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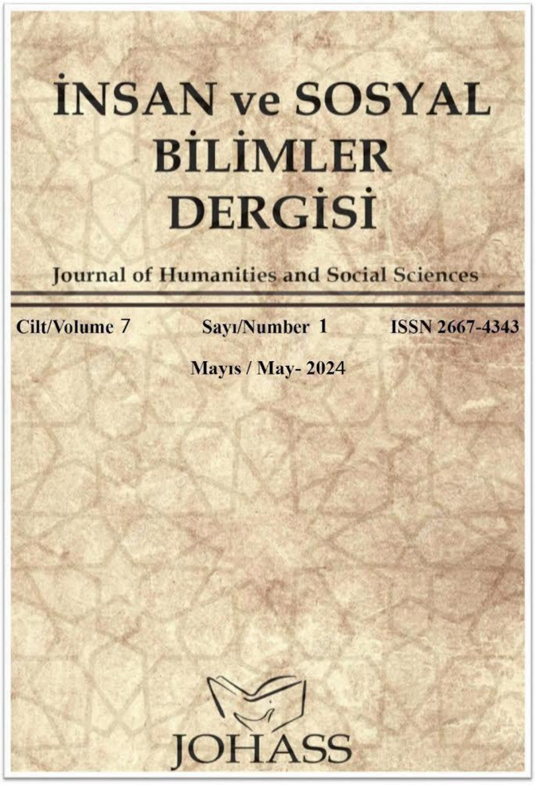

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School Occupational Health and Safety Performance Scale: Validity and Reliability Study for Scale Development

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School Occupational Health and Safety Performance Scale: Validity and Reliability Study for Scale Development

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Abstract

The aim of this study is to develope a scale to evaluate the performance of occupational health and safety practices in schools. The form created for this purpose was presented to experts and the content validity rates of the items were determined in line with the feedback received. The items with a content validity ratio below .80 were excluded from the study. The 49-item trial form was applied via e-mail to 990 teachers working at primary, secondary, and high school levels in public and private schools in İstanbul, affiliated with the Ministry of National Education, and the data obtained were analyzed. With exploratory Factor Analysis (EFA), a two-dimensional structure consisting of 40 items in total revealed "Occupational Health and Safety Training Practices Applied in Schools" and "Occupational Health and Safety Practices Applied in Schools, Managerial Precautions and Precautions". It was determined that the goodness of-fit indices of the model were quite high. Confirmatory Factor Analysis (CFA) also confirmed the EFA results. The obtained correlation coefficients were examined. Item-total score correlation coefficients were between $r = .878$ and $r = .650$, and a significant relationship was observed at the $p < .01$ level. The internal consistency coefficient obtained for the entire scale was .92. There was a significant ($p< 0.05$) difference between the items and the total score between the 27% lower and 27% upper groups. It was determined that this difference was in favor of the upper 27% group. There was high reliability in the items on the scale, and the items were distinguishable on the basis of the characteristics the scorers of the scale were looking for.

Research Article

Keywords: Performance, Occupational health and safety, school occupational health and safety, school administrator, teacher

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Introduction

Recent research on occupational health and safety (OSH) business productivity and competitiveness has shown that occupational accidents and diseases have a significant impact on the productivity, competitiveness, and reputation of enterprises. The OSH practices implemented have confirmed the social and economic benefits, as they significantly reduce compensation costs (compensations and medical expenses). It is increasingly important that OHS activities be seen as an investment made in line with the objectives of the organization rather than a financial expense and that they should be a fundamental component of the organizational management and business plans of businesses. (Boileau, 2016, 294).

In accordance with the law and regulation, commitments made regarding OHS targets in working environments and strategic management principles are included in the OHS policy. The policy is one of the first steps of the Occupational Health and Safety Management System (OHSMS). OHSMSs question performance requirements in detail and serve as direction indicators in achieving the objectives specified in the OHS policy. Purpose is a comprehensive goal of OHS practices, that is, it is an expression of intent that is not expressed numerically. (Cengiz, 2020, 1).

