research about principals' sense of efficacy.

Purpose of the Study: The purpose of this research was to test the psychometric properties of the Turkish version of the Principal Sense of Efficacy Scale (PSES-T).

Method: Confirmatory and Exploratory factor analysis were conducted in order to determine the factor structure of the scale. Two independent samples of school administrators were used for this analysis. The relationship between social support and PSES-T were also examined in order to test the concurrent validity of the scale. Finally, internal consistency of scale was tested by using Cronbach alpha.

Findings: Confirmatory factor analyses (CFA) were performed using maximum likelihood estimations, in order to assess the structural validity of the Turkish version of PSES. The model indices were $\chi^2/df= 2,80$, CFI=.873, TLI=.87, RMSEA= .100, SRMR=.064, suggesting an unacceptable fit of the model to the data. Concluding that 3 factor 18-item PSES did not fit the data obtained from a Turkish sample, an exploratory factor analysis (EFA) was conducted to further explore the factor structure of the 18-item PSES that better represented the sample data. EFA results showed strong

¹ The summary of this paper was presented at the International Counseling and Education conference in Istanbul, 3-5 May, 2012

* Corresponding author: Assist. Prof. Dr., Mevlana University, Faculty of Education, Department of Educational Sciences, Konya, Turkey, anegis@mevlana.edu.tr

**Res. Assist., Necmettin Erbakan University, Faculty of Education, Department of Educational Sciences, dderinbay@konya.edu.tr

evidence for a single factor structure of scale. Total variance explained by a single factor was 41% and factor loadings ranged from .50-.74 ($M=.64$). Based on the results of the EFA, the single factor model with 18 items was tested on a second sample by using CFA with the maximum likelihood method. Results indicated that single factor PSES met goodness-of-fit criteria; $\chi^2/df= 1.6$, CFI=.95, TLI= .94, RMSEA= .06, and SRMR=.04. As to the reliability results, Cronbach's Alpha was calculated as .94 for the whole scale. Also, low to moderate correlations were found between social support, and PSES was evidence for concurrent validity of scale.

Conclusion and Recommendations: The overall findings of the present study provide evidence for the validity and reliability of the PSES with a Turkish sample. Validation and reliability studies of the PSES within different cultural contexts and samples are crucial for the generalizability of the scale. The current study is important in terms of bringing this scale into Turkish literature.

Keywords: Principals' sense of efficacy, self-efficacy, validity, reliability.

Introduction

Principals are known as important actors in effective schools. So it is important to know which variables influence principals' success. One of these predictors can be self-efficacy. Previous research suggests that there is a relationship between principals' self-efficacy and effectiveness (Anderson, Krajewski, Goffin, & Jackson, 2008; Judge & Bono, 2001; McCullers & Bozeman, 2010; Ramchunder & Martins, 2014). Given the importance of better understanding self-efficacy, further research is needed in different samples and cultures. Since valid and reliable measures are prerequisites of doing culturally responsive research, the aim of this study was to examine psychometric qualities of PSES in a Turkish sample.

Self-Efficacy

Self-efficacy is embedded within social cognitive theory and developed its roots from the social learning theory. Bandura (1986) indicates that self-efficacy is a concept resulting from the interaction of behaviors, environmental variables, and personal variables.

Self-efficacy is defined as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (Bandura, 1994, p.1), "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p.3), or "beliefs in one's abilities to mobilize the motivation, cognitive resources, and courses of action needed to meet situational demands" (Wood & Bandura, 1989, p.48). Self-efficacy is commonly used as a domain-specific construct rather than being a general trait (Bandura, 1986). Self-efficacy can be generalized for similar situations; however,

it can be low in another field while one's self-efficacy is high in a certain field (Bandura, 1982).

According to Bandura (2012) there are four factors that determine self-efficacy: (1) mastery experiences, (2) vicarious experiences, (3) verbal persuasion, and (4) physiological arousal. Mastery experience has been identified as the most powerful variable of self-efficacy. Mastery experiences are stated as prior experiences concerning a given task (Milner & Hoy, 2003; Tschannen-Moran & Gareis, 2007). While successful experiences increase one's self-efficacy beliefs, unsuccessful experiences negatively affect these beliefs. Vicarious experiences result from learning by modeling and observing others (Tschannen-Moran & Gareis, 2007). Bandura (1994) explains that people observe others who are similar to them and who are successful in their jobs; in this regard people enhance a belief that they can be successful, too. Verbal persuasion is a kind of feedback concerning one's success in a given task (Bandura, 1986). Bower and Hilgard (1981) state that people who are persuaded about their personal skills put forth more effort, proceed in their efforts even if they make mistakes, and take responsibility when they face with problems. Individuals often associate their stress and tension with their lack of abilities (Milner & Hoy, 2003).

Bandura (1997, p.3) stated that self-efficacy influences: (1) which behavior people choose to pursue, (2) how much effort they spend, (3) how long they will persevere in the face of obstacles and failures, (4) their resilience to difficulties, (5) whether their thought patterns are self-hindering or self-aiding, and (6) how much stress or anxiety they experience in coping with environmental demands. Similarly, Gist and Mitchell (1992) propose that self-efficacy is a very important motivational structure that affects personal preferences, goals, emotional reactions, effort, coping, and resistance.

