European Journal of Education Studies
ISSN: 2501 - 1111
ISSN-L: 2501 - 1111
Available on-line at: www.oapub.org/edu

doi: 10.5281/zenodo.2580554 Volume 5 | Issue 11 | 2019

ANALYSIS OF THE PERCEPTIONS OF TEACHERS WITH REGARD TO EDUCATION INSPECTORS' LEVELS OF CARRYING OUT THEIR DUTIES AND ROLES: A META-ANALYSIS STUDY

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Abstract:
The approach of modern educational supervision aims to create self-improvement opportunities which are suitable for each teacher by considering their individual differences and personal traits. The aim of this study is to present the effect of teachers' genders and seniorities on their perceptions with regard to Education Inspectors' levels of carrying out their duties and roles. MA and PhD theses, and research articles discussing this issue in Turkey were taken into the scope of this study. As a result of the browsing, it was seen that there are 44 studies between 2000 and 2019 which are deemed appropriate for the inclusion criteria. Within the scope of these studies, the number of samples is 17060 which consist of 8703 female teachers and 8357 male teachers. As one of the methods used to synthesize research results and used in the re-analysis of the findings of empirical studies, meta-analysis method was used in the study. According to the results of the study, from the point of gender variable, a statistically insignificant level of effect size (d=-0,15; [-0,06/-0,22]) was detected for the benefit of male teachers as indicated by random effects model. From the point of seniority variable (33 studies), an effect size with statistical significance at an insignificant level (d=0,07; [-0,08/0,23]) was determined for the benefit of teachers with 1-10 years of experience as indicated by random effects model. The result that genders and seniorities of teachers have an insignificant level of effect on their perceptions with regard to Education Inspectors' levels of carrying out their duties and roles can be considered as another topic of research stating that other factors apart from these variables (satisfaction with the occupation, socio-economic level, communication, culture, qualities of inspector etc.) might be effective.

Keywords: inspector, teacher, meta-analysis, supervision, guidance

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1. Introduction

Educational supervision is a supervisory process that includes the practices to determine the level of realization of the objectives of organizations which were established in order to achieve the specific objectives of education, as well as the practices used to solve the problems and develop the system. In other words, educational supervision is a process which gets teachers into the dialogue related to education, and helps and improves them with the aim of developing education and increasing success of students (Aydın, 2013; Memduhoğlu, 2012; Oliva and Powels, 2001; Sullivan and Glanz, 2015; Taymaz, 2012).

Education inspectors (EI) guide education directors and teachers in behavioural and academic dimensions, and they contribute to the increase of effectiveness of the service presented (MEB, 2015). Duties of EIs (MEB, 2015a) can be summarised as follows: guidance, supervision, analysing, reporting as a result of investigation works, helping the improvement of assistant inspectors, and checking whether processes and results of services comply with the regulation or not through guidance and supervisions. While EIs carry out these duties and roles, especially relations between teachers and inspectors and their levels and ways of understanding each other are highly important.

Effective guidance and supervision activities carried out by EIs are important factors which contribute to the occupational development of teachers (Köroğlu and Oğuz, 2011; İlğan, 2012; Taymaz, 2012). The idea that supervision process is a trial for teachers has given way to the idea that it is a process of guiding and helping teachers in their professions which basically forms the essence of modern supervision approach. A healthy progress of the supervision process is only possible when perceptions and expectations of teacher related to this process are known (Özan and Şener, 2015). Positive perceptions and expectations of teachers about the supervision process and roles and responsibilities of inspectors contribute to their occupational developments and performances (Zepeda, 2016).

Nowadays, educational supervision has a function of developing teachers rather than controlling teachers. Inspecting and developing teachers especially during educational process has become one of the most necessary elements for education system to reach its goals (Aydın, 2012). Emerging with and after clinical supervision, modern supervision approaches such as developmental supervision, differential supervision, reflective supervision, peer supervision, mentorship, and coaching focus on improving teachers (İlğan, 2008; Yalçınkaya, 1993).

2. Literature Review

In the researches carried out in Turkey about the process of educational supervision, it has been observed that EIs do not perform their supervision in the modern way, cannot meet the needs, and many problems have been experienced in this field. In these studies, the high amount of criticism that supervision process is carried out with the

aim of controlling, checking for mistakes, and evaluating has been drawing attention. Again in these studies, it has been observed that teachers have more negative perceptions about the supervision process. As the reason of this negative perception, teachers have stated that they perceive the supervision as an act of looking for mistakes and that the pressure and fear they experience cause negative perception (Aküzüm and Özmen, 2013; Arabacı and Akar, 2010; Gün, 2011; Memduhoğlu, 2012; Özan and Şener, 2015; Sarpkaya, 2004). In the study carried out by Gün (2011), it was detected that female teachers and teachers with less seniority cannot communicate and cooperate with inspectors at the desired level. In this context, personal and professional qualities of teacher should be recognized, and the supervision process should be developed within this scope.

In the meta-synthesis study carried out by Aküzüm and Özmen (2013), from the point of carrying out the roles of supervision, the acquired results revealed that inspectors found themselves qualified at a "high" level. On the other hand, teachers found inspectors qualified at a "low" level. There are different results in the literature about whether genders and seniorities of teachers, as personal traits of teachers, have any effect on this negative perception or not (Arslantaş, 2007; İnal, 2008; Memduhoğlu and Mazlum, 2014; Memişoğlu, 2001). The understanding of modern educational supervision highlights that performance should be evaluated by considering personal traits (gender, age etc.) and occupational development qualities (seniority, level of education etc.) of teachers (Aydın, 2013). The approach of modern educational supervision pays attention to individual differences and personal traits of teacher; it attempts to create appropriate self-development opportunities for each teacher. Seniorities and genders of teachers can affect their perception about the supervision of inspectors (Guramatunhu-Mudiwa & Bolt, 2012).

Identification of the effect of teachers' genders and seniorities on their perceptions with regard to EIs' levels of carrying out their duties and roles forms the problem of this study. The aim of this study is to present the effect of teachers' genders and seniorities on their perceptions with regard to Education Inspectors' Levels of Carrying out Their Duties and Roles (EILCTDR).

3. Material and Methods

Research model, data collection, and data analysis sections are presented in this chapter.

3.1 Research Model

As one of the methods used to synthesize research results and used in the re-analysis of the findings of empirical studies, meta-analysis method was used in the study. Meta-analysis method is the systematic analysis and synthesis of the data of quantitative studies carried out independently about the same topic. In the analysis of data, from the group comparison meta-analysis methods (random effects model), the Group Difference model was used (Cumming, 2012: 205; Hedges & Vevea, 1998). In this study,

Funnel scatter plot, Orwin's Fail-Safe N., and Kendall's Tau coefficient was used to calculate whether there is publication bias or not (Borenstein, Hedges, Higgins, & Rothstein, 2009).