One of the ways for a management system to be developed and accepted is to prove that the system performance is effective. Performance evaluation is the process of obtaining data about all material and moral components of the organization and making evaluations according to this data, in order to achieve the strategic goals, mission, and goals determined by the organization. The most critical part of this process is the measurement tool and the measurements to be performed using. Performance measurement is a time-consuming and difficult process that must be repeatedly applied for the organization. In this regard, information about what, how, and with what to measure needs to be thoroughly researched. One of the primary methods used for this is to benefit from the knowledge, opinions, and experiences of experts who have studied in this field. Although this method can be used to evaluate simpler systems, it can give contradictory and even biased results for more complex systems. The ideal way to prevent mistakes in such a situation is to use mathematical or quantitative techniques (Ediz, Yıldızbaşı & Baytemur, 2017, 277).

The employer is obliged to check whether OHS-related health and safety measures are followed and to ensure that any problems that arise are resolved. In addition, the necessary control, measurement and examination must be carried out to eliminate the risk factors to which the business is exposed. This situation is stated in Article 4 of the Occupational Health and Safety Law No. 6331 and Article 10 regarding risk assessment (Law on Occupational Health and Safety, 2012).

Performance measurement is an important aspect of OHS monitoring and evaluation. One of the primary goals of OHS practices in an organization and/or industry is to measure OHS performance and provide feedback regarding health and safety. Performance measurement values measured directly or indirectly provide feedback on the extent to which an expected result has been achieved or the quality of the processes (NOHSC, 1999: 1).

To provide a safe school environment for individuals by eliminating the dangers and risks that may occur in schools, it is necessary to create a safe education and working environment by keeping employees and students in educational institutions away from stress, anxiety, and dangers. Concept of school safety; It is expressed in the physical and psychological comfort and sense of peace of teachers, students and staff. For this reason, a safe school environment created with OHS practices is considered important for individuals to feel more comfortable and show their best performance (Çay, 2019: 3).

The goal of the school safety is to create and maintain a school climate where students thrive in an environment free from dangers, harmful addictions, and fear, where teachers can teach and students can learn (Stephens 1998:254).

This study will make a significant contribution to measuring school OHS performance, which is a crucial aspect of the Occupational Health and Safety Management System (OHSMS) used to ensure school safety, particularly during the educational process. This contribution will be beneficial for school administrators in managing OHS practices, particularly in identifying deficiencies related to school OHS.

Model

In this scale development study; creation of the item pool, determining face and content validity according to expert opinion, creating the scale structure, determining the research group for the scale study, validity studies of the scale, exploratory factor analysis, naming the sub-dimensions because of factor analysis, factors and item contents, confirmatory factor analysis, reliability studies of the scale, and the stages of sorting the scale items were carried out.

Sample and Population

In this section, information will be given about the population and sample selection**.**

Exploratory Factor Analysis (EFA) Sample Selectıon

The population of the study was determined as the schools throughout Istanbul with 50 or more employees who perform OHS practices. Since it is not possible to reach the entire population due to time and practice limitations, a sample was determined. (Yıldırım & Şimşek, 2008: 277). In the 2021-2022 academic year, 25 (64.1%) of 39 districts in Istanbul are on the European side and 14 (35.9%) are on the Anatolian side (Ministry of National Education Statistics, 2020: 22). Within this ratio, six districts from the European side and three districts from the Anatolian side were determined using the stratified sampling method at the rates of 25/39 and 14/39, which is a sampling type that aims to represent the strata or subgroups in the population in proportion to their weight in the study population. Within the proportions of the selected strata, the districts in Istanbul were selected randomly by drawing lots using simple random sampling methods. (Büyüköztürk et al., 2012 as cited in. Koç, 2017: 488) Six districts (Büyükçekmece, Başakşehir, Fatih, Bakırköy, Beylikdüzü, Sarıyer) from the European side and three districts from the Anatolian side (Kadıköy, Üsküdar, Kartal) were selected. There are 564 primary schools, 485 secondary schools, 479 secondary schools, 415 general secondary schools, and 578 vocational and technical secondary schools throughout Istanbul. In addition, there are 43391 teachers working in primary schools throughout Istanbul, 47374 in secondary schools, 58304 in secondary schools, and 28495 in science high schools, vocational high schools, and religious high schools (Ministry of National Education Statistics, 2020: 22). The large size of the population makes it difficult to reach the units that make up the population. In similar cases, cluster sampling may be more convenient. In this type of sampling, the population is divided into groups as clusters which are defined as a sample unit. A sample is created by bringing together randomly determined clusters. (Koç, 2017: 489). In the population, primary school teachers comprise 25%, secondary school teachers comprise 26%, Anatolian high school teachers comprise 33%, and other types of high schools are 16%. There are approaches that data should be collected from 10 participants per item for Exploratory Factor Analysis (EFA). However, most of the factor analysis results conducted by Costello and Osborne (2005) using this ratio were found to be incorrect. Therefore, factor analysis using more than 10 times more participants per item is thought to provide more robust results (Güngör, 2016: 106). Based on the data obtained, the number of teachers in each type of school was considered as a cluster or group, and with these ratios, 244 teachers from primary schools, 252 from secondary schools, 284 from Anatolian high schools, and 124 from science high schools, vocational high schools, and imam-hatip high schools were determined randomly. In this study, 990 participants were reached in EFA (49 x 20 = 980), 75 incorrect codings were identified, and it was decided that the sample size of (49 x 10 = 490) 915 people would be sufficient for the scale development study.

