

# The Effects of Gender on Attitudes of Preservice Teachers towards the Teaching Profession: A Meta-analysis Study

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**Abstract** The aim of this study is to define the effects of gender on attitudes of preservice teachers towards the teaching profession in Turkey. It combines the findings of 35 relevant studies comprising a sample of 4,289 male and 6,073 female preservice teachers. A Group Difference model was used to identify fixed and random effects and to facilitate comparison using meta-analysis methods. A significant effect size ( $d=0.271$ ) on an insignificant level was identified in favour of the gender attitudes of female preservice teachers. The location of the research, branch, and class level/educational status were also found to have moderating effects on attitudes.

**Keywords** Gender, Meta-analysis, Preservice Teachers, Professional Attitude

## 1. Introduction

Education continues to be a key investment in communities striving to raise individuals that can thrive within a knowledgeable and informed society. However, a major challenge for many of today's education systems remains how to effectively cohere the objectives of teachers, students, and curriculums. Deficit in any of these areas, or factors, directly affects the education process. The relations between such systemic factors are also important given that traditionally the influence of teachers on students and curriculums are higher than the others [1]. Since the quality and standard of education are majorly proportionate to the qualities of teachers, their proper training before service and in service is essential [2]. The success of an education system depends on the quality and the quantity of the teachers who will manage the system [3].

Recently, it has been observed that important structuring processes occur during teacher training. However, in the

background to several studies, there are the criticisms towards teacher training programs, and therefore, the aim of raising qualified teachers [4]. In the training of qualified teachers, perspectives of preservice teachers towards the occupation take an important place. In the emergence of the perspectives of preservice teachers towards the occupation, the programs that train them have important effects [5]. Teachers can perform their expected roles effectively to the extent that they recognize themselves and their occupation in pre-service training [6]. Determinants of the occupational behaviours of teachers are their attitudes towards their occupation. The way that teachers perceive their occupation will reflect their "perception of the teaching profession." Therefore, the learning experience of preservice teachers provides a basis for the creation of their occupational perception [7].

Teachers help students to acquire some behaviour by becoming role models with their knowledge, attitudes, behaviours, and personalities. Within this process, among the qualities that teachers have to possess, there are general knowledge, field information and professional teaching knowledge, as well as the attitudes they develop towards their occupation [8,9]. The attitude of individuals towards their occupations is the most important factor that is effective in their occupational success [10].

Teachers' attitudes towards their occupation indicate that they love their profession; they are attached to it; they reach the awareness that their work is important and necessary for society; and, they believe that they have to improve themselves because of it [11]. Attitudes of teachers towards their occupation also have an important influence on their performance [12]. Positive attitude towards the teaching profession will ensure the coherence of behaviours and emotions when preservice teachers start to perform their duty; and will positively affect all the factors related to teaching [13].

Knowing the attitudes of preservice teachers towards their occupation will help their trainers to address them during prevocational training [14]. In this context, studies conducted to identify preservice teachers' Attitudes towards Teaching Profession (ATTP) gain importance.

A number of qualitative and quantitative studies have been conducted on the ATTP of teachers in Turkey. These have used various scales and considered different independent variables (gender, branch, marital status, level of education, the faculty they graduated from, superiority etc.). Together this body of research has produced statistically both significant and insignificant results along with others that show differences between the subgroups of independent variables. Meta-analysis is required to synthesize the findings of this research and to guide future studies concerning the opinions of preservice teachers in relation to ATTP. Tekerek and Polat [15] suggested that since studies conducted on attitudes towards the teaching profession reach different results, to analyse these differences more deeply, different study methods, and more comprehensive and different samples should be used. The fact that the number of the studies about the opinions of teachers on ATTP has increased recently reveals the need for discovering a common result by compiling the results and considering the numbers of samples, and the need for synthesis. As no meta-analysis study on the opinions of preservice teachers on ATTP currently exists in the relevant literature, the findings of this study will help to define the effects of gender on ATTP of preservice teachers and enable researchers to conduct studies in this field within the context of different variables.

## 2. Method

In this study, with the aim of defining the effects of gender on ATTP of preservice teachers, meta-analysis of relevant research was conducted in Turkey.

### Pattern of the Research

Being one of the methods to synthesize research results, meta-analysis informs the pattern of this research and involves analysis, synthesis, and interpretation of the quantitative findings acquired from independent studies through advanced statistical techniques. The aim of a meta-analysis is to unite the findings acquired from studies conducted on the same subject in different places and times and to reach quantitatively the truest through increasing the number of samples [16-19].