3.2 Data Collection Tool

MA and PhD theses and research articles discussing this issue in Turkey were taken into the scope of this study. Keywords such as "education inspector", "education supervisor", and "teacher" were searched in YOK National Thesis Archive and various search engines in order to access the related researches. As a result of this browsing, it was observed that 44 studies were appropriate for the inclusion criteria. Inclusion criteria used in the selection of the studies included in the research are as follows:

- Criterion 1: Published or unpublished study sources: MA and PhD theses, and research articles published in the literature were taken into the scope.
- Criterion 2: Convenience of the dependent and independent variables in meta-analysis study: In order to reach effect size in meta-analysis studies, it was paid attention that the included studies were empirical studies and studies in which genders of teachers were taken as independent variables.
- Criterion 3: Including necessary quantitative data for meta-analysis: In order to calculate effect sizes which were necessary for meta-analysis study, it was paid attention that it includes quantitative data (average, standard deviation, sample number, p value etc.).
- Criterion 4: It was paid attention that studies were carried out in Turkey between 2000 and 2019.
- Exclusion Criteria: 22 studies obtained as a result of the literature search were not included in the meta-analysis study since they were carried out with different samples (school principals, inspectors), they lacked necessary statistical data for meta-analysis, and they included only qualitative findings.
- Research Reliability: In a meta-analysis study carried out through published and unpublished studies, an important point about the reliability of results is interrater reliability at the stage of coding of studies. After coding is completed, tests are carried out in order to provide interrater reliability, and consensus is looked for for the points on which there is not agreement (Lipsey and Wilson, 2001). In this study, data were coded by using two raters. Cohen's Kappa statistics were used to provide relability between raters which processed studies in coding protocol and it was found as 0.94. This result indicates a good compliance between the raters.
- Research Validity: Browsing and inclusion of all studies in accordance with the inclusion criteria for meta-analysis by using all available databases is an indicator of the validity of the research (Petitti, 2000). Considering that all studies were accesses as a result of browsing, it can be stated that validity was ensured. Within this scope, each of 66 studies included in meta-analysis were analysed in detail; reliability and validity of data collection tools used in the research was verified. Therefore, it can be stated that this meta-analysis study is also valid.

3.3 Analysis of Data

CMA Ver. 2. [Comprehensive Meta Analysis] (Borenstein, Hedges, Higgins and Rothstein, 2005) software was used for the statistical calculations of this study. Group difference meta-analysis method was used in the analysis of the data. In a meta-analysis study, two models are used to calculate the general effect size: fixed and random effects models. At the stage of combining studies (general effect), which model shall be used is decided in accordance with these assumptions, and model can be selected either before the study or at the beginning of the study. While fixed effects model is selected in replication studies, random effects model is suggested especially in social sciences since operational and procedural variance is not present in most of the studies (Cumming, 2012; Hedges and Vevea, 1998). Q and I^2 statistics are also used in alternative model selection, and model can be selected. However, especially in social sciences, since the aim of synthesizing is to make unconditional inferences for most researchers, the best option is to choose random effects model (Altınkurt, Yılmaz and Yıldırım, 2015; Card, 2012; Cumming, 2012; Dinçer, 2014; Ellis, 2012; Shelby and Vaske, 2008; Üstün and Eryılmaz, 2014).

In this study, while teachers who are female and have 1-10 years of experience were taken into the experimental group, teachers who are male and have 10 years or more experience were taken into the control group. Positive effect size is interpreted for the benefit of teachers who are female and have 1-10 years of experience, negative effect size is interpreted for the benefit of teachers who are male and have 10 years or more experience. SPSS Ver. 20.0 was used for the rater reliability test (Cohen's Kappa). Significance level in the included studies (0,05) is also valid for this study.

4. Results and Discussion

Findings acquired from the researches within the scope of meta-analysis (publication bias, forest plot, random effects model, and moderator analysis) are given in this chapter.

4.1 Publication Bias

In order to understand whether studies included in the meta-analysis cause publication bias or not, methods such as Funnel plot, Rosenthal's fail-safe N, Orwin's fail-safe N number, and Duval and Tweedie's Trim and Fill are frequently used in the literature (Dinçer, 2014: 26; Duval and Tweedie, 2000; Rothstein, Sutton and Borenstein, 2005). In this study, publication bias was tested by using two methods: Funnel plot and Orwin's Fail-Safe N. Funnel plot is a scatter diagram of the estimated effect size based on the sample size of studies which is formed by considering standard error. This plot is based on the assumption that as the sample size of studies increases, the certainity in the practices's prediction of effect size (that standard error shall decrease) shall increase (Cooper et al., 2009). In the funnel plot, while results obtained from studies with small samples accumulate towards the bottom of the plot, studies with large samples accumulate towards the top of the plot. The fact that distribution in the funnel plot is

not symmetrical and the included studies accumulate towards the top of the plot is interpreted as that there is not publication bias (Card, 2012; Cooper et al., 2009; Cumming, 2012; Dinçer, 2014; Üstün and Eryılmaz, 2014).

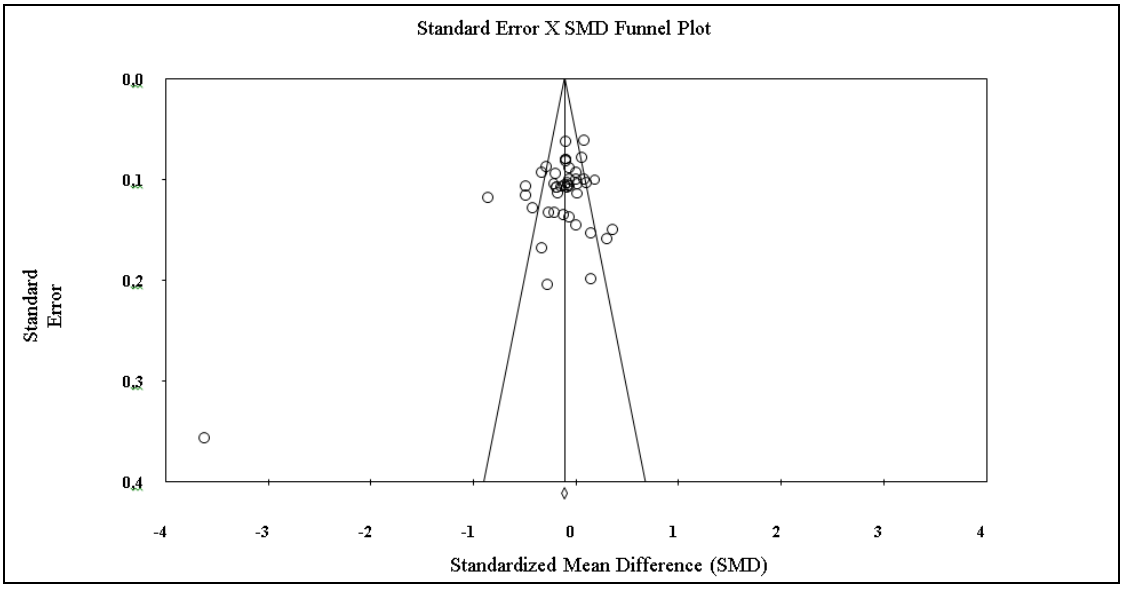

Figure 1: Funnel Plot of Effect Sizes of Studies Related to Gender Variable

It has been observed that majority of 44 studies within the scope of the research accumulate towards the top part of the figure and are close to the combined effect size (Figure 1). If there was publication bias in these 44 studies included, most studies would be accumulated at the bottom of the funnel shape or only at one side of the vertical line (Borenstein et al., 2009: 284). This funnel plot (Figure 1) is one of the indicators of the absence of a publication bias in terms of the studies included in this study. Orwin's Fail-Safe N calculation was also carried out as the second test to check publication bias. Orwin's Fail-Safe N gives the number of studies which might be absent in a meta-analysis synthesis (Borenstein et al., 2009: 285; Rosenthal, 1979, p. 638). For the average effect size, which was found as -0,15 as a result of the meta-analysis, to reach the level of 0,01 (trivial) – to reach almost zero effect level – the necessary number of studies is 500. In other words, it shows how many more studies are needed in order to eliminate significance in meta-analysis findings. However, 44 studies which were included in this study are the total number of studies which meet the inclusion criteria and which are available among all the studies conducted on this subject in Turkey. Since there is not any possibility to reach 500 more studies apart from these 44 studies, the acquired result has been accepted as another indicator of the absence of publication bias in this meta-analysis.

