

In this context the aim of this study is to reveal the relationships between organizational commitment, its dimensions and job satisfaction by using psychometric meta-analysis. In this regard studies regarding the relationship between these variables are brought together and thus it will be possible to identify the direction and the power of these relationships and to contribute to filling this gap in the literature.

In this context it was hypothesized that organizational commitment, affective commitment, and normative commitment are positively related to job satisfaction whereas continuous commitment is negatively related to job satisfaction. In addition to those it was hypothesized that age, tenure, job satisfaction scale, organizational commitment scale, publication type, and type of institution moderated all those relationships.

Method

Data

The data used in the meta-analysis was acquired from 68 studies (15108 individuals) in total. In addition to this, there were 50 studies (10818 individuals) related to organizational commitment, 30 studies (6823 individuals) related to affective commitment, 20 studies (4938 individuals) related to continuance commitment, and 23 studies (5044) related to normative commitment as well.

Data Collecting Tools

Studies used in meta-analysis were determined in several ways. Firstly, masters and PhD dissertations containing the key words *organizational commitment* and *job satisfaction* have been searched in Turkish Higher Education Council's online dissertation database. After that, same key words have been searched in Google academic search engine. And finally, National Organization and Management Conference proceedings have been examined for the 2004-2014 intervals. The studies thus acquired have been included in the meta-analysis depending on the condition whether the Pearson correlation coefficients or t and F values enabling to calculate this coefficient between organizational commitment, affective commitment, continuance commitment, normative commitment, and job satisfaction have been reported. A coding sheet was generated for the analysis. On this sheet writer's name, study year, sample size, correlation coefficient, reliability coefficients, tenure, age, measures, study type, and type of institution were coded separately.

Data Analysis

In this study, psychometric meta-analysis method developed by Hunter and Schmidt (2004) was used. The correlations obtained from the studies have been

discussed in four main meta-analyses which are organizational commitment-job satisfaction, affective commitment-job satisfaction, continuance commitment-job satisfaction, and normative commitment-job satisfaction. Correlations between the variables were corrected for sampling error and unreliability of scales which were developed by Hunter and Schmidt (2004). Adjustments for the unreliability of scales, reliability coefficients reported in the studies have been used. When the reliability coefficients are not reported, average reliability of all the sampled studies have been taken into consideration.

For each relationship between the variables four meta-analyses were conducted by using observed correlations, sample size and reliability coefficients. As a result of these calculations, total number of studies (k), total sample size (N), observed standard deviation corrected for sample size (SDo), estimated true score correlation corrected for statistical artifacts (ρ), estimated true standard deviation for corrected correlation (SD ρ), 95% confidence interval of correlation score's lower and upper limits (95% CI), 80% credibility intervals of correlation score's lower and upper limits (80% CR), percent of variation in the observed correlations attributable to sampling error and other artifacts (% Var) were obtained for each meta-analysis. "Software for Hunter-Schmidt meta-analysis methods, Version 2.0." developed by Schmidt and Le (2014) and macros developed by Field and Gillet (2010) were used to conduct the meta-analyses.

Moderator Analysis

Variables leading to differentiations in the relationship between dependent and independent variables are defined as moderator (Hunter & Schmidt, 2004). The presence of moderator variables in meta-analysis was determined by three different methods including Q statistic, 75% rule, and 80% credibility interval rule. In the meta-analysis age, tenure, job satisfaction scale, organizational commitment scale, publication type, and type of institution were used as moderator variables. Subgroup analysis was adopted to conduct moderator analysis. This method can be used for both categorical and continuous variables. Z statistic (Hunter & Schmidt, 2004) was used to determine the significance of the subgroup effect sizes. If the analysis result is statistically significant then it can be said that moderator affects the relationship between those variables (Grifeth, Hom, & Gaertner, 2000). Otherwise there is no moderator effect in question.

Publication Bias Analysis

One of the biases that could emerge in meta-analyses is publication bias. This means that all the reached studies are a biased sample of all the studies (Hunter & Schmidt, 2004). According to this, it is more likely that statistically significant studies have been published

(Dickersin et al., 1992). There are several methods to identify publication bias such as fail safe number and funnel plot. In this study, rank correlation test developed by Begg and Mazumdar (1994) was used to detect publication bias; because fail safe number and funnel plot do not take different sample sizes and variances into consideration.

