

# THE VALIDITY AND RELIABILITY STUDY OF WORK MOTIVATION SCALE FOR TURKISH POPULATION

Baki YILMAZ<sup>1</sup>

## Abstract

The purpose of this study was to determine the validity and reliability of Work Motivation Scale (Blais et. Al. 1993) on Turkish university faculties. The sample of the study was composed of 401 academicians working in the departments of Physical Education and Sports of Turkish universities. The mean age of the subject group was  $39.53 \pm 7.60$  year. In the data gathering process Work Motivation Scale, which was composed of 31 items group under 8 sub scale, was used

In the statistical analysis exploratory and confirmatory factor analysis were conducted to the data. The exploratory factor analysis results revealed that 27 items of the total scale was grouped under six-subfactor which have an eigenvalue greater than 1. The first sub-factor was composed of 17.,21.,10.,6.,31.,25. and 2. items, the second sub-factor was consisted of 27.,26.,16.,24.,1. and 29. items, the items 15.,8.,23. and 30.were grauped under third sub-factor, 28.,13. and 20. items comprised the fourth sub-factor, the fifth sub-factor was composed of 12.,7.,14. and 11. items, and the last sub-factor was composed of 5.,4. and 3. items. The internal consistencies of the subscales varied between .62 and .88. The internal consistency valve of of the overall scale was .81.

According to the confirmatory factor analysis the construct validity values of the sub-factors differed between .631 and .869.

As a conclusion, the statistical results pointed that Work Motivation Scale was a valid and reliable instrument in assessing the academicians work motivation levels

**Key Words:** Work Motivation, Validity, Reliability

## Introduction

Motivation, which is one of the top issue handled in recent studies, is also one of the most impatant concept and issue in business area. The motivetion of organizations. The higher the motivation, the beter the performance.

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*E-mail address:* bakiyilmaz14@hotmail.com. (B. Yilmaz).

Motivation as a concept can be defined as stimulating, directing and sustaining individuals' or working groups' efforts. Working motivation, which is affected from cultural and willingness to showing diligence to achieve organizational goals [1-2-3].

Scholars on this area have made various definitions on work motivation. Willingness to do something [4]. strengthening sustaining and directing behaviors in organizational settings [5]. power that directs people to choose, continue and hard-working on a job [6]. the process that creates goal-oriented behavior [7]. wish about achievement to organizational goals[8]. and the psychological powers that identify individuals' behavior, effort and resistance towards barriers in an organization [9].

Holt (1993) who has divided motivation into two parts, has developed internal and external motivation theories. While payment, promotion and applications about discipline are categorized under external factors, self-respect and proving self are categorized under internal factors. According to Holt (1993) internal motivation factors [10].

Individuals perform their activities or behavior as a result of internal pleasure they feel, on the other hand individuals also perform behaviors to gather privileged result in external motivation [11].

According to internal motivation there is no external control that arranges individuals' behavior and employees are motivated with the job itself. This type of motivation is specified as the experience of performing self-skills [12]. Internal motivators are directly related with the nature of the job and arises from the content of the job. Internal motivators include factors such as interesting and enforcing job, freedom in job, the importance of job according to the employee, participation, responsibility, variety, creativeness, opportunities for performing skills and abilities and positive feedback [13]. Internal factors are related with the needs that satisfies individual, and supports human resource, career development and personal needs [14]. A performance set out as a result of the promotion inside the job, can be explained with internal motivation concept [15].

External motivation is provided by external rewards. These rewards may be tangible or intangible [16]. If a mission is completed for achieving a reward, it can be explained with external motivation concept [15]. For instance, applauding an athlete for his/her performance or giving a financial (Money) reward for his/her achievement are examples of external reward [16].

According to Herzberg's two factor theory which evaluates internal and external motivation factors effect on employee motivation; the internal motivation factors, related with the content of the job itself, are motivating the employee, the external motivating factors are

related with overcoming the unsatisfactions of the employee with their job. According to this theory, while only internal factors provide high motivation, external motivation factors provide suitable situations or conditions for motivation. Working conditions, payment, organizational image, job security, promotion, social environment and status are some of the main external motivation factors [2-17-3].

Motivational factors must be identified and reasons for group working must be set for increasing work motivation. In this process economical benefits, which will provide richness in the relations between the employees and employers, must not be forgotten [18].