4.2 Uncombined Findings of Effect Size Analysis Based on the Gender of Teacher

Effect sizes of male and female teachers' perceptions related to EILCTDR, standard error, and its upper and lower limits based on a reliability level of 95% are given in Table 1.

Table 1: Effect Sizes of Teachers' Perception of Intimidation Based on Their Genders

Name of the Study	Effect size (d)	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value	Sample Female	Number Male
Akyol, 2013	-0,42	0,13	0,02	-0,67	-0,17	-3,30	0,00	124	125
Arslantaş, 2007	-0,10	0,06	0,00	-0,22	0,02	-1,65	0,10	518	520
Ateş, 2014	-0,26	0,13	0,02	-0,52	0,00	-1,98	0,05	171	86
Balcı, 2012	-0,29	0,09	0,01	-0,46	-0,12	-3,29	0,00	292	249
Ciğer, 2006	-0,08	0,10	0,01	-0,28	0,12	-0,81	0,42	144	282
Demir, 2009	-1,06	0,12	0,01	-1,29	-0,83	-9,01	0,00	183	151
İnal, 2008	-0,13	0,13	0,02	-0,39	0,14	-0,93	0,35	105	117
İşlek, 2007	0,00	0,09	0,01	-0,18	0,18	0,00	1,00	281	200
Karan, 2010	0,01	0,10	0,01	-0,19	0,22	0,14	0,89	265	142
Kavas, 2005	-0,10	0,08	0,01	-0,26	0,06	-1,19	0,23	296	308
Köroğlu, 2011	-0,19	0,11	0,01	-0,40	0,02	-1,75	0,08	216	145
Kunduz, 2007	-0,10	0,08	0,01	-0,25	0,06	-1,22	0,22	324	310
Ovalı, 2010	-0,18	0,11	0,01	-0,40	0,05	-1,56	0,12	170	145
Özer, 2010	-0,49	0,12	0,01	-0,72	-0,26	-4,23	0,00	114	234
Özgözcü, 2008	-0,11	0,10	0,01	-0,32	0,09	-1,07	0,29	263	139
Şahin, 2005	-0,34	0,09	0,01	-0,52	-0,16	-3,67	0,00	218	262
Şener, 2011	0,15	0,15	0,02	-0,15	0,45	0,98	0,33	95	79
Şener, 2011-	-0,34	0,17	0,03	-0,67	-0,01	-2,02	0,04	80	66
Dağlı, 2001	-0,14	0,11	0,01	-0,35	0,07	-1,33	0,18	187	166
Köklüand Kunduz, 2011	-0,10	0,08	0,01	-0,25	0,06	-1,22	0,22	324	310
Gökalp, 2010	0,08	0,06	0,00	-0,04	0,20	1,24	0,22	514	555
Memiş and Akay, 2013	-3,62	0,36	0,13	-4,32	-2,93	-10,18	0,00	52	33
Memiş and Gülen, 2007	0,15	0,20	0,04	-0,24	0,54	0,76	0,45	54	48
Memişoğlu, 2004	-0,27	0,22	0,05	-0,70	0,15	-1,26	0,21	41	45
Köroğlu and Oğuz, 2011	-0,19	0,11	0,01	-0,40	0,02	-1,75	0,08	216	145
Memduh and Maz, 2014	0,00	0,15	0,02	-0,28	0,29	0,00	1,00	74	132
Korkmaz and Özd. 2005	-0,06	0,11	0,01	-0,27	0,14	-0,60	0,55	159	201
Uğurlu and Merve.,2013	-0,07	0,14	0,02	-0,33	0,20	-0,49	0,63	91	131
Erdemand Eroğul, 2012	0,07	0,10	0,01	-0,26	0,13	-0,67	0,50	193	215
Dağlı, 2001	-0,07	0,11	0,01	-0,28	0,13	-0,69	0,49	194	168
Bostancı et al, 2011	-0,49	0,11	0,01	-0,70	-0,28	-4,62	0,00	215	161
Yıldız, Akb. ,Üre., 2016	-0,07	0,09	0,01	-0,24	0,11	-0,77	0,44	246	266
Gökyer, 2009	0,08	0,10	0,01	-0,11	0,27	0,81	0,42	222	189
Altındağ, 2007	0,10	0,10	0,01	-0,10	0,30	0,98	0,33	218	166
Güven, 2011	-0,21	0,13	0,02	-0,47	0,05	-1,56	0,12	85	173
Eroğul, 2012	0,00	0,10	0,01	-0,19	0,19	0,00	1,00	193	215
Ateş, 2007	-0,20	0,09	0,01	-0,39	-0,02	-2,17	0,03	215	240
Şarlak, 2009	-0,22	0,10	0,01	-0,42	-0,01	-2,09	0,04	210	170
Güner, 2013	-0,09	0,11	0,01	-0,30	0,12	-0,85	0,40	200	154
Durmuş, 2014	0,06	0,08	0,01	-0,10	0,21	0.72	0,47	348	309
Süzerler, 2013	0,19	0,10	0,01	-0,01	0,38	1,85	0,06	318	147
Göktaş, 2008	0,01	0,11	0,01	-0,21	0,38	1,85	0,06	125	204
Kıraland Aksoy, 2018	0,35	0,15	0,02	0,06	0,65	2,37	0,02	97	85
İmren, 2017	0,30	0,16	0,02	-0,01	0,61	1,92	0,05	53	169
Random Effects Model	-0,15	0,04	0,00	-0,23	-0,07	-3,66	0,00	**7762**	**7443**

According to the results of the study, from the point of gender variable, a statistically insignificant level of effect size (d=-0,15; [-0,23/-0,07]) (Thalheimer and Cook, 2002) was detected for the benefit of male teachers as indicated by random effects model. This result has showed that gender variable does not have a statistically significant effect on teachers' perceptions with regard to EIs' levels of carrying out their duties and roles.

4.3 Forest Plot of Studies Including Data about Gender

Forest plot of 44 studies which include data about gender and were included in the study is presented in Figure 2.