Within educational literature there are many studies that show teacher and student self-efficacy beliefs can be associated with learning and teaching. Studies on students' self-efficacy indicate that: self-efficacy has a role in enhancing the motivation to learn, students with high self-efficacy endeavor more to succeed, and there is a strong relationship between self-efficacy and success (Altun & Aykoc, 2009; Işinsal, 2002; Pajares, 1996).

There are many studies intended to determine teachers' and teacher candidates' self-efficacy in different areas such as use of computer (Orhan, 2005), science teaching (Hamurcu, 2006; Yalçın, 2011), maths teaching, (Dede, 2008), and teachers' self-efficacy beliefs (Babaoğlu & Korkut, 2010; Külekci, 2011). Furthermore, there are studies that investigate the relationship between teachers' self-efficacy and student success (Allinder, 1995; Bandura, 1993; Copraro, Barbaranelli, Steca, & Malone, 2006; Gaddard, Hoy, & Hoy, 2000; Schunk, 1989; Tschannen-Moran & Barr, 2004). These studies indicate that teachers who have strong self-efficacy beliefs are more successful in increasing students' success and motivation. As a result of Bandura's (1993) research, being taught by teachers with low self-efficacy decreases students' self-efficacy and performance expectations.

Principal self-efficacy

The principal is regarded as a key agent, initiating change by raising the level of expectations for both teachers and students (Tschannen-Moran & Gareis, 2004). Leadership self-efficacy is important because it affects followers' attitudes and performance (Chemers, Watson, & May, 2000; Lehman, 2007). Principal self-efficacy can be defined as a kind of leadership self-efficacy that is related to the level of self-confidence, ability, and skill to act as a leader among other people (Hannah, Avolio, Luthans, & Harms, 2008). Principal self-efficacy is a perception related to planning, organizing and executing tasks and relationships with other people and organizations (Federici & Skaalvik, 2011).

Especially within the last decade, principal self-efficacy has emerged as a significant issue and is of interest to researchers after the development of instruments assessing this subject (e.g., Principals Self-Efficacy Scale, Dimmock & Hattie, 1996). Of these instruments, the Principal Sense of Efficacy Scale (PSES; Tschannen-Moran & Gareis, 2004) has received much attention (Brown, 2010; Lockard, 2013; McCullers & Bozeman, 2010; Moak, 2010; Versland, 2009; Watts, Kolsun, Cline, & Williams, 2011; Williams, 2012). Validation and reliability studies of the PSES within different cultural contexts and samples are crucial for the generalizability of the scale. Therefore, the aim of the present study was to examine psychometric qualities of PSES in a Turkish sample.

Method

The aim of this study is to conduct validity and reliability analysis of the Turkish version of the Principal Sense of Efficacy Scale (PSES-T)

Participants

Two independent samples of school administrators from Turkey were used for this study: (a) Exploratory Factor Analysis (EFA) sample, and (b) Confirmatory Factor Analysis (CFA) sample. The first sample contained 150 school principals (11% women, and 89% men). Their principal seniority ranged from 1 to 33 years ($M = 9.8$, $SD = 7.9$). All participants were either principals (60%) or assistant principals (40%). The second sample contained 150 school principals (10% women, and 90% men). Principal seniority ranged from 1 to 37 years ($M = 8.6$, $SD = 7.01$). Of them, 57% were principals and 43% were assistant principals.

Measures

Principal Sense of Efficacy Scale (PSES). The PSES (Tschannen-Moran & Gareis, 2004) is an 18-item scale that assesses a principal's belief about his/her management skills. Respondents rate their confidence on a 9-point Likert-type scale from 1 (none at all) to 9 (a great deal). The PSES consists of three subscales (Efficacy for Management, Efficacy for Instruction, and Efficacy for Moral Leadership). Respectively, sample items include "prioritize among competing demands of the job", "facilitate student learning in your school", and "promote ethical behavior

among school personnel". Scores can range from 18 to 162, with higher scores reflecting a higher sense of principal efficacy. Construct validity was supported by negative correlation with work alienation and positive correlation with trust in teachers. The scale has good internal consistence with alphas of .91 for the total scale and .86 to .89 for the subscales.

Interpersonal social support. Interpersonal social support was measured through questions related to principals' received support following the study by Tschannen-Moran and Gareis (2007). Interpersonal social support was measured directly by asking participants to rate the level of support they receive from the superintendent, central office, teachers, school staff, parents, and students (e.g., How would you rate the quality of support you receive the central office in your school principal tasks?) on a 5-point scale ranging from the lowest quality to the highest. Exploratory factor analysis (EFA) was conducted to explore the factor structure of the interpersonal social support questions. Two factors emerged with eigenvalues over 1.0 (3.0-1.1), which accounted for 70% of shared variance. The questions related to social support within the school (staff, teachers, parents, and students) had factor loadings that ranged from .77 to .82; social support out of the (superintendent and central-office staff) had factor loadings of .83 and .89. The results of these analyses were similar to Tschannen-Moran and Gareis's (2007) findings.

Procedures

The study was conducted after obtaining permission from Tschannen-Moran and Gareis. The translation process was done in two stages: first, the original form was translated to Turkish by the authors; second, back translation was made by two language experts and back translated versions were compared with the original version by a native English speaker. In addition to this application to assess language appropriateness, a sample of twelve school administrators was consulted. After feedback from the sample, item wordings and instructions were revised.