### Data Collection Tool

Master theses, Ph.D. dissertations, and articles about the ATTP of preservice teachers in Turkey constitute the basic data source of this research. To access the relevant studies, a search was conducted using the key words "attitude towards teaching profession," "opinions towards teaching profession," and "attitude towards the teaching profession". A variety of databases was consulted including the YOK National Thesis Archive, EBSCO, Sciencedirect, Proquest, Tübitak ULAKBİM, Web of Science, ERIC and Google Scholar. All relevant studies undertaken until February 2015 were noted. In the selection of the included studies, the following inclusion criteria were adopted [16, 20];

Research methods used in the studies should be appropriate, and the studies should include the necessary statistical data for meta-analysis,

1. They should be published or unpublished M.A. theses, Ph.D. dissertations, and research articles,
2. Sample group should consist of preservice teachers,
3. Validity and reliability data of the measuring tools should be given.

Within the scope of the above-given, the data concerning the number and sample sizes of the included studies are given in Table 1. Among the studies identified from the initial search, 35 studies were selected for meta-analysis within the context of the gender variable.

**Table 1.** Number and Sample Sizes of the Studies Included in the Meta-Analysis

ATTP	Gender				Study Type			
	Number of Studies	Female	Male	Total	Number of Studies	Postgraduate Thesis	Article	Total
	35	6073	4298	10371	35	11	24	35

After the scan of the literature, it was determined that from 60 studies conducted on the research topic, 35 studies met the inclusion criteria. As this body of research was carried out on different samples (teachers, faculty members, students of teacher high school) and did not have the necessary statistical data for meta-analysis, 25 studies were not included in the research. The sample of this research is limited to the data of 11 M.A. theses and Ph.D. dissertations, and 24 research articles conducted in Turkey on this subject between the years 2004 and 2015.

*Reliability of the Research:* In the research, before the meta-analysis, to decide the studies to be included in the meta-analysis, a coding protocol concerning the identity, content, and data of the research was created. The year of the research, branches of teachers, gender of the researcher, location of the research, sample group, educational level, publication type, sample size, validity and reliability proof of the used measuring tools, sample size with regard to seniority/gender variables, average standard deviation, F value, t value,  $X^2$  value, Kruskal Wallis value, Mann Whitney U data, and p values were keyed in the coding protocol. To ensure the reliability (interrater reliability – IRR) between encoders, an inter-encoder reliability analysis form was used. Coding forms of the researchers were evaluated through a meeting with an Assessment and Evaluation expert and an evaluation was made about the studies to be included within the scope of this study. To secure the inter-encoder reliability, Cohen's Kappa statistic was used; and the reliability was found as 0.95. Such a result demonstrates an almost perfect coherence between encoders.

*Validity of the research:* In a meta-analysis, the data acquired from written sources are only valid if collection tools are able to measure what they try to measure. The data related to the unified effect size in the meta-analysis are as valid as the studies included in the analysis [21,22]. Validity of the collection tools used in the all studies included in the analysis will ensure the validity in the meta-analysis [18]. In the present study, 35 theses, dissertations, and research articles appropriate to the specified criteria were read, and the validity and reliability of their measuring tools was checked. Therefore, within this context, it can be said that this meta-analysis study is valid.

### **Analysis of the Data**

In the analysis of the data, according to group comparison meta-analysis methods (fixed effects and random effects models), a Group Difference model is used. In cases that arithmetic mean values of the independent variables in the study were not taken from the same scales, a standardized arithmetic means difference effect size method was used. While the effect size was being calculated, arithmetic means

and standard deviations of the body of research on the gender dimension were used. In this study, effect sizes and their variances, and the comparisons of the groups were calculated through the use of statistical Package Program for Meta-Analysis CMA Ver. 2.2.064 [Comprehensive Meta Analysis] [16, 18, 23].

A fixed effect model accepts that sizes of the study fields are the same, and, therefore deviation equals to zero. When the assumptions of the fixed effect model are not actualized, a random effects model is used. Thus, a random effects model means that individual sizes of the study fields are different and standard deviation does not equal to zero. This model enables us to make an evaluation by considering the change both within the studies and between the studies. If the study fields in the meta-analysis have the same size, a fixed effect model is used; if they are not, a random effects model is used [19,24,45]. If the results of the individual studies included in the meta-analysis are homogenous, a fixed effect model is used; if they are heterogeneous, random effects model is used [24]. In this study, the effect of the moderators, which are predicted to affect the results of the study, was defined with Q test [17,25]. Being developed as the complement of the Q statistics,  $I^2$  reveals a clearer result concerning to heterogeneity.  $I^2$  demonstrates the rate of total variance about effect size. Unlike Q statistics,  $I^2$  statistics is not affected by the number of studies. In the evaluation of the  $I^2$ , 25% indicates a low level of heterogeneity; 50% indicates a moderate level of heterogeneity; and, 75% indicates a high level of heterogeneity [26]. In the study, female teachers were the experimental group, and male teachers were the control group. Therefore, it is interpreted that if the calculated effect size is positive, it is for the benefit of females; and if the calculated effect size is negative, it is for the benefit of males.