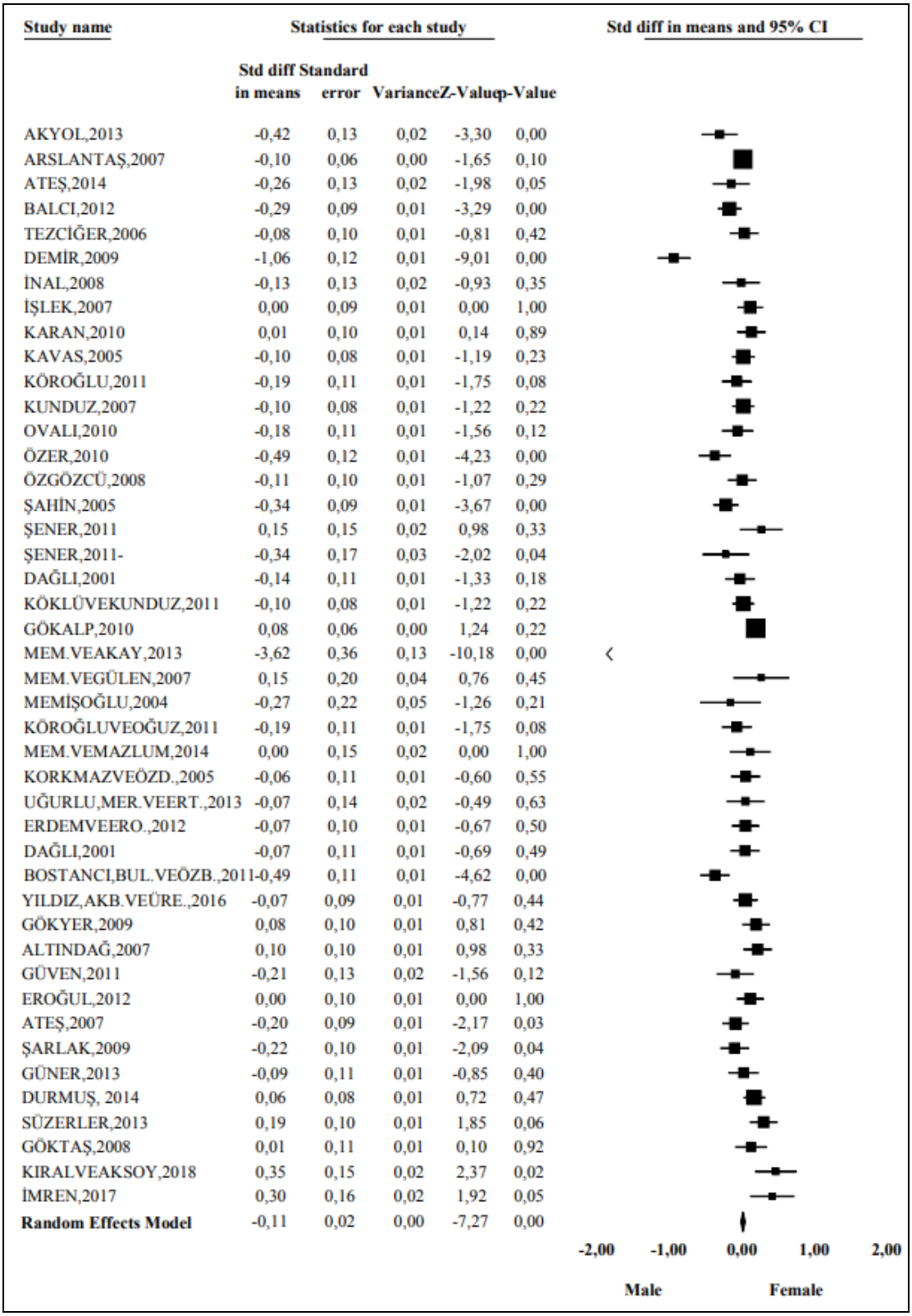

Figure 2: Forest Plot of Effect Sizes of Studies Related to Gender Variable

When Figure 2 is analyzed, it is observed that there is a difference less than zero for the benefit of male teachers. The fact that there is a difference for the benefit of male teachers can be interpreted as that they have more positive perceptions about EILCTDR compared to female teachers.

4.4 Findings of Effect Size Meta-Analysis of Teachers' Perceptions Related to EILCTDR Based on the Gender of Teacher Which Were Combined in Accordance with Fixed and Random Effects Models and the Results of Heterogeneity Test

Combined in accordance with random effects model, average effect size values of the effect sizes of perception of female and male teachers with regard to EILCTDR are given in Table 2.

Table 2: Results of Effect Size Meta-Analysis of Studies Which Were Combined in Accordance with Random Effects Model and the Results of Homogeneity Test

Model	Effect size and 95% confidence interval							Heterogeneity		
	Number of studies	Effect size	Standard error	Variance	Lower limit	Upper limit	Z-value	Q-value	df (Q)	I^2
Fixed effects	44	-0,11	0,01	0,00	-0,14	-0,08	-7,26	268,39	43	83,97
Random effects	44	-0,15	0,04	0,00	-0,22	-0,06	-3,65			

According to Table 2, the average effect size value of the effect size values of the studies included in the research in accordance with gender variable was calculated as d=-0,15 in accordance with random effects model; standard error of the average effect size was calculated as SE=0,04; and the upper limit and lower limit of the average effect size were calculated respectively as -0,06 and -0,22. According to random effects model, data of 44 studies included in the meta-analysis in accordance with these calculations revealed that male teachers have more positive perceptions about EILCTDR compared to female teachers. In the evaluation of effect size, in Cohen's classification, if d equals to 0,20-0,50, effect size is low; if it is 0,50-0,80, effect size is medium; and if it is higher than 0,80, effect size is high (Cohen, 1988, p. 40). Since the effect size value is lower than 0,20 in this study, it was determined that it has an effect even less than the lower level in accordance with Cohen's classification. In Lipsey's classification, it was stated that there is an effect even less than the lower level when the effect size is lower than 0,15. According to the classification of Thalheimer and Cook (2002), $-0.15 < d < 0.15$ means insignificant level of effect size; $0.15 < d < 0.40$ means low level of effect size; $0.40 < d < 0.75$ means medium level of effect size; $0.75 < d < 1.10$ means high level of effect size; $1.10 < d < 1.45$ means very high level of effect size; and $1.45 < d$ means perfect level of effect size. According to this classification, it was observed that there is an insignificant difference (-0.15 – 0.15). When statistical significance was calculated in accordance with Z test, Z was found as -3.65.

For the homogeneity test, in other words for Q-statistics, Q was calculated as 268.39. In x^2 table, on a 95% significance level, 43 degrees of freedom value was found as 29.50. Since Q-statistics value (Q=710,24) exceeded 43 degrees of freedom, and critical value of chi-square distribution (x^2 0,95 =29,50), the hypothesis related to the absence of homogeneity of the distribution of effect sizes was rejected in the fixed effects model. Thus, distribution of effect sizes was determined to be heterogeneous in accordance with fixed effect model. I^2, which was developed as a supplement to Q statistics, puts forth a clearer result concerning heterogeneity (Petticrew and Roberts, 2006; Yıldırım,

2014). I^2 shows the rate of total variance related to the effect size. Unlike Q-statistics, I^2 result is not affected by the number of study included in the research. During the interpretation of I^2 25% indicates a low-level heterogeneity, 50% indicates a mid-level heterogeneity and 75% shows a high-level heterogeneity (Cooper et al., 2009).