Results

According to the results of meta-analysis, corrected true correlation score takes values between 0.26 and 0.60 as can be seen Table 5. Cohen (1988) pointed out that correlation scores between ± 0.10 - ± 0.29 are low, between ± 0.30 - ± 0.49 are moderate and between ± 0.50 - ± 1.00 are high. Accordingly, the relationship between organizational commitment and job satisfaction ($\rho = 0.60$), affective commitment and job satisfaction ($\rho = 0.60$), normative commitment and job satisfaction ($\rho = 0.52$) are high whereas the relationship between continuance commitment and job satisfaction is low and positive ($\rho = 0.26$). In addition to this, 95% confidence interval of effect sizes not containing zero values indicates that these effect sizes are statistically significant. According to these results H_{1a} , H_{1b} and H_{1d} are supported whereas H_{1c} is not supported.

By the moderator analyzes conducted in the meta-analysis, variables that may affect the relationship between organizational commitment, affective commitment, continuance commitment, normative commitment, and job satisfaction were examined. Each meta-analysis meets the moderator analysis condition that there must be at least 10 studies to conduct moderator analysis (Weng, 2004). As seen on Table 5, chi square homogeneity test results are statistically significant which indicates that effect sizes are significantly variable and moderator variables do exist. In addition to this total variance attributable to corrected sampling and measurement errors are below 75% is another indication of moderator variables. Furthermore only at continuance commitment-job satisfaction relationship contains zero values for 80% credibility interval whereas the other credibility intervals all cover wide ranges. Accordingly, these all reveal the existence of moderator analysis in the meta-analysis.

Moderator variable analyses of the relationships between organizational commitment, affective commitment, continuous commitment, normative commitment, and job satisfaction are presented on Table 6. According to these results there is no moderator effect of organizational commitment and job satisfaction scales except the effect of organizational commitment scale on the relationship between affective commitment and job satisfaction which suggests that H_{2b} is supported whereas H_{2a} , H_{2c} , H_{2d} , H_{3a} , H_{3b} , H_{3c} , and H_{3d} are not supported.

Besides this the moderator effect of public and private sector is also examined which revealed that there is not any statistically significant effects of institution type on the relationships in the study. This result shows that H_{4a} , H_{4b} , H_{4c} , and H_{4d} are not supported. Furthermore the moderator effect of publication bias was also investigated. According to these results there is a significant effect on the relationship between affective commitment and job satisfaction while there is no other significant effect available which reveals that H_{5b} is supported and H_{5a} , H_{5c} , and H_{5d} are not supported. In addition to these there is a moderator effect of age on the relationships between affective commitment-job satisfaction and normative commitment-job satisfaction, but there are not any other statistically significant moderator effects in question. This result shows that H_{6b} and H_{6d} are supported while H_{6a} and H_{6c} are not supported. Finally the moderator effect of tenure was also examined which revealed no significant effect on any relationships possible. According to this H_{7a} , H_{7b} , H_{7c} , and H_{7d} are not supported.

In the meta-analysis publication bias analyzes were also conducted. Accordingly, the results of rank correlation test developed by Begg and Mazumdar (1994) can be seen on Table 7 which shows the values for organizational commitment $\tau(N = 50) = 0.154$, $p = 0.116$, affective commitment $\tau(N = 30) = 0.185$, $p = 0.153$, continuous commitment $\tau(N = 20) = -0.121$, $p = 0.455$, and normative commitment $\tau(N = 23) = -0.028$, $p = 0.853$. The fact that these findings are not statistically significant is an indication of no publication bias.

Discussion

The aim of this study is to investigate the relationships between organizational commitment, its dimensions affective commitment, continuous commitment, normative commitment and job satisfaction by psychometric meta-analysis method. In this regard four meta-analyses were conducted with 68 studies ($N = 15108$) in total. Moreover whether or not there are moderator effects of age, tenure, job satisfaction scale, organizational commitment scale, publication type, and type of institution, 48 meta-analyses were conducted. As a result of these analyses the direction and the power of those relationships were revealed, and whether the effects of the moderator variables were significant or not was identified as well.

The relationships between organizational commitment and job satisfaction ($\rho = 0.60$) is very powerful. Previous meta-analyses (e.g., Mathieu & Zajac, 1990; Tett & Meyer, 1993) and empirical studies both in Turkey and abroad (e.g., Curry, Wakefield, Price, & Mueller, 1986; Gül et al., 2008; Hackett et al., 1994; Izgar, 2008;

Meyer, Allen, & Smith, 1993; Vandenberg & Lance, 1992; Zel & Basım, 2008) support this result as well. In addition to this, affective commitment-job satisfaction ($\rho = 0.60$) and normative commitment-job satisfaction ($\rho = 0.52$) relationships are also high. According to this satisfied employees attached to the organization with affection, identify with it, and strive more for the organization to attain its goals (Mowday et al., 1979). Moreover satisfied employees feel in debt of the organization and this leads them to reciprocate (Eisenberger, Cummings, Armeli, & Lynch, 1997). Thus normative commitment causes the employees to feel obligated to stay in the organization.