## **3. Results**

The results acquired as a result of the analysis made with the aim of answering the problem of the research, publication bias, descriptive statistics, forest plot, findings of fixed and random effects models, homogeneity test, and results related to moderator analysis stated.

### **The Effects of Gender on ATTP of Preservice Teachers**

As the aim of this study was to define the effects of gender on ATTP of preservice teachers, it was necessary to establish whether each study included publication bias or not, prior to the effect size being defined. Showing the possibility of the publication bias, the results of the funnel scatter plot are given in Figure 1.

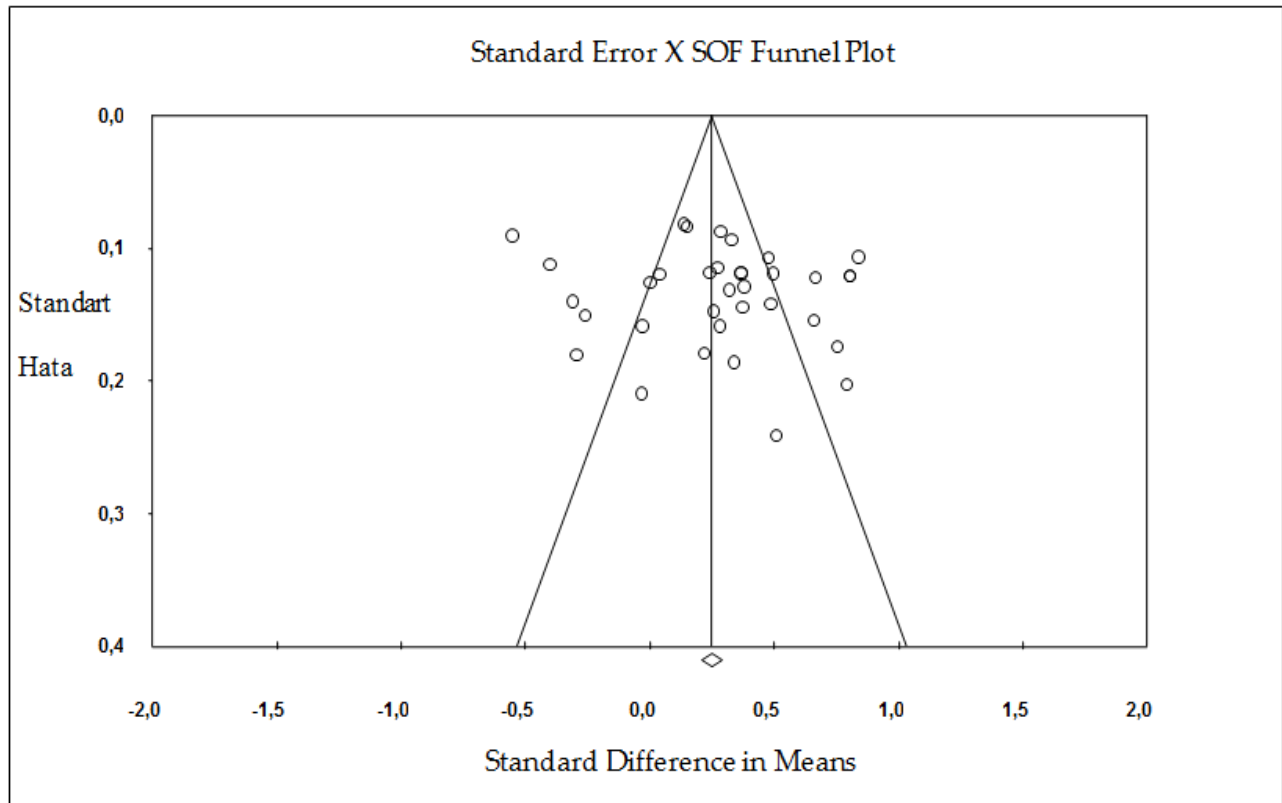


Figure 1. Funnel Scatter Plot With Regard to Gender Variable

As observed in the Figure 1, most of the 35 studies included in the research are situated towards the upper part of the shape and in a close position to the combined effect size. In cases that there is not publication bias, studies are expected to expand symmetrically along both sides of the vertical line, which shows the unified effect size. If there were publication bias in the 35 studies included in the research, most of the studies would be accumulated at the bottom of the funnel shape and/or only at one side of the vertical line [23]. In this sense, a funnel-shaped scatter plot displays that there is not publication bias with regard to the studies included in the research.

To test publication bias, Orwin's Fail-Safe N calculation was also made. Orwin's Fail-Safe N calculates the number of studies that may be lacking in a meta-analysis [23]. As a result of this analysis, Orwin's Fail-Safe N is calculated as 138. For the average effect size, which was found as 0.247 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 138. However, 35 studies, specified in accordance with the inclusion criteria, are the entire number of studies (qualitative, quantitative, theoretical, etc.) conducted on this subject in Turkey. Since it is not possible to access 138

studies, this result is considered as another indicator, which proves that there is not publication bias in this meta-analysis. Also, it is observed that Kendall's Tau coefficient, which is used to statistically calculate whether there is publication bias or not, is 0.006 and  $p=0.95$ ; in such case, since p value does not create a significant difference – since it satisfies the expectation of being more than 0.05 – it is statistically proven that there is not publication bias.