Since a level of heterogeneity close to a high-level heterogeneity was found as a result of the performed homogeneity tests (Q and I^2) for gender variable, moderator analyses were carried out in order to identify possible results of this heterogeneity. Results of the moderator analysis carried out to reveal the reasons of heterogeneity occurred by gender variable are given in Table 3.

Table 3: Categorical Moderator Results Concerning the Effect of Teachers' Genders on EILCTDR

Moderator	k	d	SE	%95 CI	Q
Publication Type					0,76
MA Thesis	28	-0,13	0,04	[-0,22; -0,04]	
PhD Thesis	1	-0,10	0,06	[-0,22; 0,02]	
Article	15	-0,20	0,09	[-0,38; -0,01]	
Level of Education					10,90
Private Education	1	-0,09	0,10	[-0,30; 0,11]	
Primary	37	-0,16	0,04	[-0,25; -0,07]	
Secondary	2	-0,25	0,08	[-0,42; 0,07]	
Primary-Secondary	4	-0,04	0,01	[-0,07; 0,15]	
Region of Research					7,98
Mediterranean	4	-0,11	0,08	[-0,29; 0,06]	
Eastern Anatolia	5	-0,00	0,08	[-0,15; -0,16]	
Aegean	5	-0,14	0,08	[-0,30; 0,00]	
Southeastern	4	-0,10	0,04	[-0,18; 0,01]	
Central Anatolia	8	-0,03	0,07	[-0,18; 0,12]	
Blacksea	9	-0,46	0,17	[-0,80; -0,12]	
Marmara	9	-0,18	0,10	[-0,39; 0,01]	
Title of the Teacher					0,98
Classroom	8	-0,10	0,05	[-0,21; 0,00]	
Branch	4	-0,10	0,09	[-0,30; 0,11]	
Classroom-Branch	31	-0,17	0,05	[-0,27; 0,06]	
Private Education	1	-0,09	0,10	[-0,30; 0,11]	
Gender of the Researcher					2,01
Male	30	-0,18	0,05	[-0,28; -0,07]	
Female	11	-0,10	0,06	[-0,19; 0,06]	
Male/Female	3	-0,06	0,06	[-0,19; 0,06]	

Note: k=number of studies, d= Cohen's d (SMD), SE=Standard Error CI= Confidence interval, Q=Heterogeneity between studies, Comparison analyses were carried out for studies which have 2 or more subgroups. *p<.05

It was identified that effect sizes of studies do not vary by publication type (p=0,68), the region where study was carried out (p=0,23), branches of teachers (p=0,80), and gender of the researcher (p=0,36). It was also observed in respect of years that the fact that male teachers have more positive perceptions about EILCTDR compared to female teachers has continued from the point of effect sizes of researches. It was identified that effect sizes vary by the level of education (p=0,01). It was observed that teachers who work in secondary education level have more positive perceptions about EILCTDR compared to teachers who work in other levels.

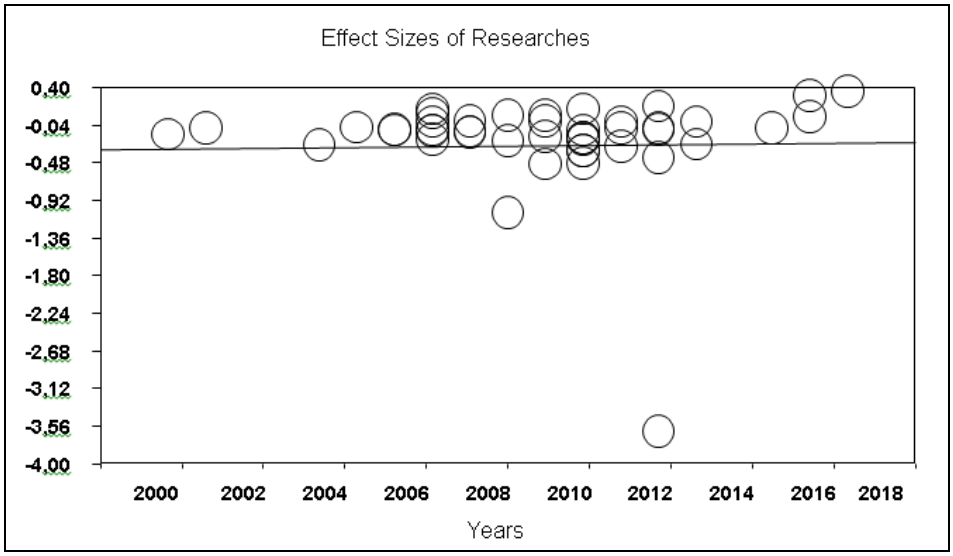

Figure 3: Meta-Regression Results of Effect Sizes with Regard to the Years When the Study was Carried Out

As observed in Figure 3, there is not any visible difference in gender difference by years from the point of effect sizes of researches.

4.5 Findings Related to Seniority Variable

Findings obtained in terms of the seniority variable within the scope of meta-analysis study (publication bias, forest plot, random effects model, and moderator analysis) are given in this chapter.

4.6 Publication Bias

It has been observed that majority of 33 studies within the scope of the research accumulate towards the top part of the figure and are close to the combined effect size. This funnel scatter plot is one of the indicators of the absence of a publication bias in terms of the studies included in this study (Figure 4).

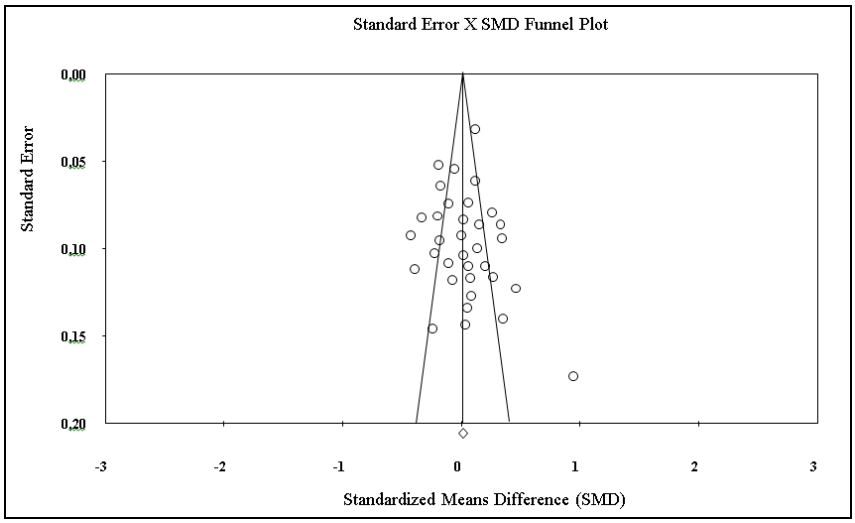

Figure 4: Funnel Plot of Effect Sizes of Studies Related to Seniority Variable

As a second test to check publication bias, Orwin's Fail-Safe N calculation was also made. For the average effect size, which was found as 0,05 as a result of the meta-analysis, to reach the level of 0,01 (trivial) - to reach almost zero effect level – the necessary number of studies is 18. In other words, it shows how many more studies are needed in order to eliminate significance in meta-analysis findings. However, 33 studies which were included in this study are the total number of studies which meet the inclusion criteria and which are available among all the studies conducted on this subject in Turkey. Since there is not any possibility to reach 18 more studies apart from these 33 studies, the acquired result has been accepted as another indicator of the absence of publication bias in this meta-analysis.