Confirmatory Factor Analysis (CFA) Sample Selectıon

For CFA, it is generally stated that sample sizes of at least 200, 250 and 500 people or 3, 6, 20 times the number of variables should be reached (De Winter, Dodou ve Wieringa, 2009: 177). The 40 items obtained for confirmatory factor analysis (CFA) were collected from district schools other than the districts where EFA was applied, within the proportions determined in EFA, and the districts in Istanbul were selected randomly by lottery by simple random sampling methods (Büyüköztürk et al., 2012 cited in Koç, 2017: 488). Six districts were determined from the European side (Beşiktaş, Küçükçekmece, Gaziosmanpaşa, Fatih, Esenler, Yeşilköy) and three districts from the Anatolian side (Ataşehir, Maltepe, Tuzla). In these districts, 405 participants were reached (40 x 10 = 400), 38 incorrect codings were identified, and it was decided that the sample size of (40 x 5 = 200) 367 people would be sufficient for the scale development study. 367 teachers responded to the form.

Data Collection Tools

Under this title, detailed information about the data collection tools and the data collection process were presented.

Occupational Health and Safety Practices Performance Scale in Schools

To determine the requirements of school OHS practices, laws, regulations, international reports, agreements and literature were reviewed and analyzed. Draft articles were determined after consulting experts. The number of experts (between 5-40) and expert quality are also of great importance for content validity (Ayre & Scally, 2014; Lawshe, 1975; Wilson, Pan & Schumsky, 2012, cited in Olgun & Alatlı 2021: 574). Experts in the field; It was shared with four professors, two doctoral faculty members, two doctoral students, five OHS experts, and two Turkish experts. Through the form sent to the experts, they were asked to mark one of the options "appropriate", "must be corrected" or "not suitable" for each of the items. After receiving expert opinions, necessary corrections were made, and the number of items in the draft measurement tool was decreased to 49.

For the scale development study, eight expert opinions were received for the subject area and measurement and evaluation, five for the subject area and two for the language suitability. A preliminary trial was conducted with 15 people representing the target group to ensure that the scale items were understandable and readable by the responders, to detect spelling errors, and to determine the average time of scale application. For content validity, an item pool was created by taking care to include all aspects of the OHS practices carried out in schools. Then, opinions were taken from experts in the field in terms of the clarity of the items, scope, and suitability for the target group (Avcı, 2017: 618). The lower limit value of the content validity index (CGI) for 15 experts at the α=.05 significance level was expressed as 0.49 by Lawshe (1975: 569). Each item was examined one by one, and 11 items with a CGI value below 0.49 were removed from the scale. According to the suggestions of "fifteen experts" who evaluated the development of the measurement tool, three items were removed from the measurement tool and two items were added. As a result, it was decided that the draft scale would consist of 49 items.