#### Uncombined Findings of the Effect Size Analysis With Regard to the Genders of Preservice Teachers

Effect sizes, standard error, and lower and upper limits of opinions of male and female preservice teachers concerning ATTP are given in Table 2, in accordance with 95% confidence interval.

According to Table 2, standardized means difference (SMD) of these 35 studies differs between the interval of -0.347 for the benefit of male teachers, and 0.486 for the benefit of female teachers. While statistically significant differences ( $p<0.05$ ) are found in twenty-two studies, in 13 studies, no significant difference is found. The confidence interval of thirty-five studies differs between -0.833 and 1.907.

**Table 2.** Effect Sizes of Preservice Teachers' Opinions Concerning ATTP With Regard to Their Gender

Model	Name of the Study	Effect Size (d)	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value	Number of Female	Sample Male
	Akıllı and Seven, 2010 <sup>8</sup>	0.221	0.180	0.032	-0.131	0.573	1.229	0.219	60	65
	Akkaya ,2009 <sup>27</sup>	0.488	0.142	0.020	0.209	0.766	3.436	0.001	147	78
	Akpınar et al. ,2006 <sup>28</sup>	0.368	0.119	0.014	0.134	0.602	3.083	0.002	151	135
	Aydın and Sağlam, 2012 <sup>29</sup>	0.382	0.129	0.017	0.129	0.636	2.955	0.003	132	113
	Bulut, 2011 <sup>30</sup>	0.242	0.119	0.014	0.009	0.475	2.036	0.042	171	122
	Çeliköz, 2010 <sup>31</sup>	0.339	0.186	0.035	-0.026	0.704	1.821	0.069	434	31
	Çapri and Çelikkaleli, 2008 <sup>32</sup>	0.321	0.132	0.017	0.062	0.580	2.433	0.015	92	158
	Çetinkaya, 2007 <sup>33</sup>	0.369	0.119	0.014	0.136	0.602	3.104	0.002	120	180
	Çetinkaya, 2009 <sup>34</sup>	0.662	0.154	0.024	0.359	0.965	4.286	0.000	128	67
	Çiçek Sağlam ,2008 <sup>35</sup>	0.793	0.203	0.041	0.395	1.191	3.905	0.000	64	44
	Çiğdem and Memiş, 2007 <sup>36</sup>	0.806	0.121	0.015	0.568	1.044	6.644	0.000	268	99
	Çiğdem, 2010 <sup>37</sup>	0.806	0.121	0.015	0.568	1.044	6.644	0.000	268	99
	Dağ, 2010 <sup>38</sup>	0.667	0.122	0.015	0.428	0.907	5.458	0.000	208	106
	Derman, 2007 <sup>39</sup>	-0.513	0.113	0.013	-0.735	-0.292	-4.547	0.000	190	141
	Diñcer, 2013 <sup>24</sup>	-0.028	0.159	0.025	-0.339	0.284	-0.173	0.863	58	124
	Gür and Güneş, 2012 <sup>40</sup>	-0.655	0.091	0.008	-0.833	-0.477	-7.229	0.000	311	218
	Gökçe and Sezer, 2012 <sup>41</sup>	0.331	0.094	0.009	0.146	0.515	3.513	0.000	371	165
	Gülsoy, 2010 <sup>42</sup>	-0.293	0.181	0.033	-0.647	0.061	-1.624	0.104	63	61
	Hacıömeroğlu and Taşkın, 2010 <sup>5</sup>	-0.030	0.210	0.044	-0.442	0.381	-0.144	0.885	32	78
	Kartal et al., 2012 <sup>43</sup>	-0.259	0.151	0.023	-0.554	0.037	-1.715	0.086	95	83
	Kaya, 2004 <sup>44</sup>	0.152	0.084	0.007	-0.013	0.316	1.809	0.070	224	392
	Ertok Konuk, 2011 <sup>45</sup>	0.139	0.082	0.007	-0.022	0.300	1.698	0.090	400	237
	Oğuz and Kalkan, 2011 <sup>46</sup>	0.005	0.126	0.016	-0.243	0.253	0.037	0.970	187	94
	Özder, Konedralı and Zeki, 2010 <sup>47</sup>	0.260	0.148	0.022	-0.030	0.549	1.756	0.079	139	69
	Pehlivan, 2010 <sup>48</sup>	0.274	0.115	0.013	0.048	0.500	2.380	0.017	163	143
	Pektaş and Kamer, 2011 <sup>49</sup>	0.480	0.108	0.012	0.269	0.690	4.457	0.000	242	140
	Serin et al. ,2004 <sup>50</sup>	-0.307	0.141	0.020	-0.583	-0.032	-2.184	0.029	112	94
	Sezer et al. ,2010 <sup>51</sup>	0.499	0.119	0.014	0.265	0.733	4.179	0.000	130	163
	Tanel et al. ,2007 <sup>52</sup>	0.285	0.159	0.025	-0.027	0.596	1.792	0.073	78	82
	Tekerek and Polat ,2011 <sup>15</sup>	0.375	0.145	0.021	0.090	0.659	2.583	0.010	88	107
	Tekneci, 2010 <sup>53</sup>	0.842	0.107	0.011	0.632	1.051	7.880	0.000	261	149
	Uğurlu and Polat, 2011 <sup>54</sup>	0.041	0.120	0.014	-0.193	0.276	0.344	0.731	221	102
	Üstüner, Demirtaş and Cömert, 2009 <sup>55</sup>	0.287	0.088	0.008	0.114	0.459	3.261	0.001	262	261
	Yeşil, 2011 <sup>56</sup>	0.755	0.174	0.030	0.413	1.097	4.330	0.000	60	85
	Yılmaz, 2009 <sup>57</sup>	0.509	0.291	0.085	-0.061	1.080	1.750	0.080	143	13
Fixed		0.247	0.021	0.000	0.206	0.288	11.722	0.000	6073	4298
Random		0.271	0.066	0.004	0.142	0.401	4.122	0.000	6073	4298