5. Uncombined Findings of Effect Size Analysis Based on the Seniority of Teacher

Effect sizes of teachers' perceptions related to EILCTDR ranked from negative values to positive values, standard error, and its upper and lower limits based on a reliability level of 95% are given in Table 4.

Table 4: Effect Sizes of Teachers' Perception of Intimidation Based on Their Seniorities

Name of the Study	Effect size (d)	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value	Sample Female	Number Male
Arslantaş, 2007	0,18	0,06	0,00	0,06	0,30	2,95	0,00	537	531
Ateş, 2014	0,03	0,16	0,02	-0,27	0,34	0,22	0,83	51	206
Balci, 2012	0,26	0,10	0,01	0,07	0,45	2,67	0,01	149	392
İnal, 2008	0,27	0,14	0,02	-0,01	0,54	1,91	0,06	143	79
İşlek, 2007	0,00	0,09	0,01	-0,18	0,18	0,00	1,00	281	200
Karan, 2010	0,01	0,10	0,01	-0,19	0,22	0,14	0,89	265	142
Kavas, 2005	-0,20	0,10	0,01	-0,40	0,00	-1,95	0,05	116	488
Köroğlu, 2011	0,08	0,13	0,02	-0,19	0,34	0,57	0,57	69	292
Kunduz, 2007	0,33	0,10	0,01	0,13	0,53	3,19	0,00	149	259
Özer, 2010	1,48	0,19	0,04	1,11	1,85	7,79	0,00	36	234
Özgözcü, 2008	0,09	0,11	0,01	-0,12	0,30	0,81	0,42	129	273
Şahin, 2005	-0,30	0,09	0,01	-0,48	-0,12	-3,22	0,00	225	255
Şener, 2011	0,20	0,16	0,02	-0,11	0,51	1,27	0,20	108	66
Şener, 2011-	-0,25	0,17	0,03	-0,58	0,09	-1,42	0,16	53	93
KöklüandKu.,2011	0,06	0,09	0,01	-0,12	0,23	0,62	0,54	226	259
Gökalp, 2010	-0,74	0,07	0,00	-0,88	-0,61	10,69	0,00	308	761
Köroğl.Doğ., 2011	0,05	0,13	0,02	-0,21	0,32	0,41	0,68	69	292
MemduMaz.,2014	0,02	0,15	0,02	-0,28	0,31	0,10	0,92	142	64
KöybaşiandD.2012	1,79	0,12	0,01	1,57	2,02	15,47	0,00	442	120
Uğurlu,M.Ver,2013	0,08	0,14	0,02	-0,20	0,37	0,59	0,56	70	152
Erdemander, 2012	-0,50	0,15	0,02	-0,79	-0,21	-3,42	0,00	55	353
Dağli, 2001	-0,19	0,10	0,01	-0,39	0,02	-1,78	0,07	166	210
Yildiz, Akd., 2016	-0,20	0,10	0,01	-0,39	-0,01	-2,02	0,04	144	365
Gökyer, 2009	-0,34	0,10	0,01	-0,53	-0,14	-3,36	0,00	222	189
Altindağ, 2007	0,02	0,10	0,01	-0,19	0,22	0,17	0,86	238	147
Güven, 2011	0,00	0,12	0,02	-0,24	0,25	0,03	0,98	127	131
Ateş, 2007	-0,23	0,10	0,01	-0,43	-0,03	-2,21	0,03	136	319
Şarlak, 2009	-0,51	0,12	0,01	-0,74	-0,28	-4,37	0,00	102	280
Güner, 2013	0,06	0,11	0,01	-0,16	0,27	0,51	0,61	222	132
Durmuş, 2014	0,12	0,08	0,01	-0,03	0,27	1,53	0,13	309	348
Süzerler, 2013	0,13	0,10	0,01	-0,06	0,33	1,31	0,19	318	147
Kiralandaksoy, 2018	0,35	0,17	0,03	0,06	0,69	2,06	0,04	45	150
İmren, 2017	0,46	0,14	0,02	0,19	0,74	3,29	0,00	138	84
Random Effects Model	0,07	0,08	0,01	-0,08	0,23	0,95	0,34	5790	8013

According to the results of the study, from the point of seniority variable, a statistically insignificant level of effect size (d=0,07; [-0,08/0,23]) (Thalheimer and Cook, 2002) was detected for the benefit of teachers with 1-10 years of experience as indicated by random effects model. This result has showed that seniority variable does not have a statistically significant effect on teachers' perceptions with regard to EILCTDR.

5.1 Forest Plot of Studies Including Data about Seniority

Forest plot of 33 studies which include data about gender and were included in the study is presented in Figure 5.