In Turkey related literature about work motivation is limited. There are few studies conducted on this topic and the scales used as instrument are less comprehensive than the Work Motivation Scale developed by Blais et. Al.(1993) [19-20-21]. Therefore, in this study testing the reliability and validity and adaptation of the Work Motivation Scale was aimed.

## **Methodology**

### **Sample**

The sample of the study was composed of 401 male; 316, female; 85 academic personnel whose mean age was  $39.53 \pm 7.60$  years.

### **Data Collection Instrument**

Work Motivation Scale (Blais et. Al. 1993), which was composed of 8 sub-scale including 31 item, was used as the data collection instrument [22]. Blais and his associates (1993) group 31 item under the sub-scales; knowledge related internal motivation, action related internal motivation, delayed internal motivation, external regulation internal motivation, internal amotivation and external amotivation. The original evaluation Likert-scale was 7 point scale where “1” represents “exactly inappropriate” and “7” representing “exactly appropriate”.

### **Data Analysis**

In the data analysis process of this study both exploratory factor analysis and confirmatory factor analysis were used.

### **Language Translation Process**

The original scale which was developed in french was translated into Turkish. In this process translation re-translation method and committee method was used. As the first stage, the scale was translated by three experts, who were well-qualified both in French and Turkish, into Turkish. Then as the second stage, it was re-translated from Turkish into French. By this process, both the contextual meaning and item meanings were preserved as they were in the original scale. Then the final version of the Turkish translation of the scale was distributed to 30 academicians to control the scale for language clarification. After the corrections made according to the suggestions, the final version of the scale was made ready for the main study.

## Results

### Exploratory Factor Analysis Results

To defect the Work Motivation Scale's suitability for factor analysis KMO and Bartlett's Sphericity tests were conducted. KMO tests value must be .60 or over, and Bartlett's Sphericity value must be statistically significant [23]. Results displayed that KMO is .875 and Bartlett's Sphericity tests was statistically significant ( $P < 0.01$ ), (Table1). Results revealed that data is suitable for conducting Exploratory factor analysis. The factor loadings were set as .30. In the factor analysis principle component analysis and varimax rotation technique was used. The results about exploratory factor analysis are reported in Table 2.

**Table 1. KMO ve Bartlett's Test of Sphericity table**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		<b>.875</b>
Bartlett's Test of Sphericity	Approx. Chi-square	4210.993
	df	351
	Sig.	<b>.000</b>

**Table 2. Work Motivation Scale's Factor Analysis Results**

Item no	Communalities	Factor1 Loadings	Loadings After Rotation						Corrected Item Total Correlation	Cronbach Alfa
			Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6		
17	.710	-.452	.815						.741	
21	.648	-.379	.792						.708	
10	.592	-.360	.752						.664	
6	.570	-.436	.732						.644	.88
31	.555	-.301	.726						.604	
25	.557	-.443	.702						.625	
2	.510	-.416	.687						.609	
27	.673	.676		.758					.679	
26	.589	.653		.713					.635	
16	.535	.599		.664					.571	.83
24	.589	.700		.645					.630	
1	.506	.574		.598					.509	
29	.496	.654		.586					.570	
15	.660	.544			.753				.656	
8	.622	.404			.734				.560	.77
23	.614	.615			.658				.541	
30	.573	.508			.633				.528	
28	.703					.815			.567	
13	.700					.799			.553	.72
20	.612	.452				.687			.490	
12	.607	.595					.678		.545	
7	.575	.572					.636		.470	.74
14	.616	.641					.586		.564	
11	.529	.616					.510		.534	
5	.664	.345						.761	.505	
4	.587							.747	.377	.62
3	.604							.593	.405	

Total Scale Cronbach's Alpha level was .81

As a result of the analysis six sub-factor was identified. The variances explained by the factors are as followed, 1<sup>st</sup> factor (items 17, 21, 10, 6, 31, 25, 2) % 15.409, 2<sup>nd</sup> factor (items 27, 26, 16, 24, 1, 29) % 13.415, 3<sup>rd</sup> factor (items 15, 8, 23, 30) % 9.669, 4<sup>th</sup> factor (items 28, 13, 20) % 7.563, 5<sup>th</sup> factor (items 12, 7, 14, 11) % 7.390, 6<sup>th</sup> factor (items 5, 4, 3) % 6.530. The total variance explained by the sub-scales was % 59.976.