Even though both in national and international literature, the direction and the power of the relationship between organizational commitment, affective commitment, normative commitment and job satisfaction were revealed in a clear way, it is not possible to say the same thing for continuous commitment-job satisfaction relationship. There are some contradictory results in the literature. In their meta-analysis Mathieu and Zajac (1990) found this correlation 0.23 and also empirical studies conducted both in Turkey and abroad showed moderate positive relationships (e.g., Akar & Yıldırım, 2008; Cooper-Hakim & Viswesvaran, 2005; Moorman, Niehoff, & Organ, 1993; Tsai & Huang, 2008). In contrast to this Meyer et al. (2002) calculated this correlation -0.07 in their meta-analysis. In addition to this in several empirical studies and several studies in this meta-analysis also showed negative results (e.g., Cevahir, 2004; Gündoğan, 2010; Hackett et al., 1994; Meyer et al., 1993; Youseff, 2002). This means when considering the cost of leaving and the investments to the organization and as a result of these choosing to stay and job satisfaction is negatively related. However, the more the employees' satisfaction levels from different aspects of their jobs such as wages and promotion opportunities increases, the more the cost of leaving increases as well (Mathieu & Zajac, 1990) and thus employees could not risk to leave the organization which means employees job satisfaction levels and continuous commitment are not related in a negative way, on the contrary they are related in a positive direction. In this study the relationship between continuous commitment and job satisfaction was in positive direction ($\rho = 0.26$).

By the moderator analyzes conducted in the meta-analysis, variables that may affect the relationship between organizational commitment, affective commitment, continuance commitment, normative commitment, and job satisfaction were examined. Moderator analyses showed that organizational commitment scale, job satisfaction scale, and tenure have no moderating effect except the effect of organizational commitment scale on the relationship between affective commitment and

job satisfaction. However, age has a moderator effect on the relationship between affective commitment-job satisfaction and normative commitment-job satisfaction. This means employees above specific age, identify more with the organization, feel in debt of the organization, and have more positive attitude towards their jobs. Even though previous meta-analyses have not examined age as a moderator variable, it appears to exist a relationship between these variables in question (e.g. Mathieu & Zajac, 1990; Meyer et al., 2002). In addition to these effects institution type has no moderating effect on the relationships in question. According to this result, employees in public sector have job security, opportunity to work until retirement, and a constant wage, and employees in private sector have personal and professional improvement potentials which means they both have different opportunities which does not effect their attitudes towards their jobs and organization relative to each other.

This study enables the direction and effect of the relationship between organizational commitment and job satisfaction. Thus these relationships were identified by putting together many empirical research results taking sampling and measurement errors into consideration. Especially due to the contradictory results of the relationships between the dimensions of organizational commitment and job satisfaction, this meta-analysis has a significant contribution for clarifying these contradictions. Moreover, organizational commitment and job satisfaction are desired attitudes in all employees by the manager and organizations. These are important attitudes which increase organizational productivity and effectivity by affecting performance, turnover, and organizational citizenship behaviors. In this respect by improving and increasing employees' organizational commitment and job satisfaction levels, it would be possible to obtain organizational productivity.

There are some limitations in this study. One of them is that accessible studies have been used; inaccessible ones have been excluded from the meta-analysis. Besides this meta-analysis is based on three dimensional organizational commitment classification developed by Meyer and Allen (1991), and general job satisfaction without considering facet job satisfaction. However, using a different classification may lead to different results. Moreover several moderator variables have been examined in this study; however there still exists unexplained variance. In this context some other moderator variables other than used in this meta-analysis should be examined in future studies.

Because job satisfaction and organizational commitment are key concepts in the field of organizational behavior, this relationship is commonly researched. Although empirical studies have been conducted so far, this study combined all the empirical researches with a

meta-analysis for the first time. In this context, it is possible to tell that it has been contributed to the Turkish literature. This meta-analysis as a basis for further stud-

ies, it is expected to bring a broader understanding to the relationship between job satisfaction and organizational commitment and contribute to the theory.