Compliance with Ethical Standards

The Ethics Committee of Kırşehir Ahi Evran University was applied for a document showing the ethical suitability of the study. The document showing that the study was ethically appropriate (decision dated 21.04.2022 and numbered 2022/03/45) was received.

Findings

Before exploratory factor analysis (EFA), the Kaiser-Meyer-Olkin (KMO) coefficient and Bartlett's test of sphericity significance level were examined to determine the suitability of the dataset for factor analysis. Statistics package program was used for EFA.

It is recommended that the data should be normally distributed, the Kolmogorov-Smirnov value is greater than 0.05 (sig>0.05), or the kurtosis and skewness values are between -1 and +1 (Çokluk, Şekercioğlu & Büyüköztürk, 2012: 123). For the analysis of scale data, scores must be summable and normally distributed (Büyüköztürk, 2012: 124-125). For this purpose, the descriptive statistics of the dataset used in the study are shown in Table 1.

Table 1

Descriptive Statistics

	Statistics
Mean	3,78
Median	3,90
Variance	0,63
Std. Deviation	0,79
Minimum	1,00
Maximum	5,00
Range	4,00
Interquartile Range	0,90
Skewness	-0,70
Kurtosis	0,74
Kolmogorov-Smirnov	0,12
p-value	0,00
Shapiro Wilks	0,95
Sig.	0,00

In Table 1, Kolmogrov-Smirnov (0.12 and $p>0.05$) and Shapiro-Wilk (.95 and sig>.05) values are significant. In addition, because the kurtosis (0.74) and skewness (-.70) values are within the limits of +1 and -1, the scores show a normal distribution (Büyüköztürk, 2012: 124-125).

EFA and CFA were performed to determine the factor structure validity of the scale. In order to test the suitability of the sample size to the data structure for factor analysis, it was decided to compare the size of the partial correlation coefficients with the size of the observed correlation coefficients. The KMO test for this purpose and Bartlett's test (Bartlett test of Sphericity) were conducted to determine whether the measurement tool could be divided into factor structures (Pallant, 2005: 178). The KMO and Bartlett's Test results are given in Table 2.

Table 2

Kaiser-Meyer-Olkin and Bartlett's Test

KMO		0,987
Bartlett Sphericity Test	Chi-squared	58356,869
	df	1176
	Sig.	0,000

Since the KMO value is 0.987, the Bartlett's Test value and the obtained chi-square (χ^2) value are significant at the 0.01 level, and the data structure is perfectly adequate for factor analysis.

Because of the KMO test, if the value is lower than 0.50, The factor analysis cannot be continued (Pallant, 2005: 178). According to Çokluk et al. (2012), if the sample size value is 0.90 or above, it can be interpreted as "excellent". Bartlett's test provides information about whether the data are suitable for normal distribution and whether they are multivariate. On the other hand, a prerequisite for continuing factor analysis is that this test should be statistically significant (Büyüköztürk, 2012: 124-125; Çeçen, 2006: 105). The data set was suitable for factor analysis because the KMO coefficient stated in Table 2 was close to 1, with a value of 0.987, and the Bartlett Sphericity test significance level was less than 0.05. EFA evaluations continued as KMO and Bartlett's test's results met the condition. According to the research objective, orthogonal rotation was used because the main goal was to create a model and obtain the most appropriate number of "independent" factors and the generalizability of the results. Factor extraction with varimax rotation, which is an orthogonal method, is the generally accepted method (Keiffer, 1998; cited in Yaşlıoğlu, 2017: 78). Afterwards, the eigenvalues of the factors and the amount of variance they explained were determined using the Varimax rotation method.

Eigenvalues are generally obtained from the sum of the squares of the factor loadings of the items related to the factors. Here factors, with eigenvalues of 1 or greater than 1 can be considered important factors (Büyüköztürk, 2012: 124-125; Çeçen, 2006: 105). However, the threshold value of 1, determined according to the analysis results may vary.

Afterwards, the suitability for factor analysis was checked by performing the Bartlett Sphericity Test with the KMO value again. Here, the second step KMO value was found to be 0.985, which was close to 1. According to the Bartlett Sphericity test results, it was observed that the test statistic value was less than 0.05. Therefore, the factor analysis continued.