Items 19., 22., 9., and 18. were extracted because of loading in more than one sub-scale.

According to the internal consistency test results, Cronbach's alpha for the first sub-scale was .88, for the second sub-scale was .83, for the third sub-scale it was .77, the fourth sub-scale's Cronbach's alpha level was .72, the fifth sub-scale's Cronbach's alpha level was .74 and the last sub-scale's Cronbach's alpha level was .62. The Cronbach's alpha level of the total scale was .81.

## Confirmatory Factor Analysis Results

In the confirmatory factor analysis of the scale AMOS 6.0 Program was used. In the analysis Maximum likelihood method was conducted. The results of confirmatory factor analysis is reported in Figure 1.

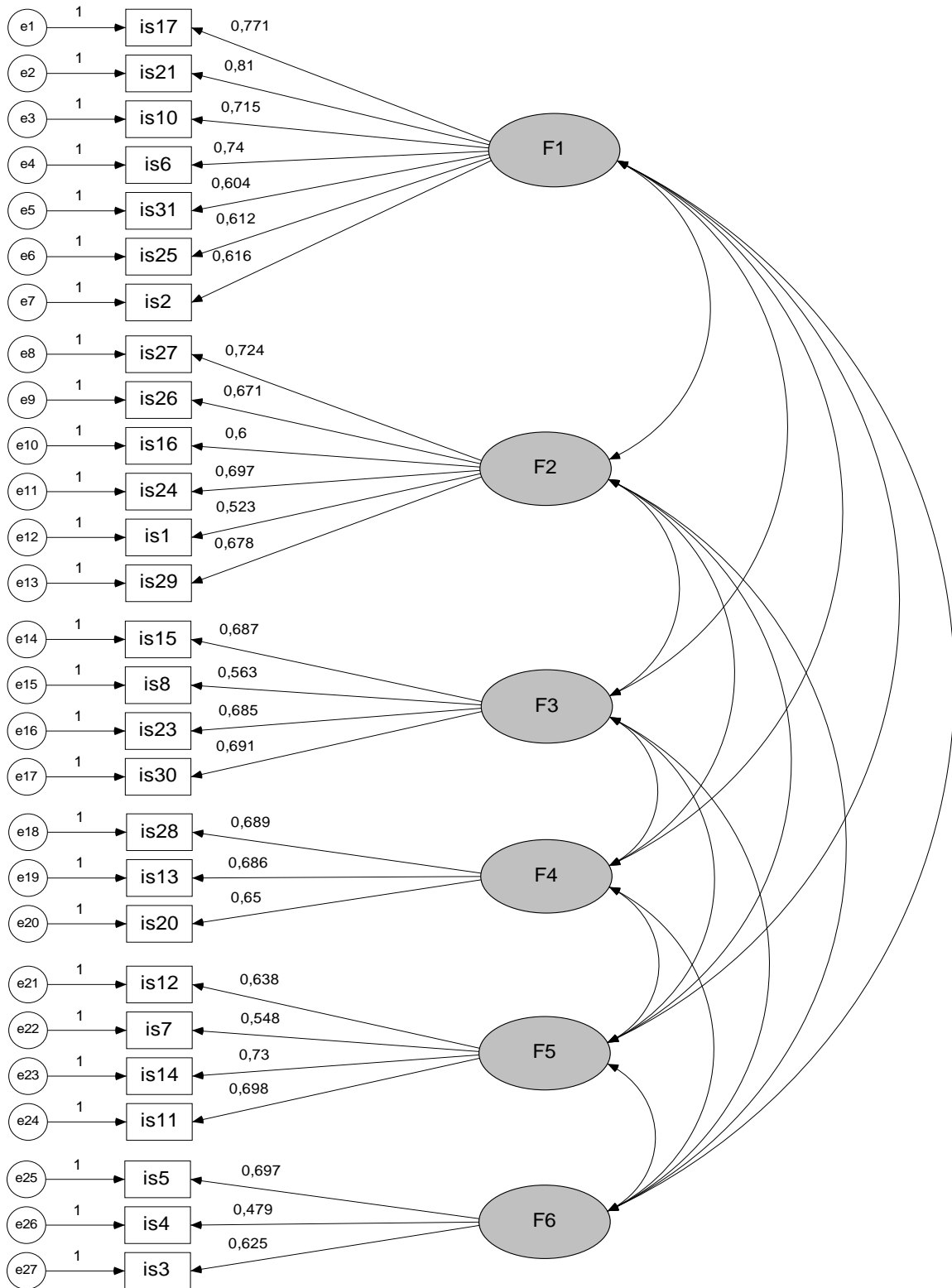


Figure 1. First Degree Confirmatory Factor Analysis

**Table 3. Confirmatory Factor Analysis Results of Work Motivation Scale**

Factors	Items		Stand. Reg. weigh	t	P
Internal and External Amotivation ( $\rho_c=0,869^*$ )	is17	F1	.771		
	is21	F1	.810	15.916	.000
	is10	F1	.715	14.561	.000
	is6	F1	.740	13.989	.000
	is31	F1	.604	14.314	.000
	is25	F1	.612	12.098	.000
	is2	F1	.616	12.141	.000
Stimulation related Internal Motivation ( $\rho_c=0,814^*$ )	is27	F2	.724		
	is26	F2	.671	13.987	.000
	is16	F2	.600	10.890	.000
	is24	F2	.697	12.630	.000
	is1	F2	.523	9.443	.000
	is29	F2	.678	12.423	.000
Delayed Internal Motivation ( $\rho_c=0,752^*$ )	is15	F3	.687		
	is8	F3	.563	11.434	.000
	is23	F3	.685	11.314	.000
	is30	F3	.691	11.058	.000
Internal Motivatio-External Regulation ( $\rho_c=0,715^*$ )	is28	F4	.689		
	is13	F4	.686	10.236	.000
	is20	F4	.650	8.773	.000
Knowledge and Development Related Internal Motivation ( $\rho_c=0,750^*$ )	is12	F5	.638		
	is7	F5	.548	9.248	.000
	is14	F5	.730	11.046	.000
	is11	F5	.698	10.645	.000
Social Status and Self-confidencel Related Motivation ( $\rho_c=0,631^*$ )	is5	F6	.697		
	is4	F6	.479	7.400	.000
	is3	F6	.625	7.841	.000