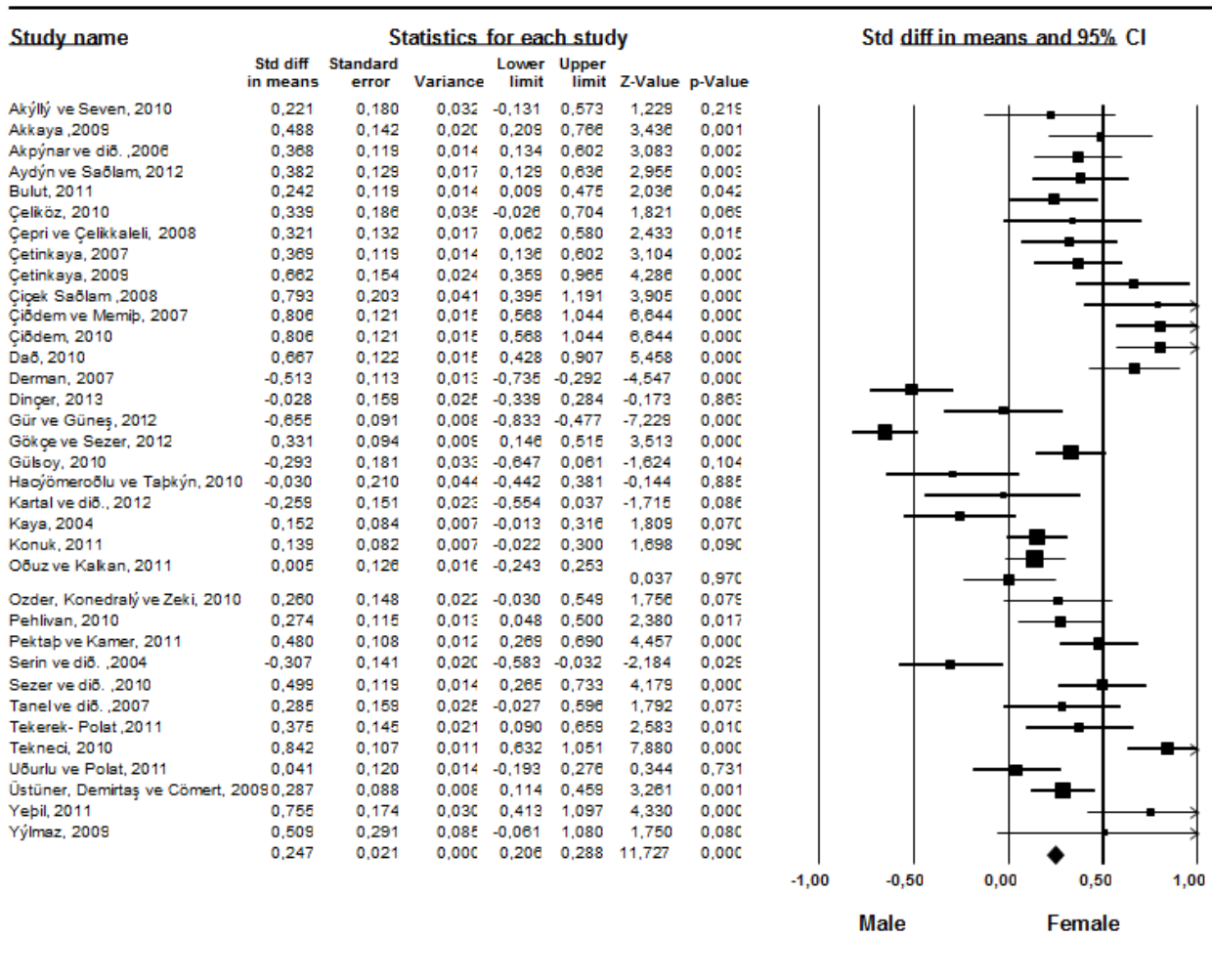


Figure 2. Forest Plot of the Effect Sizes Related to the Gender Variable

**Forest Plot of the Studies in relation to the gender variable.**

A forest plot related to the 35 studies that include data about the gender variable is displayed in Figure 2.

When Figure 2 is analysed, it is observed that there is a difference more than zero for the benefit of female preservice teachers. The fact that there is a difference for the benefit of female preservice teachers can be interpreted as such that their ATTPs are more positive compared to male preservice teachers.

**Findings of Effect Size Meta-Analysis Related to the Gender of Preservice Teachers Which Are Combined In Accordance With the Fixed and Random Effects Models**

Combined in accordance with the fixed and random effects model, the average effect size (without excluding outliers) of the effect sizes of the perceptions of female and male preservice teachers with regard to ATTP; standard error; and the lower and the upper limits in accordance with 95% confidence interval are given in Table 3.

Table 3. Findings of Effect Size Meta-Analysis Related to Gender Variable Which Are Combined In Accordance With Fixed and Random Effects Models 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 <sup>2</sup>
Fixed Effects	35	0.247	0.021	0.000	0.206	0.288	11.727	321.802	34	89.415
Random Effects	35	0.271	0.066	0.004	0.055	0.401	4.122			

According to fixed effects model, the average effect size value of the effect size values of the studies included in the research in accordance with the gender variable is calculated as  $d=0.247$  and the average effect size value based on the random effects model is calculated as  $d=0.271$  (Table 2). In accordance with these calculations, data of the 35 studies included in the meta-analysis demonstrate that according to fixed and random effects models, ATTPs of female preservice