In the second step, the eigenvalues and explained variance amounts are stated in table 3. Since the number of factors with eigenvalues greater than 1 was two at this stage, it was observed that the remaining 40 items were weighted under two factors. The first factor alone explains 65.16% of the total variance, the second factor alone explains 7.92% of the total variance, and the two factors together explain 73.08% of the total variance.

Tablo 3

Rotated Component Matrix

	Total	Variance %	Cumulative %
1	26,07	65,16	65,16
2	3,17	7,92	73,08
	Total	**Variance %**	**Cumulative %**

The weights of the remaining 40 items under the relevant factor are given in table 3. At this stage, 25 items are under the first component and 15 are under the second component.

Table 4

Second Rotated Component Matrix

	Component	
	1	**2**
s46	0,84	
s32	0,81	
s47	0,81	
s45	0,81	
s44	0,8	
s35	0,8	
s40	0,8	
s39	0,79	
s36	0,79	
s29	0,78	
s28	0,78	
s49	0,77	
s27	0,77	
s38	0,76	
s26	0,75	
s34	0,74	
s33	0,74	
s30	0,74	
s24	0,73	
s25	0,72	
s43	0,72	
s31	0,72	
s42	0,72	
s41	0,71	
s37	0,6	
s8		0,83
s6		0,82
s9		0,82
s5		0,81
s12		0,8

s11	0,8
s14	0,78
s7	0,77
s13	0,77
s10	0,76
s15	0,76
s3	0,75
s4	0,75
s1	0,74
s2	0,69

CFA was applied to determine the suitability of the two-factor structure of the scale. Because of CFA, the sig. value and then the Chi-square (χ^2/df) fit indices were examined, and it was determined that the model showed an acceptable fit with the real data (χ^2/df=2.90). In addition, the RMSEA fit value (.072) was found to be perfectly compatible in determining model adequacy. Because of CFA, in addition to the RMSEA value,