\* $\rho_c$  : *Construct Validity* =  $(\sum \text{standardized reg. weigh.})^2 / (\sum \text{standardized reg. weigh.})^2 + \sum \text{measurement errors}$  (Fornell ve Larcker, 1981 : 46) [24].

Results in table 3. reveal that the factors extracted by exploratory factor analysis were confirmed. The standardized regression weighs of item grouped under factors were heigh enough and sattistically the items were significant in the factors where they were grouped. The construct validity value of internal and external amotivation factor was .869, delayed internal motivation factor's construct validity value was .752, internal motivation- external regulation factors construct validity score was .715, knowledge and development related internal motivation factors construct validity was .750, social status and self-confidence related internal motivation factor's construct validity was .631 and stimulation related internal motivation factor's construct validity score was .814. According to Hair et al.(1998) and Şimşek (2007) the construct validity score have to be at least .50 and over [25-26]. According to this the results of this study painted that factors are valid, reliable and the items are related with the factor they compased. The items goodness of fit indexes are reported in table 4.

Because of the similarity of items goodness of fit indexes with the first degree confirmatory factor analysis the results were reported in a single table (see Table 4.)

**Table 4. Goodness of Fit Indexes of Work Motivation Scale**

Fit Measure	Good Fit	Acceptable Fit	Suggested Model
RMSEA	$0 < \text{RMSEA} < 0.05$	$0.05 \leq \text{RMSEA} \leq 0.10$	0.031
NFI	$0.95 \leq \text{NFI} \leq 1$	$0.90 \leq \text{NFI} \leq 0.95$	0.916
CFI	$0.97 \leq \text{CFI} \leq 1$	$0.95 \leq \text{CFI} \leq 0.97$	0.975
GFI	$0.95 \leq \text{GFI} \leq 1$	$0.90 \leq \text{GFI} \leq 0.95$	0.937
AGFI	$0.90 \leq \text{AGFI} \leq 1$	$0.85 \leq \text{AGFI} \leq 0.9$	0.910
$\chi^2/\text{df}$	$0 < \chi^2/\text{df} < 3$		$363.983 / 263 = 1.384$