teachers are more positive than males. Since the effect size value is between 0.20-0.50, it is observed that according to the classification of Cohen and Lipsey, there is a low level of effect size [58]. According to the classification (0.15-0.40) of Thalheimer and Cook [59], a lower level of difference is observed.

When statistical significance is calculated in accordance with the Z test, Z is found as 4.122. It is determined that the acquired result has a statistical significance with  $p=0.005$ . For the homogeneity test, in other words for Q statistics, Q is calculated as 321.802. In chi square table, on a 95% significance level, 34 degrees of freedom value is found as 49.802. Since the Q statistics value ( $Q=321.802$ ) exceeds 34

degrees of freedom and the critical value of chi square distribution ( $\chi^2_{0,95}=49,802$ ), the hypothesis with regard to the absence of homogeneity of the distribution of effect sizes are rejected in the fixed effects model. Therefore, it is determined that the distribution of effect sizes has a heterogeneous characteristic in accordance with the fixed effects model.

As a complement to the Q statistics,  $I^2$  reveals a clearer result with regard to heterogeneity [19,22].  $I^2$  demonstrates the rate of the total variance with regard to effect size. Unlike Q statistics,  $I^2$  statistics are not affected by the number of the studies. In evaluation of  $I^2$ , 25% indicates a low level of heterogeneity; 50% indicates a moderate level of heterogeneity; and, 75% indicates a high level of heterogeneity [22]. As a result of the homogeneity tests (Q and  $I^2$ ) conducted on the gender variable, and since there is heterogeneity between studies, which is close to the high level, the model for the combination process was converted to a random model. The results of moderator analysis, which was carried out to reveal the reasons for this heterogeneity, are given in Table 4.