Participants of the study were school principals who were drawn from a population of about 420 schools in the central region of Turkey. The names of the schools were obtained from the Konya Provincial Education Directorate. Packets of instruments, along with an explanatory letter, a demographic information sheet, a written consent form, information about anonymity, and a postage paid self-addressed envelope were mailed to the participants. Of the 420 packets of instruments and forms, 324 were returned, with a return rate of 77.1%. After checking for the missing responses and validity item (which forced respondents to mark "3" for that rating), 24 respondents were not included in the analyses.

Analysis

The psychometric characteristics of the instrument were analyzed through studies of reliability (internal consistency; by Cronbach's Alpha, corrected item-total correlations, and means difference between upper 27% and lower 27%), confirmatory factor analysis (CFA), and exploratory factor analysis (EFA), which was conducted to examine the factor structure. Finally, the correlations between PSES and

organizational support were examined in order to test the convergent validity of the scale.

Pearson correlations, EFA, t-test, and Cronbach's Alpha analyses were conducted with SPSS version 15 for Windows. Confirmatory factor analyses with maximum likelihood (ML) estimation and fit statistics were done with AMOS 16.0.

Results

Prior to analysis, statistical assumptions were evaluated to ensure normal distribution and multivariate analysis for both samples. The skewness and kurtosis values range from -.35 to -1.07 and -.26 to -1.15, respectively. This clearly suggests that the items conform to the assumption of confirmatory factor analysis for this sample. Table 1 displays descriptive data of the PSES-T for both samples.

Table 1.
Descriptive Data for the PSES-T for Samples 1 and 2

Items	Sample 1 (n=150)		Sample 2 (n=150)	
	M	SD	M	SD
1	6.8	1.4	6.6	1.4
2	6.9	1.5	7.1	1.3
3	7.2	1.3	7.3	1.3
4	7.3	1.3	7.4	1.3
5	7.4	1.3	7.5	1.3
6	7.5	1.3	7.4	1.3
7	6.9	1.6	6.8	1.6
8	6.6	1.9	6.8	1.8
9	7.5	1.3	7.4	1.3
10	7.7	1.3	7.8	1.2
11	7.2	1.6	7.4	1.5
12	6.9	1.5	7.1	1.4
13	7.3	1.4	7.4	1.4
14	7.8	1.3	7.9	1.2
15	7.5	1.6	7.7	1.4
16	7.9	1.2	7.9	1.2
17	6.9	1.6	7.1	1.7
18	7.4	1.4	7.6	1.3

Structural Validity

Confirmatory factor analyses (CFA) were performed using maximum likelihood estimations in order to assess the structural validity of the Turkish version of PSES. These analyses were performed using the AMOS statistical package. In order to assess the model fit, we used the χ^2 , χ^2 per degree of freedom (χ^2/df), the goodness of fit index (GFI), the comparative fit index (CFI), the root mean square error of

approximation (RMSEA), the standardized root mean square residual (SRMR), and the comparative fit index (CFI). Cutoff levels for determining the model fit were: $\chi^2/df \leq 3$, CFI, TLI $\geq .90$, RMSEA, and SRMR $\leq .08$ (Hu & Bentler, 1999, Schreiber, Nora, Stage, Barlow, & King, 2006). The model indices were $\chi^2/df = 2,80$, CFI=.873, TLI=.87, RMSEA= .100, and SRMR=.064, suggesting an unacceptable fit of the model to the data.

Concluding that 3 factor 18-item PSES did not fit the data obtained from a Turkish sample, an exploratory factor analysis (EFA) was conducted to further explore the factor structure of the 18-item PSES-T that better represented the sample data. The adequacy of the data for factor analysis was supported by Kaiser's measure of sampling (KMO) value of .88 and Barlett test of sphericity $\chi^2 = 1207.0$ ($p < .001$). A principal component factor analysis with varimax rotation was conducted. Based on the results, factors 1, 2, and 3 had eigenvalues of 7.39, 1.46, 1.16 and accounted for 41, 8, and, 6.4% of variance, respectively. Although three factors have eigenvalues above 1, examination of the scree plot and the second and the third factors made a weak contribution to the total of variance, suggesting a strong single factor structure (Çokluk, Şekercioğlu, & Büyüköztürk, 2010). Factor loadings in single factor structure ranged from .50- .74 ($M=.64$).

Based on the results of the EFA, a single factor model with 18 items was tested on the second sample by using CFA with the maximum likelihood method. Results indicated that single factor PSES-T met goodness-of-fit criteria; $\chi^2/df = 1.6$, CFI=.95, TLI= .94, RMSEA= .06, and SRMR=.04.

Concurrent Validity

Due to previous theories (Bandura, 1997) and researches (Kruger, 1997; Pati & Kumar, 2010; Tschannen-Moran, & Gareis, 2007; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998; Özdemir, 2010) suggesting that self-efficacy may be related with social support, potential associations between PSES-T scores and perceived social support were examined (see Table 2).

Table 2.
Correlation between PSES-T and Social Support

	2	3	4	5	6	7
1. PSES-T	.187*	.185*	.383**	.350**	.286**	.303**
2. Central-office		.549**	.270**	.134	.314**	.211**
3. Superintendent			.320**	.268**	.308**	.285**
4. Teachers				.693**	.482**	.481**
5. School staff					.493**	.418**
6. Parents						.688**
7. Students						-

* $p < .05$, ** $p < .01$

As expected, PSES-T scores had low positive correlations with social support from superintendent and central-office staff and moderate positive correlations with social support from staff, teachers, parents, and students.