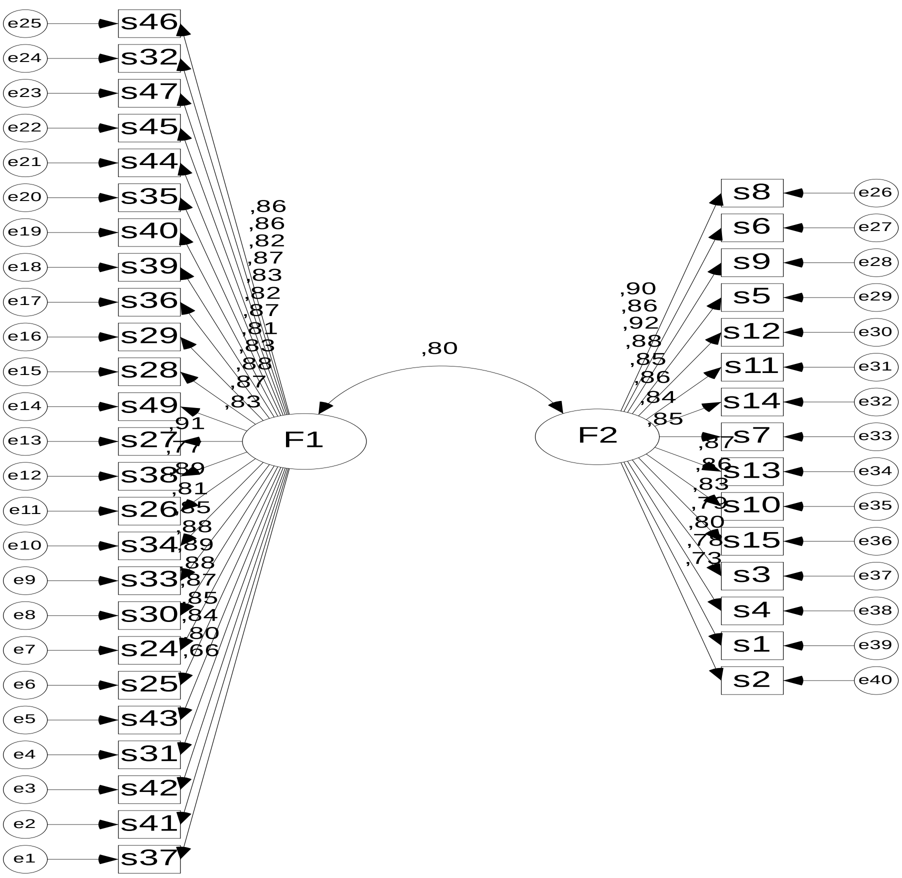

Figure 1. *Confirmatory Factor Analysis*

AGFI, GFI, NFI, NNFI, IFI, RFI and RMR fit index values were used to determine whether the model was sufficient. These values confirm that the model formed in the EFA of the scale is valid and that the factor structure determined in the scale is valid. When the findings obtained because of these analyzes are evaluated, the "School Occupational Health and Safety Practices Performance Scale", consisting of 40 items and a two-factor structure, is a valid model to be implemented in schools.

Table 5

Fit Indices Values

Acceptable fit indices values	**Analysis fit indices values**
$\chi 2$/sd <5	2,90
GFI >0,90	0,91
AGFI >0,90	0,92
CFI >0,90	0,91
TLI>0,90	0,91
RMSEA <0,08	0,072
RMR <0,08	0,07

The regression coefficients for each item are given in Table 6

Table 6

Standardized Regression Coefficients

		Estimation
s24	F2	0,89
s25	F2	0,89
s26	F2	0,88
s27	F2	0,9
s28	F2	0,87
s29	F2	0,88
s30	F2	0,89
s31	F2	0,84
s32	F2	0,86
s33	F2	0,85
s34	F2	0,86
s35	F2	0,66
s36	F2	0,67
s37	F2	0,79
s38	F2	0,87
s39	F2	0,88
s40	F2	0,88

s41	F2	0,88
s42	F2	0,84
s43	F2	0,85
s44	F2	0,85
s45	F2	0,84
s46	F2	0,84
s47	F2	0,85
s49	F2	0,85
s1	F1	0,8
s2	F1	0,73
s3	F1	0,81
s4	F1	0,81
s5	F1	0,9
s6	F1	0,88
s7	F1	0,86
s8	F1	0,92
s9	F1	0,93
s10	F1	0,88
s11	F1	0,84
s12	F1	0,86
s13	F1	0,88
s14	F1	0,85
s15	F1	0,84

The Cronbach Alpha (α) coefficient is one of the reliability criteria used to determine internal consistency in scale adaptation and development studies (Seçer, 2013:176). This coefficient gives an average correlation value between the items on the scale. The reliability of the scale increases as these values approach from 0 to 1 (Akaydın & Kurnaz, 2015: 256, Pallant, 2005).

Reliability analysis was performed to determine the reliability level of the scale used in the study and Chronbach alpha coefficient was obtained. The evaluation criteria used in the evaluation of Cronbach's Alpha Coefficient are; If $0.80 \leq \alpha < 1.00$, the scale can be stated as highly reliable. While reliability levels vary depending on the purpose and nature of the scale, the lowest level should be 0.70 (Pallant, 2005, cited in Akaydın & Kurnaz, 2015: 256). The Cronbach alpha coefficients obtained are given in Table 8. Accordingly, the scales are highly reliable with Cronbach's alpha values of 0.90 for the 1st factor and 0.91 for the 2nd factor.

Table 7

Reliability Analysis

	Chronbach Alfa
F1	0,90
F2	0,91

Total	0,92

To measure internal consistency in reliability and to determine the relationship between the items and the total of the scale, correlation analysis was performed and the Spearman correlation coefficient was obtained. When the obtained correlation coefficients are examined; ıtem-total score correlation coefficients range between r= .878 and r= .650, and there is a significant relationship at the sig < .01 level. Therefore, there is a positive relationship between the items and the total of the scale.