*Schermelleh-Engel ve Moosbrugger, (2003: 23-74), [27].*

In confirmatory factor analysis, the score which tests the statistical suitability of the sample and the suggested model is  $\chi^2$  [28].  $\chi^2$  test the equality of covariance matrix of the population and the covariance matrix which was conducted in model. But, this value is sensitive to sample size and in multi-factored samples the  $\chi^2$  score gets higher, therefore corrected  $\chi^2$  score with df ( $\chi^2/\text{df}$ ) is much more suitable [29]. The  $\chi^2/\text{df}$  score was 1.384 in this analysis. This result points that the model is statistically significant. Additionally, IFI score (.95), [26] ; which did not mentioned in table 4, was found .975.

According to the goodness of fit indexes of the model RMSEA, CFI, GFI and AGFI scores were in well fit level and NFI score was between acceptable level. Those results showed that the factors extracted in exploratory factor analysis were confirmed with confirmatory factor analysis.

## Discussion and Conclusion

Work Motivation Scale's, which was developed by Blais et al.(1993), original language is French. The results of this study, which aimed testing the validity and reliability of scale for Turkish population, show parallelism with the original scale with working item numbers. In the Turkish version only four item (items 19, 22, 9, and 18) did not work.

In the determination of sample size in reliability and validity studies, there are various suggestions. According to Cattell (1978) 3 or 6 person per item is enough, Gorsuch (1983) reports that at least 5 person per item is needed [23]. While Jeong (2004) emphasized that more than 5 person is need per item [30], Hair and associates (1998) mentioned that at least 10 person per item is needed in such analysis [25]. Hoyle (1995) suggested that the sample size should be 250 subject or more [31]. In our study the ratio was 13 subjects per item.



The internal amotivation and external amotivation subscales were combined in one sub-scale our study, as internal and external amotivation sub-scale. Our third sub-scale which we used the same name “delayed internal motivation” was paralel with the fifth sub-scale of Blais and associates original scale “delayed internal motivation” compesed of items 8, 15, 23, and 30. The results showed that the all the items of “internal motivation external regulation” suc-scale with one exception (item5) had strength loading under 4 th sub-scale.

The second sub-scale (stimulation related internal motivation) of our study was composed of items 27, 26, 16, 24, 1 and 29 : the items 16, 24 and 1 which composed the “stimulation related internal motivation” sub-scale in the original scale were load in the second sub-scale in our analysis. Additionally to these items, 27.item of action related internal motivation sub-scale, 26. item of identified internal motivation and 29. item of knowledge related internal motivation were also loaded in the second sub-scale of our study. The similarity of the items and all items conceptual relation with internal motivation may be the cause of this result.

The fifth sub-scale which was named knowledge and development related internal motivation was composed of 12, 7, 14 and 11. items. In the original form of the scale the 7. and 14. items were loaded in knowledge related internal motivation sub-scale and 12. item was loaded in action related internal motivation sub-scale of the original scale.

The sixth sub-scale of our study, which we called social status and self-confidence related internal motivation was composed of 5., 4. and 3. items. In the original form of the scale the 5. item was loaded under internal motivation-external regulation, 4. item was loaded under action related internal motivation and 3. item was loaded under identified internal motivation sub-scale.

The difference in the loading of items in second, fifth and sixth sub-scales in our study, may be resulted from language and cultural variation, and from different educational setting.

According to Tezbaşaran (1997) in a Likert type scale the internal consistency score should be closer to 1 [32]. Kayış (2008) mentioned that an internal consistency score between .00 and .40 is not reliable, between .40 and .60 is reliable but low, an internal consistency score between .60 and .80 is quite reliable [33]. According to this criteria the 1. and 2. subscale are highly reliable and the other sub-scales are quite reliable.

Finally, it can be concluded that Work Motivation Scale is a valid and reliable instrument according to the exploratory factor analysis and confirmatory factor analysis

results. Results displayed that the Turkish adapted version of Work Motivation Scale is a suitable scale to be used in Turkish Population.

In the future researches, testing the validity and reliability of the scale in different sample would be fruitful for standardizing the scale.

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