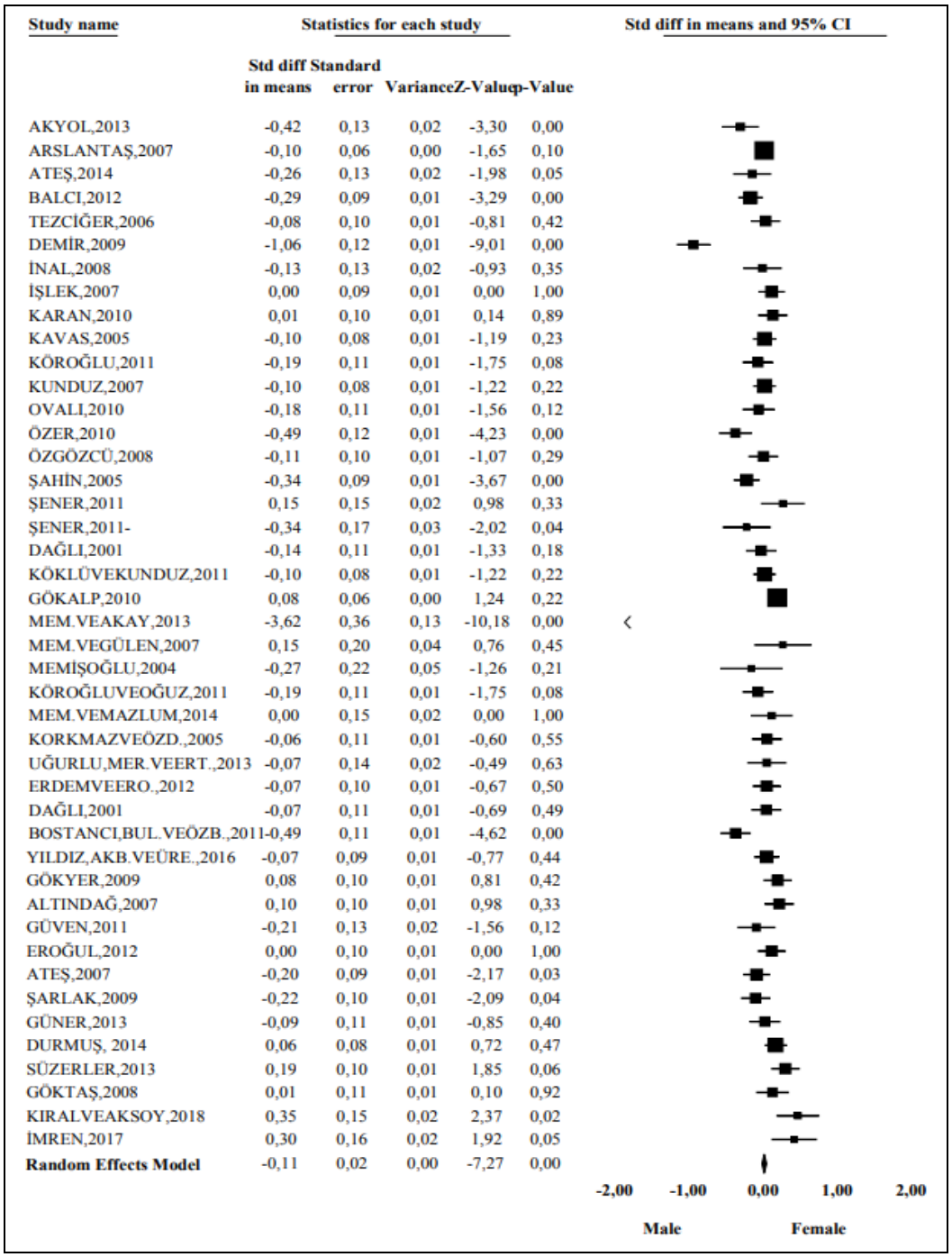

Figure 5: Forest Plot of Effect Sizes of Studies Related to Seniority Variable

When Figure 5 is analysed, from the point of seniority variable, a statistically insignificant level of effect size (d=0,07; [-0,08/0,23]) was detected for the benefit of teachers with 1-10 years of experience as indicated by random effects model.

5.2 Findings of Effect Size Meta-Analysis of Teachers' Perceptions Related to EILCTDR Based on the Seniority of Teacher Which Were Combined in Accordance with Fixed and Random Effects Models and the Results of Heterogeneity Test

Combined in accordance with random effects model, and according to seniority of teacher, average effect size values of the effect sizes of perception of teachers with regard to EILCTDR are given in Table 6.

Table 6: Results of Effect Size Meta-Analysis of Studies Which Were Combined in Accordance with Random Effects Model and Homogeneity Test

Model	Effect size and 95% confidence interval							Heterogeneity		
	Number of studies	Effect size	Standard error	Variance	Lower limit	Upper limit	Z-value	Q-value	df (Q)	I^2
Random effects	33	0,07	0,08	0,01	-0,08	0,23	0,95	536,79	32	94,03

According to the results of the study, from the point of seniority variable, an effect size with statistical significance at an insignificant level (d=0,07; SH=0,08) (Thalheimer and Cook, 2002) was determined for the benefit of teachers with 1-10 years of experience as indicated by random effects model. This result has showed that seniority variable has a statistically insignificant level of effect on teachers' perceptions with regard to EIs' level of carrying out their duties and roles.

Since the effect size value is lower than 0,20 in this study, it was determined that there is a low level of effect in accordance with Cohen's classification (Cohen, 1988, p. 40). Since the effect size value is lower than 0,15 in also Lipsey's classification, there is a low level of effect (Lipsey, 2000). According to the classification of Thalheimer and Cook (2002), it was observed that there is an insignificant level of difference (-0.15 -0,15). For the homogeneity test, in other words for Q-statistics, Q was calculated as 536,79. In x^2 table, on a 95% significance level, 32 degrees of freedom value was found as 19,75. Since Q-statistics value (Q=536,79) exceeded 32 degrees of freedom, and critical value of chi-square distribution (x^2 0,95 =19,75), the hypothesis related to the absence of homogeneity of the distribution of effect sizes was rejected in the fixed effects model. Thus, distribution of effect sizes was determined to be heterogeneous in accordance with fixed effect model. Since a level of heterogeneity close to a high-level heterogeneity was found as a result of the homogeneity tests carried out for seniority variable (Q and I^2 =%94,03), moderator analyses were carried out in order to identify possible results of this heterogeneity. Results of the moderator analysis carried out to reveal the reasons of heterogeneity occurred by seniority variable are given in Table 7.

Table 7: Categorical Moderator Results Concerning the Effect of Teachers' Seniority on EILCTDR

Moderator	k	d	SE	%95 CI	Q
Publication Type					1,78
MA Thesis	22	0,04	0,08	[-0,11; 0,20]	
PhD Thesis	1	0,18	0,06	[0,06; -0,30]	
Article	10	0,11	0,20	[-0,29; 0,51]	
Level of Education					13,70
Private Education	1	0,05	0,11	[-0,15; 0,27]	
Primary	26	0,10	0,09	[-0,08; -0,29]	
Secondary	2	-0,40	0,13	[-0,66; -0,15]	
Primary-Secondary	4	0,09	0,04	[-0,001; 0,18]	
Region of the Research					10,37
Mediterranean	4	-0,30	0,23	[-0,75; 0,15]	
Eastern Anatolia	6	0,29	0,34	[-0,37; 0,97]	
Aegean	3	-0,19	0,15	[-0,50; 0,11]	
Southeastern	2	0,00	0,18	[-0,35; 0,36]	
Central Anatolia	6	0,30	0,16	[-0,01; 0,61]	
Blacksea	5	-0,05	0,10	[-0,25; 0,15]	
Marmara	7	0,11	0,04	[0,02; 0,21]	
Title of the Teacher					
Classroom	5	0,01	0,16	[-0,30; 0,34]	9,69
Branch	4	-0,28	0,10	[-0,49; -0,07]	
Classroom-Branch	23	0,14	0,09	[-0,30; 0,34]	
Private Education	1	0,05	0,11	[-0,15; 0,27]	
Gender of the Researcher					4,33
Male	23	-0,03	0,07	[-0,17; 0,11]	
Female	7	0,15	0,06	[-0,02; 0,27]	
Male/Female	3	0,64	0,58	[-0,50; 1,79]	

Note: k=number of studies, d= Cohen's d (SMD), SE=Standard Error CI= Confidence interval, Q=Heterogeneity between studies, Comparison analyses were carried out for studies which have 2 or more subgroups. *p<.05

It was identified that effect sizes of studies do not vary by publication type (p=0,42), the region where study was carried out (p=0,11), and gender of the researcher (p=0,11). It was observed that effect sizes of studies differ by the level of education (p=0,01) and the title of teacher (p=0,02). In the studies carried out in secondary level of education, it was observed that teachers who have 10 years or more experience have more positive perceptions about EILCTDR compared to other levels. It was also observed that branch teachers (with 10 years or more experience) have higher perceptions about EILCTDR compared to classroom, private education, and classroom-branch teachers.