Table 8

Item and Scale Correlation

item	r	sig.	item	r	sig
s1	0,756**	0,000	s29	0,820**	0,000
s2	0,721**	0,000	s30	0,849**	0,000
s3	0,765**	0,000	s31	0,830**	0,000
s4	0,782**	0,000	s32	0,782**	0,000
s5	0,845**	0,000	s33	0,819**	0,000
s6	0,806**	0,000	s34	0,768**	0,000
s7	0,822**	0,000	s35	0,752**	0,000
s8	0,846**	0,000	s36	0,768**	0,000
s9	0,878**	0,000	s37	0,650**	0,000
s10	0,842**	0,000	s38	0,709**	0,000
s11	0,819**	0,000	s39	0,742**	0,000
s12	0,816**	0,000	s40	0,809**	0,000
s13	0,848**	0,000	s41	0,766**	0,000
s14	0,809**	0,000	s42	0,815**	0,000
s15	0,813**	0,000	s43	0,852**	0,000
s24	0,870**	0,000	s44	0,755**	0,000
s25	0,849**	0,000	s45	0,815**	0,000
s26	0,852**	0,000	s46	0,776**	0,000
s27	0,858**	0,000	s47	0,745**	0,000
s28	0,815**	0,000	s49	0,768**	0,000

According to the scale's total score, whether the difference between the item averages of the 27% group with the highest score and the 27% group with the lowest score was significant or not was examined with the t-test in unrelated groups, and the results are shown in table 10.

Tablo 9

Results of Unrelated Groups t-Test Between the 27% Lower and Upper Groups

İ		n	Mean	std	t	sig.	İ		n	Mean	std	t	sig
s1	Lower	248	2,33	0,88	-28,8	0	s29	Lower	248	2,94	0,95	-28,5	0
	Upper	248	4,42	0,73				Upper	248	4,81	0,4		
s2	Lower	248	3,04	1,16	-21,8	0	s30	Lower	248	2,8	0,88	-31,3	0
	Upper	248	4,77	0,45				Upper	248	4,76	0,44		
s3	Lower	248	2,88	1,09	-24,7	0	s31	Lower	248	2,67	0,9	-30,6	0
	Upper	248	4,75	0,5				Upper	248	4,71	0,54		
s4	Lower	248	2,33	0,9	-26,7	0	s32	Lower	248	3,04	1,01	-26,4	0
	Upper	248	4,41	0,83				Upper	248	4,85	0,39		
s5	Lower	248	2,7	0,93	-29,1	0	s33	Lower	248	2,93	0,95	-27,4	0
	Upper	248	4,69	0,53				Upper	248	4,79	0,48		
s6	Lower	248	2,47	0,93	-28,2	0	s34	Lower	248	3,16	1,01	-24,3	0
	Upper	248	4,52	0,67				Upper	248	4,83	0,4		
s7	Lower	248	2,4	0,85	-29,4	0	s35	Lower	248	3,27	0,95	-24,1	0
	Upper	248	4,5	0,74				Upper	248	4,84	0,38		
s8	Lower	248	2,53	0,91	-30,6	0	s36	Lower	248	3,07	0,95	-26,9	0
	Upper	248	4,61	0,57				Upper	248	4,83	0,41		
s9	Lower	248	2,46	0,85	-35,1	0	s37	Lower	248	2,92	1,1	-21	0
	Upper	248	4,66	0,51				Upper	248	4,67	0,71		
s10	Lower	248	2,46	0,83	-31,5	0	s38	Lower	248	3,31	0,95	-22,1	0
	Upper	248	4,55	0,63				Upper	248	4,79	0,45		
s11	Lower	248	2,73	0,97	-28,2	0	s39	Lower	248	3,38	0,92	-23	0
	Upper	248	4,7	0,52				Upper	248	4,84	0,39		
s12	Lower	248	2,69	0,94	-29,1	0	s40	Lower	248	3,11	0,86	-28,5	0
	Upper	248	4,67	0,51				Upper	248	4,82	0,4		
s13	Lower	248	2,4	0,85	-32,6	0	s41	Lower	248	2,83	0,94	-26,7	0
	Upper	248	4,56	0,59				Upper	248	4,7	0,58		
s14	Lower	248	2,2	0,83	-31,7	0	s42	Lower	248	2,69	0,9	-29,4	0
	Upper	248	4,46	0,75				Upper	248	4,69	0,57		
s15	Lower	248	2,35	0,86	-31,7	0	s43	Lower	248	2,77	0,88	-31,5	0
	Upper	248	4,57	0,69				Upper	248	4,77	0,47		
s24	Lower	248	2,77	0,85	-32,9	0	s44	Lower	248	3,12	0,92	-24,8	0
	Upper	248	4,77	0,45				Upper	248	4,76	0,49		
s25	Lower	248	2,89	0,86	-30,6	0	s45	Lower	248	2,99	0,9	-27,5	0
	Upper	248	4,77	0,45				Upper	248	4,76	0,47		
s26	Lower	248	2,83	0,85	-31,5	0	s46	Lower	248	3,02	0,95	-25,2	0
	Upper	248	4,75	0,45				Upper	248	4,75	0,51		
s27	Lower	248	2,83	0,84	-32,1	0	s47	Lower	248	3,2	0,99	-23,5	0
	Upper	248	4,77	0,44				Upper	248	4,81	0,43		
s28	Lower	248	2,97	0,89	-29	0	s49	Lower	248	3,04	0,99	-24,5	0
	Upper	248	4,79	0,42				Upper	248	4,77	0,5		