A multiple regression test was conducted to determine whether or not demographic variables (years of administrative experience, years at school, socio-economic status of students, and school level) were significant predictors of PSES (see Table 3).

Table 3.

Multiple Regression: Prediction of Principal Sense of Efficacy

Criterion	R ²	F	η^2	Predictor	Beta	Sig.
PSES-T	.115	6.22**	.205	Years of experience	.221*	.002
			.079	Years at school	.032	.644
			.003	Socio-eco status	.202*	.004
			.002	School level	.101	.142

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

Demographic variables explain approximately 12% of variance in PSES-T ($R^2 = .12$, $F(6,22) = 5.02$, $p < .001$). PSES-T was significantly related to years of experience ($\beta = .22$, $p = .002$) and the socio-economic status of students ($\beta = .20$, $p < .01$). Years at school and school level were not significantly related with PSES-T.

Internal Consistency

Internal consistency estimates using Cronbach's alpha suggested high reliabilities for the total scale PSES-T = .94. In addition, a t-test was conducted to determine the significance of difference between the average item scores of the upper and lower 27% groups and the correlation of the item total score was calculated. Results are given in Table 4.

Table 4.

Item Analysis Results

Item	C.I.T. C ¹	Mean		t	Item	C.I.T. C ¹	Mean		t
		upper %27	lower %27				upper %27	lower %27	
1	.61	7.6	5.2	10.3*	10	.64	8.6	6.3	10.8*
2	.70	8.2	5.4	12.9*	11	.56	8.3	6.0	8.9*
3	.58	8.2	5.9	10.9*	12	.78	8.3	5.6	12.7*
4	.58	8.5	6.0	12.0*	13	.59	8.3	5.8	9.7*
5	.67	8.4	6.0	11.5*	14	.65	8.7	6.5	10.6*
6	.75	8.4	6.0	12.5*	15	.53	8.3	6.3	7.3*
7	.60	7.7	5.2	7.5*	16	.66	8.6	6.7	9.3*
8	.51	7.8	5.0	8.0*	17	.71	8.1	5.6	9.4*
9	.72	8.6	6.0	13.0*	18	.67	8.3	6.0	9.5*

* $p < .05$

¹Corrected Item-Total Correlation

As seen in Table 4, for all items in the scale, item-total correlations vary between .51 and .78 and all items presented a significant difference at $p < .05$ within the lower and upper groups.

Discussion and Conclusion

The purpose of this study was to investigate the reliability and validity of a Turkish version of PSES among school principals. Primarily, the construct validity of the 3-factor PSES-T was investigated with CFA. Findings from CFA yielded an unacceptable fit to the data. To our knowledge, no other studies conducted CFA to test PSES's construct validity. In the next stage, exploratory factor analysis was conducted in order to determine the structure of the PSES with another sample. Although principal component analysis gave similar results with Tschannen-Moran, Gareis (2004) and Nye (2008), a one-factor structure was accepted because the EFA yielded a unidimensional result and CFA did not support a three-factor model.

In keeping with Tschannen-Moran and Gareis's (2007) findings that there was a high level of correlation between social support within school (staff, teachers, parents, and students) and principal self-efficacy ($r = .42$, $p < .01$), a medium level of correlation between social support from out of school (superintendent and central-office staff) and principal self-efficacy ($r = .34$, $p < .01$), the concurrent validity of the PSES was supported by low positive correlations with social support from the superintendent and central-office staff and moderate positive correlations with social support from staff, teachers, parents, and students. To provide further evidence for the validity of the PSES, the relationship between demographic variables and PSES was examined. Results showed that there were no significant relations between years at school, school level, and PSES. These findings are similar with the other research examining the potential associations of PSES with years at school (Costa-Hernandez, 2010; Tschannen-Moran & Gareis, 2004) and school level (Dimmock & Hattie, 1996; Santamaría, 2008). Contrary to the results of other research (Costa-Hernandez, 2010; Tschannen-Moran & Gareis, 2004; Tschannen-Moran & Gareis, 2007), but parallel with the theory, we found a significant relationship between years of experience (Santamaría, 2008; Dimmock & Hattie, 1996), the socio-economic status of students, and PSES. According to Bandura, an individual's successful past experiences - namely mastery experiences - are the prominent factors that determine self-efficacy (Bandura, 1997).

The results of this study show that the total scale of PSES-T demonstrated good consistency (.94). To provide further evidence for the reliability of the PSES-T, a comparison was made between the average scores of the participants included within the upper and lower groups. Entire items were found to be significant at level $p < .05$. These findings provide evidence to support the reliability of a Turkish version of PSES.

In conclusion, the present study provided psychometric support for the Turkish version of the PSES. However, this study has some limitations. First, test-retest scores

were not conducted; thus, the stability of the PSES's parameters and the consistency of participants' responses could not be established. Second, we used single questions to measure participants' perceived social support, but using a scale and measuring interpersonal social support indirectly would give more accurate results. Further research would examine the structure of the PSES with similar populations in other cultures.