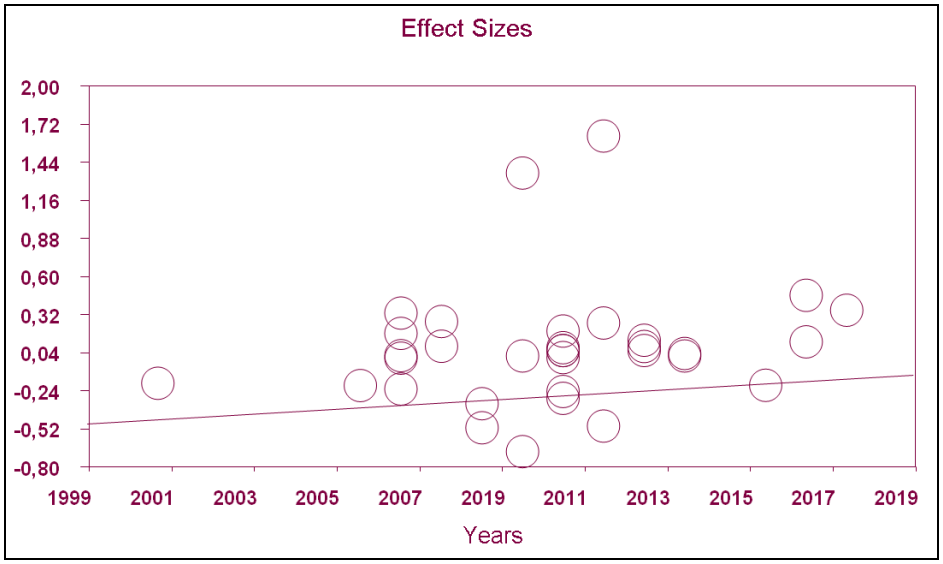

Figure 6: Meta-Regression Results of Effect Sizes with Regard to the Years When the Study was Carried Out

As observed in Figure 6, from the point of effect sizes of researches, the difference for the benefit of teachers who have 1-10 years of experience has still continued.

5. Conclusion and Recommendations

In this meta-analysis study, it has been observed that gender of teachers does not affect their levels of perception about EILCTDR. However, although perceptions of male teachers about EILCTDR are at a low level, they are still more positive compared to female teachers. Also in studies carried out by Altındağ (2007), Dağlı (2001), Gökalp (2010), Kavas (2005), Köroğlu (2011), Ovalı (2010), Memişoğlu and Kalay (2013), and Memduhoğlu, Mazlum, &Acar (2014) in the literature, it has been presented that gender of teachers does not affect their opinions about EILCTDR at a significant level. These studies support the results of the meta-analysis.

In the study carried out by Demir (2009) and Özer (2010), it has been revealed that there is a lack of communication between EI and female teachers. The fact that female teachers have lower level of perception about EILCTDR compared to male teachers has been explained through the reasons that there is not a positive communication between education inspectors and female teachers and the number of female education inspectors is less. This result partly supports the results of this meta-analysis study.

It has been determined that opinions of teachers about EILCTDR do not vary depending on occupational seniority groups. This result can be interpreted as that occupational seniority of teachers does not change their perceptions about EI. This situation has presented that teachers who are in their early years in this occupation have same perceptions with teachers who have more years of experience. In the study carried out by Köroğlu and Oğuz (2011), it has been observed that there is not a

significant difference in opinions of teachers and principals about the guidance performed by education inspectors with regard to gender, field of teacher, and occupational seniority variables. In various studies (Aküzüm and Özmen, 2013; Can, 2004; Şahin, 2017), it has been put forth that since EIs have high variety of duties and roles, and high levels of workload, they cannot carry out their duties and roles of recognizing teachers, help, and guidance at the desired level. This negative situation causes the fact that teachers are not supervised enough and not given enough time. Since there is not enough cooperation with teachers and there is not objective observation and evaluation, it causes the supervision to be carried out superficially.

The fact that gender and seniority of teachers have an insignificant level of effect on their perceptions about EILCTDR can be perceived as that personal traits of teachers are not taken into consideration or not paid attention during the supervision. It can be affected by the fact that EIs may have lacks about communication, time, workload, and efficacy. Results of this meta-analysis reveal that there is a need to actualize clinical, developmental, and differential supervision practices in order to recognize personal and professional qualities of teachers. A counselling process based on the mutual trust, cooperation, and recognition between the teacher and EI should be created. Especially the fact that perceptions of teachers about EILCTDR do not change depending on the seniority variable can be discussed as an indicator that problems continue and the supervision system needs to be renewed. The meta-synthesis study carried out by Aküzüm and Özmen (2013) also supports these comments. Within the scope of the results of the meta-analysis, models and approaches which can change perceptions of teachers about EI's duties and roles into positive should be brought to agenda.

In 2023 Education Vision Document, it is stated that supervision process and roles of inspector shall be restructured in order to provide guidance services needed by teachers and schools. Within this scope, structuring guidance in the supervision system in accordance with school development model, and teacher and school based guidance are highlighted. 2023 Education Vision highlights guidance dimension of supervision system which aims to develop schools (MEB, 2018). With the emphasis on school based supervision and occupational development practices, policy decisions about this should focus on development of teachers' qualities.

Apart from multidimensional quality of EI's duties and roles in Turkish Educational System, an interesting development is that duties and roles of supervising teachers/classes are also abolished in this process. Supervision system has been attempted to be changed from the supervision of individual to supervision of process and institution. Occupational developments and supervisions of teachers are assigned to the school principal. Thus, a new field of problem has emerged for the issue that with which knowledge, authority, and specialty school principals shall supervise. Giving school principals the authority to supervise teachers makes it obligatory to make radical changes in the supervision system. Within this scope, developmental, clinical, and differential supervision practices focusing on monitoring the process should be actualized by leaving the supervision process which takes short time and does not focus on recognizing and developing the teacher. It can be predicted that with the latest

changes, perceptions of teachers about supervision system shall highly change; because a model, structure, and process have not been presented by MEB about how school principals shall carry out supervision task by both being the primary registry chief and having the authority of supervision. It is hard to say that educational administrators have the necessary qualification to perform supervision duties, roles, and responsibilities. Within the scope of school based supervision and development system, an effective coordination between school principals and EI working for provincial directorate for national education should be provided. Different approaches should be implemented especially about the quality and process of the interaction between EI, school administrators, and teachers. In the study carried out by Kayıkçı, Özdemir and Özyıldırım (2018), the necessity to establish a supervision system increasing the interaction between teachers, principals, and inspectors, including supervision of teachers, and focusing on the development of program and education has been revealed.

The result that gender and seniority of teachers have an insignificant level of effect on their perceptions about EILCTDR can be evaluated as that apart from these variables, some external factors (satisfaction with the occupation, socio-economic level, award, communication, culture, qualities of inspector etc.) may also be effective. In the context of the results of this meta-analysis study, apart from the gender and seniority variables of teachers, meta-analysis studies can be carried out by using different variables predicting EILCTDR.

Acknowledgements
This study is an extended version of the paper presented in VIII. International Conference of Education Supervision (1-3 November 2017).

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Tufan Aytaç received his master's degree in Education Management and Inspection department from Ankara University in 1996. In 1999, he completed his PhD degree on Education Management and Inspect department from Ankara University. His doctorate thesis was on the school-based management. In 2016, he became associate professor of Education Administration. He published books, book chapters and articles on education management, talent management, school leadership and meta-analysis studies. He is currently working at Education Faculty, Kırşehir Ahi Evran University in Kırşehir.

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