**Table 4.** Categorical Moderator Results With Regard to the Effect of Gender towards the ATTPs of Preservice Teachers

Moderator	k	d	SE	95% CI	Q
<b>Publication Type</b>					
M.A.	9	0.415	0.043	[0.331; 0.499]	40.761
Ph.D.	2	-0.086	0.066	[-0.216; 0.044]	
Article	24	0.236	0.026	[0.185; 0.287]	
<b>Location of the Research</b>					
Eastern Anatolia	4	0.213	0.060	[0.095; 0.331]	90.669
Aegean	9	0.325	0.045	[0.237; 0.414]	
Southeastern	3	0.591	0.098	[0.400; 0.783]	
Central Anatolia	5	-0.194	0.059	[-0.310; -0.079]	
Central Anatolia /Black sea	3	0.268	0.058	[0.154; 0.381]	
Black sea	3	0.553	0.071	[0.005; 0.693]	
Marmara	3	0.233	0.071	[0.094; 0.371]	
Marmara/ Central Anatolia	5	0.240	0.050	[0.142; 0.339]	
<b>Preparing Scale</b>					
Prepared	32	0.248	0.021	[0.206; 0.290]	0.040
Advanced	3	0.224	0.116	[-0.004; 0.452]	
<b>Branch of the Preservice Teacher</b>					
Pre-school	4	0.509	0.067	[0.377; 0.641]	38.748
Classroom	5	0.460	0.056	[0.350; 0.570]	
Branch	26	0.174	0.024	[0.127; 0.221]	
<b>Educational Status/Class Level</b>					
1 <sup>st</sup> grade	3	-0.194	0.064	[-0.320; 0.069]	60.886
1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> grade	19	0.344	0.027	[0.291; 0.398]	
4 <sup>th</sup> grade	10	0.209	0.044	[0.123; 0.295]	
Formation	3	0.223	0.080	[0.066; 0.380]	

NOTE: k=number of studies, d= Cohen's d (SOF), SE=Standard Error CI=confidence interval, Q=Heterogeneity between studies, Comparison analyses were made for those studies included in 2 or more subgroups.

\* $p<.05$

As a result of the moderator analysis, it is seen that the effect sizes of the studies differ ( $Q=38,748, p=0,001, p<0,05$ ) in accordance to the fields of preservice teachers. It is observed that the ATTPs of female preservice teachers in pre-school and classroom teaching departments are higher compared to preservice teachers in other branches.

The moderator effects of the studies are identified in accordance with the regions of the cities where the research was conducted ( $Q=90,669, p=0,034, p<0,05$ ). When the results of the research carried out within the scope of regions are analysed; while the results of research carried out in South-eastern Anatolia and Black Sea Regions (South-eastern Anatolia: 0.591 and Black Sea: 0.553) indicate that there is a high level of effect size result for the benefit of females, in the studies conducted in Central Anatolia Region as sample, the effect size changes for the benefit of males (Central Anatolia: -0.194).

As a result of the moderator analysis, it is identified that the effect sizes of the studies differ ( $Q=60,886, p=0,001, p<0,05$ ) in accordance with the educational status/class level of preservice teachers. When the educational status/class

level of preservice teachers is taken into consideration, it is observed that the ATTPs of especially female preservice teachers increase as their class levels increase.

As a result of the moderator analysis, it is identified that the effect sizes of the studies do not differ ( $Q=0,040, p=0,842, p>0,05$ ) in accordance with the preparation of scales (prepared or advanced).

Among the independent variables of the studies, which were included in the meta-analysis with regard to gender, Q statistics test were carried out, in accordance with the location of the research, educational status/level, field of teaching, and preparation of scale. As a result of the test, it is identified that apart from the preparation of scale variable, for all other moderators, intergroup distributions are heterogeneous, and the gender of preservice teachers affect the average effect size value.

As observed in Figure 3, with regard to the effect sizes of the research studies; it is observed that over time, there is a tendency of increase in the gender difference for the benefit of female preservice teachers.

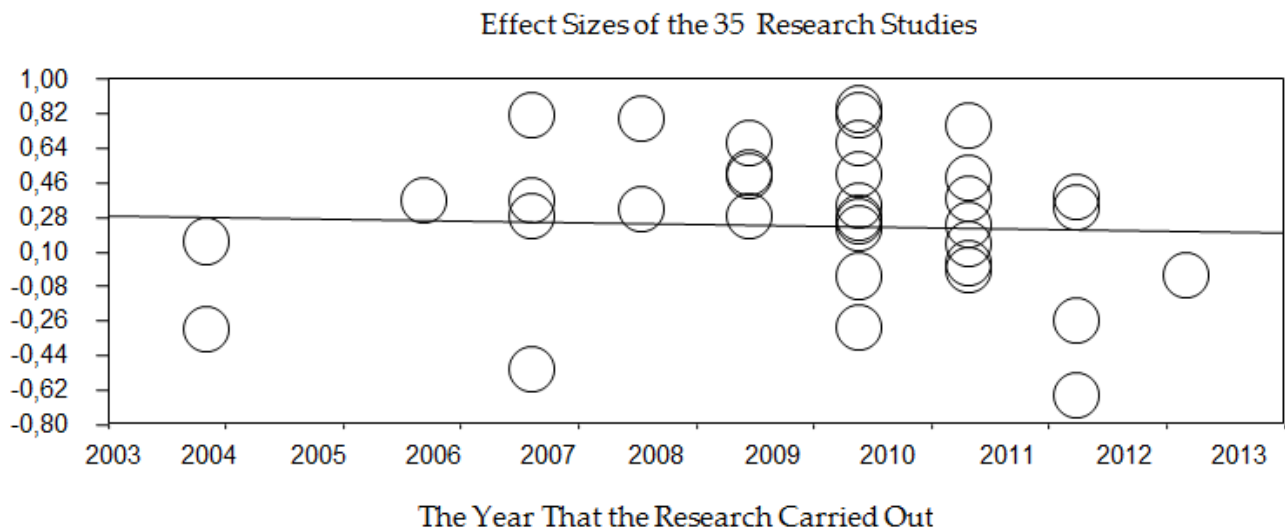


Figure 3. Meta-Regression Results of Effect Sizes Considering the Years That the Research Was Carried Out