References

- Allinder, R.M. (1995). An examination of the relationship between teacher efficacy and curriculum based measurement and student achievement. *Remedial and Special Education, 16*, 247-254. doi: 10.1177/074193259501600408
- Altun, S., & Aykoç, B. (2009, May). Lise öğrencilerinin İngilizceye yönelik algı puanlarının cinsiyete, alanlara ve farklı düzeylere göre İngilizce başarısını yordama gücü [Prediction of high school students' perceptions of English to their English proficiency with respect to gender and field]. Paper presented at the I. International Congress of Educational Research, Çanakkale, Turkey.
- Anderson, D.W., Krajewski, H.T., Goffin, R.D., & Jackson, D.N. (2008). A leadership self-efficacy taxonomy and its relation to effective leadership. *The Leadership Quarterly, 19*, 595-608. doi:10.1016/j.leaqua.2008.07.003
- Babaoğlu, E., & Korkut, K. (2010). The correlation between level of classroom teachers' self-efficacy beliefs and classroom management ability perceptions. *İnönü University Journal of the Faculty of Education, 11*, 1-19. Retrieved from <https://pegem.net/dosyalar/dokuman/121556-2011062918401-11101.pdf>
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*, 122-147.
- Bandura, A. (1986). *Social foundation of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist, 28*, 117-148. doi:10.1207/s15326985ep2802_3
- Bandura, A. (1994). Self-efficacy. In V.S. Ramachoudran (Ed.). *Encyclopedia of Human Behavior*. (Vol. 4, pp. 71-81). New York: Academic Press.
- Bandura, A. (1997). *Self-efficacy: the exercise of control*. New York: Freeman.
- Bandura, A. (2012). On the functional properties of perceived self-efficacy revisited. *Journal of Management, 38*, 9-44. DOI: 10.1177/0149206311410606
- Bower, G.H., & Hilgard, E.R. (1981). *Theories of learning*. Englewood Cliffs, NJ: Prentice Hall.

- Brown, S. (2010). *An exploration of the relationship between principal leadership efficacy, principal computer self-efficacy, and student achievement*. Unpublished doctoral dissertation. University of North Texas.
- Chemers, M. M., Watson, C. B., & May, S. T. (2000). Dispositional affect and leadership effectiveness: A comparison of self-esteem, optimism, and efficacy. *Personality and Social Psychology Bulletin*, 26, 267-277. doi: 10.1177/0146167200265001
- Copraro, G.V., Barbaranelli, C., Steca, P., & Malone, P.S. (2006). Teachers' self-efficacy beliefs as determinants of job satisfaction and student achievement: A study of the school level. *Journal of School Psychology*, 44, 473-490. doi:10.1016/j.jsp.2006.09.001
- Costa-Hernandez, D. (2010). *Principal self-efficacy beliefs and student achievement*. Unpublished doctoral dissertation. San Diego State University
- Çokluk, Ö., Şekercioğlu, G., & Büyüköztürk, S. (2010). *Sosyal bilimler için çok değişkenli istatistik: SPSS ve LISREL uygulamaları* [Multi-dimensional statistic for social sciences: Applications of SPSS and LISREL]. Ankara: Pegem
- Dede, Y. (2008). Matematik öğretmenlerinin öğretimlerine yönelik öz yeterlik inançları [Teaching self-efficacy of maths teachers for their teaching performance]. *Türk Eğitim Bilimleri Dergisi*, 6, 741-757. Retrieved from <http://www.tebd.gazi.edu.tr/index.php/tebd/article/download/179/165>
- Dimmock, C., & Hattie, J. (1996). School principals' self-efficacy and its measurement in a context of restructuring. *School Effectiveness and School Improvement*, 7, 62-75. doi:10.1080/0924345960070103
- Federici, R. A., & Skaalvik, E. M. (2011). Principal self-efficacy and work engagement: Assessing a Norwegian principal self-efficacy scale. *Soc Psychol Educ*, 14, 575-600. doi: 10.1007/s11218-011-9160-4
- Gaddard, R. D., Hoy, W. K., & Hoy, A. W. (2000). Collective teacher self-efficacy: Its meaning, measure, and impact on student achievement. *American Educational Research Journal*, 37, 479-507. doi: 10.3102/00028312037002479
- Gist, M. E., & Mitchell, T. R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *The Academy of Management Review*, 17, 183-211. doi: 10.5465/AMR.1992.4279530
- Hannah, S. T., Avolio, B. J., Luthans, F., & Harms, P.D. (2008). Leadership efficacy: Review and future directions. *The Leadership Quarterly*, 19, 669-692. doi:10.1016/j.leaqua.2008.09.007
- Hamurcu, H. (2006). Class teacher candidates' self efficacy beliefs towards science education. *Eurasian Journal of Educational Research*, 24, 112-122.

- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modelling, 6*, 1-55. doi:10.1080/10705519909540118
- Işinsal, M. (2002). *The effect of spreadsheet and dynamic geometry software on the mathematics achievement and mathematics self- efficacy of 7th grade students*. Unpublished master dissertation. Middle East Technical University
- Judge, T.A., Bono, J.E. (2001). Relationship of core self-evaluations traits- self-esteem, generalized self-efficacy, locus of control, and emotional stability- with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology, 86*, 80-92. doi:10.1037//0021-9010.86.1.80
- Kruger, L. J. (1997). Social support and self- efficacy in problem solving among teacher assistance teams and school staff. *The Journal of Educational Research, 90*, 164-168. doi:10.1080/00220671.1997.10543772
- Külekçi, G. (2011). A study on pre-service English teachers' self-efficacy beliefs depending on some variables. *Journal of Educational Sciences, 3*, 245-260. Retrieved from http://www.iojes.net/userfiles/Article/IOJES_394.pdf
- Lehman, R. (2007). *The relationship of elementary school principals' perception of self- efficacy and student achievement*. Unpublished doctoral dissertation. The University of Wisconsin.
- Lockard, S. A. (2013). *An analysis of the relationship between elementary principal self- efficacy and 5th grade reading achievement*. Unpublished doctoral dissertation. University of Maryland.
- McCullers, J. F., & Bozeman, W. (2010). Principal self-efficacy: The effects of no child left behind and Florida school grades. *NASSP Bulletin, 94*, 53-74. doi: 10.1177/0192636510371976
- Milner, H., & Hoy, A. (2003). A case study of an African American teacher's self- efficacy, stereotype threat, and persistence. *Teaching and Teacher Education, 19*, 263-276. doi:10.1016/S0742-051X(02)00099-9
- Moak, J. (2010). *The self-perception of leadership efficacy of elementary principals and the effects on student achievement*. Unpublished doctoral dissertation. University of Missouri-Columbia.
- Nye, G.D. (2008). *Principals' leadership beliefs: Are personal and environmental influences related to self-efficacy?* Unpublished doctoral dissertation. University of North Texas.
- Orhan, F. (2005). Bilgisayar öğretmen adaylarının, bilgisayar kullanma özyeterlik inancı ile bilgisayar öğretmenliği özyeterlik inancı üzerine bir araştırma [An investigation on computer teacher candidates' computer use self-efficacy and teaching computer self-efficacy]. *Eurasian Journal of Educational Research, 21*, 173-186. Retrieved from <http://www.ejer.com.tr/0download/pdfler/tr/1406042041.pdf>

- Özdemir, A. (2010). İlköğretim okullarında algılanan örgütsel desteğin öğretmenlerin kişiler arası öz yeterlik inançları ile ilişkisinin incelenmesi [Relationship between perceived organizational support and teachers' interpersonal self-efficacy among primary schools]. *Gazi Eğitim Fakültesi Dergisi*, 30, 127-146. Retrieved from <http://www.gefad.gazi.edu.tr/window/dosyapdf/2010/1/2010-1-127-146-8GEF%201004.pdf>
- Pajares, F. (1996). Self-efficacy beliefs in academic setting. *Review of Educational Research*, 66, 543-578. doi: 10.3102/00346543066004543
- Pati, S. P., & Kumar, P. (2010). Employee engagement: Role of self-efficacy, organizational support & supervisor support. *The Indian Journal of Industrial Relations*, 46, 126-136. Retrieved from <http://www.jstor.org/stable/25741102>
- Ramchunder, Y., & Martins, N. (2014). The role of self-efficacy, emotional intelligence and leadership style as attributes of leadership effectiveness. *SA Journal of Industrial Psychology*, 40, 1-11. <http://dx.doi.org/10.4102/sajip.v40i1.1100>
- Rossow, L. F. (1990). *The principalship: Dimensions in instructional leadership*. Englewood Cliffs, NJ: Prentice Hall.
- Santamaría, A. P. (2008). *A principal's sense of efficacy in an age of accountability*. Unpublished doctoral dissertation. San Diego State University
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: a review. *The Journal of Educational Research*, 99, 323-337. doi:10.3200/JOER.99.6.323-338
- Schunk, D. H. (1989). Self-efficacy and achievement behaviors. *Educational Psychology Review*, 1, 173-208. doi: 10.1007/BF01320134
- Tschannen-Moran, M., & Barr, M. (2004). Fostering student learning: the relationship of collective teacher efficacy and student achievement. *Leadership and Policy in Schools*, 3, 189-209. doi: 10.1080/15700760490503706
- Tschannen-Moran, M., & Gareis, C. R. (2004). Principals' sense of efficacy. Assessing a promising construct. *Journal of Educational Administration*, 42, 573-585. doi: 10.1108/09578230410554070
- Tschannen-Moran, M., & Gareis, C. R. (2007). Cultivating principals' self-efficacy: Supports that matter. *Journal of School Leadership*, 17, 89-114. Retrieved from <http://eric.ed.gov/?id=EJ807374>
- Tschannen-Moran, M., Woolfolk Hoy, A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, 68, 202-248. Retrieved from http://mxtsch.people.wm.edu/Scholarship/RER_TeacherEfficacy.pdf

- Versland, T. M. (2009). *Self-efficacy development of aspiring principals in education leadership preparation programs*. Unpublished doctoral dissertation. Montana State University
- Watts, L., Kolsun, C., Cline, V., & Williams, L. (2011, September 27). *Principals' sense of efficacy and cultural factors in rural West Virginia schools*. Retrieved from the Connexions Web site: <http://cnx.org/content/m41135/1.3/>
- Williams, J. C. (2012). *Examining the relationship between Louisiana principals' self-efficacy beliefs and student achievement*. Unpublished doctoral dissertation. University of New Orleans.
- Wood, R. E., & Bandura, A. (1989). Impact of conceptions of ability on self-regulatory mechanisms and complex decision making. *Journal of Personality and Social Psychology*, 56, 407-415. Retrieved from <http://web.stanford.edu/dept/psychology/bandura/pajares/Bandura1989J PSP.pdf>
- Yalçın, F. A. (2011). Investigation of science teacher candidates' self-efficacy beliefs of sciences teaching with respect to some variables. *International Journal of Educational Sciences*, 3, 1046-1063. Retrieved from <http://asosindex.com/journal-article-fulltext?id=29583&part=1>

Yönetici Öz-yeterlik Ölçeğinin Türkçeye Adaptasyonu: Geçerlik ve Güvenirlik Çalışması