According to the scale's total score, whether the difference between the item averages of the 27% group with the highest score and the 27% group with the lowest score was significant or not was examined with the t-test in unrelated groups, and the results are shown in table 10.

In Table 9, there is a significant (sig< 0.05) difference between the items and the total score between the 27% lower and 27% upper groups. It was determined that this difference was in favor of the upper 27% group. The reliability of the items in the scale is high and that those who rate the scale are distinguished in terms of the characteristics they want to measure. Accordingly, the averages obtained for all scale items differ significantly between the lower and upper groups, and the upper group average is significantly larger than the lower group average. As a result, the reliability of the items in the scale is high.

The research was conducted on public and private primary, secondary, high school, and vocational high school teachers who were randomly selected by lottery, one of the simple random sampling methods, in the districts of Istanbul. First, validity and reliability tests of the scale data were conducted. The scale reliability coefficient (Cronbach's Alpha) is highly reliable, with Cronbach's Alpha values of 0.90 for the 1st factor and 0.91 for the 2nd factor.

Because of EFA performed to determine the construct validity of the scale, two sub-dimensions were obtained. These dimensions are named as "Occupational Health and Safety Training Practices Applied in Schools" and "Occupational Health and Safety Practices Applied in Schools, Managerial Precautions and Precautions". The first factor alone explains 65.16% of the total variance, the second factor alone explains 7.9% of the total variance, and the two factors together explain 73.08% of the total variance.

Results and Discussion

Making systematic and accurate OHS performance measurements will ensure that most of the deficiencies that may occur in the OHS management of the organization are eliminated. Therefore, performance measurements will make a significant contribution to protecting organizational employees from accidents and ensuring their health. It is necessary to provide the necessary management system conditions to control an organization's OHS risks and improve its OHS performance. OHSAS 18001 serves as a guide that determines the conditions related to OHSMS in order to control OHS risks that may occur in organizations and to improve OHS performance. According to OHSAS 18001, to improve OHS performance, it is necessary to continuously improve the working environment and ensure that all employees of the organization participate in the process (Serin and Çuhadar, 2015:

56). In accordance with Article 4 of OSH Law No. 6331, the employer must monitor whether the necessary sensitivity is shown to OHS measures, inspect and ensure that potential deficiencies are eliminated. In addition, because the same law accepts school administrators as representatives of employers, this situation places the greatest responsibility on school administrators in OHS management in the implementation of Article 4 of the law (Occupational Health and Safety Law, 2012). In this regard, it is thought that the OHS performance scale developed in the study can be a useful measurement and control tool that school administrators can use while conducting OHS practices, determining the problems experienced in OHS practices, and taking the necessary precautions.

Recommendations

Measurability of school OHS performance reveals the level at which OHS is implemented in schools and provides the opportunity to examine in detail which practices experience problems. In this context, it is thought that the school OHS practices performance scale developed in the study can be a useful measurement and control tool that can be used in monitoring the OHS practices of school administrators, identifying the problems experienced and taking the necessary precautions. Also leadership, management, school success, etc. Research can be done on the relationship between issues such as school OHS performance.

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