## 4. Discussion and Conclusions

In this study, the effect sizes of 35 studies, which form a sample of 10371 preservice teachers, were calculated. While statistically significant differences were found in 22 of these studies; no significant difference was found in the other 13. As a result of the combination process in the random effects model, a statistically significant effect size, 0.271, is identified for the benefit of female teachers. According to the classifications of Cohen [58] and Thalheimer and Cook [59], this result is on the low level. When these results are evaluated together, it can be said that there is a low level of difference with regard to gender variable concerning the ATTPs of preservice teachers. As no meta-analysis study exists on the ATTPs of students with regard to gender, the opportunity to compare these results is not in question.

In the research carried out by [27,28,29,30,31,32,33,34,35,36,37,38,40,49,53,60,61,62,63,64,65] the finding for the benefit of females that there is a difference between the opinions concerning ATTPs with regard to the genders of teachers is supported by the results of this meta-analysis. Accordingly, it can be said that although on a lower level, the ATTPs of female teachers are more positive compared to male teachers. Within the scope of the results of this study, it can be stated that female teachers display more positive attitudes compared to male teachers and the idea that the teaching profession is more appropriate for females can be effective in such a situation. Besides finding that the teaching profession is regarded as an appropriate profession for females [66], it can be evaluated as one of the reasons for their higher ATTPs that female preservice teachers think that they can run family and work life together. In a report by TEDMEM named "Teaching Profession from the Eyes of Teachers," it is stated that the attitudes of female teachers towards their occupation are more positive compared to male teachers. This result demonstrates that attitudes of female preservice teachers are qualitatively better than males when they begin to perform their profession. According to the TEDMEM report, the teaching profession being a rewarding and reputable occupation; the idea that being a teacher gives meaning to the personality and occupation; and, its being among the respected occupations in society, contribute to the positive ATTPs of female teachers. The ideas that teachers are perceived as individuals who guide society, and the idea that the teaching profession is an ideal occupation, are among the reasons that encourage female teachers to enter the profession [64]. The attitudes of female teachers towards their occupation are thought to be positively influenced by their being able to practise their occupation under state guarantee; their being considered important by both students and parents of students; and that their working hours are appropriate.

Contrary to the findings of the research, in a study conducted by Eraslan and Çakıcı [67], it is identified that the ATTPs of male students are more positive compared to female students. Also, in studies conducted by Bayhan [68],

Bulut [30], Kaplan and İpek [69], it is observed that there is no significant difference between the ATTPs of female and male teachers, and female and male preservice teachers.

When branches are considered, it is observed that the ATTPs of students in pre-school and classroom teaching departments are better compared to students in other branches. Such a situation can arise from the fact that the numbers of female teachers who prefer pre-school and classroom teaching branches are higher compared to other branches.

According to the regions of the cities where the research was conducted, when the results of the studies carried out in South-eastern Anatolia and Black Sea Regions are analysed, it is observed that the ATTPs of female teachers are more positive. In the research carried out by Çiçek Sağlam [35], and Tekerek and Polat [15] in South-eastern Anatolia, and in the research carried out by Çiğdem and Memiş [36] in Black Sea Region, it was found out that the ATTPs of female teachers are more positive compared to male teachers; and this result supports the results of this study. The reason for this may be the prevalence of more traditional attitudes in these areas, and which typically result in fewer females being educated. Fewer female students have the opportunity for university education, and young women may instead choose to join the teaching profession, which is respected in society. Taken together these factors might positively affect the attitudes of women in Turkey towards the occupation.

When the results of the research are analysed, it is observed that as class levels of female preservice teachers' increase, their ATTP become more positive. This result shows similarities with the results of the research conducted by Çiçek Sağlam [35], Hoşgörür, Kılıç and Dündar [70]. It can be said that from senior classes onwards, teaching practices increase and students learn the teaching profession more closely, and their attitudes develop, such factors support the improvement of their attitudes.

The reasons for why there is a low level of difference with regard to the gender variable concerning ATTP of preservice teachers, and the fact that although on a lower level, ATTPs of females are more positive compared to males should be found out and discussed. It may be that males require additional support or that in general all preservice teachers can be better supported, with the aim of enhancing their attitudes towards their occupation. This research is limited to the attitudes of preservice teachers and similar work could be conducted throughout the profession. Apart from the gender variable of teachers, other meta-analysis studies with regard to ATTP can be carried out using variables such as predictor marital status, and working in private/public institutions.

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