Atf:

- Negiş-Işık, A., & Derinbay, D. (2015). Principals' sense of efficacy scale: Validity and reliability study. *Eurasian Journal of Educational Research*, 60, 1-16
Doi: 10.14689/ejer.2015.60.1

Özet

Problem Durumu: Başarılı liderlerin başarılı okullar için anahtar öge olduğu bilinmektedir. Bu noktada başarılı liderlerin hangi özelliklere sahip olduğu sorusu önem kazanmaktadır. Bu soruya verilebilecek cevaplardan biri de liderin ya da yöneticinin öz-yeterliği olabilir. Yönetici öz-yeterliği konusunda ülkemizde, yöneticilerin "genel öz-yeterlik" inançlarını ve yönetici adayı öğretmenlerin "öğretmenlik öz-yeterlik inançlarını" konu alan çalışmalar olmasına rağmen "yönetici öz-yeterlik" inancına ilişkin az sayıda çalışma bulunmaktadır.

Araştırmanın Amacı: Bu araştırmanın amacı Yönetici Öz-yeterlik Ölçeğinin Türkçe versiyonunun psikometrik özelliklerinin test edilmesidir.

Araştırmanın Yöntemi: Yönetici Öz-yeterlik Ölçeğinin (YÖÖ) Türk kültürüne uyarlamasının yapıldığı bu çalışmada ölçeğin yapı geçerliğini belirlemek amacıyla açılımlı ve doğrulayıcı faktör analizleri yapılmış, her iki analiz için okul

yöneticilerinden oluşan birbirinden bağımsız iki örneklem grubu alınmıştır. Açıklayıcı faktör analizi için kullanılan ilk örnekleme %11'i kadın % 89'u erkek olmak üzere 150 okul yöneticisi yer almaktadır. Okul yöneticilerinin yarısından fazlası (%60) okul müdürü olarak görev yapmaktadır ve kıdemleri 1 ile 33 yıl arasında değişmektedir ($\bar{X} = 9.8$, $S_s = 7.9$). Doğrulayıcı faktör analizi için kullanılan ikinci örnekleme ise 150 okul yöneticisi bulunmaktadır (%10 kadın, %90 erkek). Okul yöneticilerinin % 57'si okul müdürü %43'ü ise müdür yardımcısı olarak görev yapmaktadır, kıdemleri ise 1 ile 37 yıl arasında değişmektedir ($\bar{X} = 8,6$, $S_s = 7.01$).

Araştırmanın veri toplama araçlarını Tschannen-Moran ve Gareis (2004) tarafından geliştirilen Yönetici Öz-yeterlik Ölçeği ile birlikte, yöneticilerin aldığı kişilerarası sosyal desteğe ilişkin sorular ve katılımcıların yaş, cinsiyet, eğitim durumları, mesleki kıdemleri gibi bilgilerini içeren kişisel bilgi formu oluşturmaktadır. Yönetici öz-yeterlik ölçeği orijinal formu 18 maddeden ve 3 alt boyuttan oluşan 9'lu likert tipi bir ölçektir. Ölçekten 9 ile 162 arasında puan alınmaktadır ve yüksek puanlar yüksek öz-yeterliği göstermektedir. Orijinal ölçeğin genelini cronbach alfa iç tutarlık katsayısı .91, alt boyutları ise .86 ile .89 arasında değişmektedir. Araştırma kapsamında ayrıca yöneticilerin algıladıkları sosyal destek, katılımcılara denetçilerden, İl milli eğitim müdürlüğünden, öğretmenlerden, velilerden ve öğrencilerden aldıkları desteğe ilişkin sorular yönetilerek (Örn; Yöneticilik görevinizi yaparken öğretmenlerden aldığınız desteğin kalitesi ne düzeydedir?) ölçülmüştür. Katılımcılardan aldıkları desteği 1- çok düşük kalitede, 5-çok yüksek kalitede olmak üzere derecelendirmeleri istenmiştir. Kişilerarası sosyal destek sorularının faktör yapısını belirlemek amacıyla yapılan açıklayıcı faktör analizi sonucunda, Tschannen-Moran and Gareis (2007)'in çalışmasına benzer şekilde ölçeğin öz değeri birden büyük (3.0, 1.1) iki faktörden oluştuğu ve bu faktörlerin toplam varyansın %70'ini açıkladığı görülmüştür. Ölçeğin okul içi destek boyutunu (öğretmen, veli ve öğrenci) oluşturan soruların faktör yükleri .77. ile .82, okul dışı destek boyutunu oluşturan (İl milli eğitim ve denetçiler) soruların faktör yükleri ile .83 ve .89'dur.

Araştırmada veri analizi amacıyla Pearson korelasyon, açıklayıcı faktör analizi (AFÖ), t- testi ve Cronbach Alpha analizleri SPSS 15.00 ile, en büyük olabilirlik kestirimi ve uyum değerleri ise AMOS 16.00 ile yapılmıştır.

Araştırmanın Bulguları: Analizden önce her iki örneklemin normal dağılım gösterip göstermediği ve çok değişkenli analizlere uygunluğu test edilmiştir. Bu amaçla öncelikle çarpıklık ve basıklık katsayıları incelenmiştir, bu değerler sırasıyla -.35 ile -1.07 ve -.26 ile -1.15 arasında değişmektedir. Elde edilen değerler örneklemin faktör analizine uygun olduğunu göstermektedir. Verilerin faktör analizine uygunluğu ayrıca Kaiser-Meyer Olkin (KMO) değeri .88 ve Barlett küresellik testi $\chi^2 = 1207.0$ ($p < .001$) ile de desteklenmiştir. Araştırma kapsamında öncelikle orijinal ölçeğin 3 faktörlü yapısını sınamak amacıyla doğrulayıcı faktör analizi yapılmıştır. Analiz sonucunda elde edilen değerler ($\chi^2/df = 2,80$, CFI=.873, TLI=.87, RMSEA= .100, SRMR=.064) ölçeğin Türkçe versiyonu için 3 faktörlü yapının iyi uyum göstermediğini ortaya koymaktadır. Bu sonuçlara dayalı olarak ölçeğin faktör yapısını belirlemek amacıyla açıklayıcı faktör analizi yapılmıştır. Yapılan analiz sonucunda ölçeğin öz değeri birden büyük 3 faktörden oluştuğu bu faktörlerin

özdeğerlerinin sırasıyla 7.39, 1.46 ve 1.16 olduğu görülmüştür. İlk faktör toplam varyansın % 41'ini daha sonraki faktörler ise sırasıyla %8 ve % 6.4'ünü açıklamaktadır. Ölçeğin öz değeri birden büyük üç faktörü olmasına karşın, ilk faktörden sonraki faktörlerin öz değerlerinde ciddi bir düşüşün olması ve ikinci ve üçüncü faktörlerin toplam varyansa yaptığı katkının öneminin düşük olması ölçeğin tek faktörlü bir yapı gösterdiğine kanıt teşkil etmektedir (Çokluk, Şekercioğlu, Büyüköztürk, 2010). Sonuç olarak ölçeğin tek faktörlü yapısının toplam varyansın %41'ini açıkladığı ve madde faktör yüklerinin .50-.74 arasında değiştiği görülmüştür. Açımlayıcı faktör analizi sonuçlarına dayanarak 18 maddeden oluşan tek faktörlü model, maksimum olabilirlik yöntemi ile doğrulayıcı faktör analizi kullanılarak ikinci örneklem üzerinde test edilmiştir. Analiz sonucunda elde edilen uyum iyiliği değerleri ($\chi^2/df= 1.6$, CFI=.95, TLI= .94, RMSEA= .06, SRMR=.04) ölçeğin tek faktörlü yapısını doğrulamaktadır.

Ölçeğin güvenilirliğini belirlemek için cronbach alfa iç tutarlık katsayısı hesaplanmış ve .94 olduğu görülmüştür. Ayrıca her bir maddeye ait ortalamanın alt-üst %27'lik gruplarda farklılaşıp farklılaşmadığı t- testi ile sınanmış ve bütün maddelerde ilişkin üst %27'lik dilimdeki bireyler ile alt %27'lik dilimdeki bireyler arasında anlamlı düzeyde ($p<.05$) farklılık olduğu görülmüştür.

Öz-yeterlik ile ilgili teori (Bandura, 1997) ve daha önceki çalışmaların (Kruger, 1997; Pati & Kumar, 2010; Tschannen-Moran, & Gareis, 2007; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998; Özdemir, 2010) bulguları öz-yeterliğin sosyal destek ile ilişkili olduğunu göstermektedir. Bu nedenle ölçeğin ölçüt bağımlı geçerliği sınamak amacıyla sosyal destek ile olan ilişkisi incelenmiştir. Analiz sonucunda, okul yöneticisinin öğretmenler ($r= .383$), aileler ($r= .350$) ve öğrencilerden ($r= .286$) aldığı desteğin yönetici öz-yeterlik ile orta düzeyde pozitif, İl milli eğitim müdürlüğü ($r= .187$) ve denetçilerden ($r= .185$) aldığı destekle düşük düzeyde pozitif ilişki gösterdiği görülmüştür. Ayrıca okuldaki öğrencilerin genelinin sosyo-ekonomik durumu, okul kademesi gibi okul ile ilgili değişkenler ve okul müdürünün kıdemi ve okuldaki çalışma süresi gibi okul müdürü ile ilgili değişkenlerin öz-yeterliği ne düzeyde yordadığı belirlenmeye çalışılmıştır. Analiz sonucunda, kıdem ($\beta= .221$) ve okuldaki öğrencilerin genelinin sosyo-ekonomik durumunun ($\beta= .202$) yönetici öz yeterliğin anlamlı yordayıcıları olduğu, okulda çalışma süresi ve okulun kademesi değişkenlerinin ise öz-yeterlik üzerinde anlamlı etkiye sahip olmadığı görülmüştür.

Araştırmanın Sonuçları ve Öneriler: Araştırma sonucunda elde edilen bulgular, Yönetici öz-yeterlik ölçeğinin Türkçe versiyonunun geçerli ve güvenilir olduğunu göstermiştir. Ancak araştırmanın bazı sınırlıkları vardır. İlk olarak ölçeğin tutarlılığı test tekrar test yapılamadığı için kanıtlanamamıştır. Ayrıca okul yöneticilerinin algıladıkları sosyal destek tek madde ile ölçülmüştür. Sosyal desteğin kapsamlı bir ölçek ile ölçülmesi daha kesin sonuçların elde edilmesi sağlayabilir.

Anahtar sözcükler: Yönetici öz-yeterlik, öz-yeterlik, geçerlik, güvenilirlik