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The Adaptation Study of the School Quality Management Culture Survey (SQMCS) to Turkish

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ABSTRACT

The purpose of this study has been to examine the validity and reliability of the Turkish version of School Quality Management Culture Survey (SQMCS). A total of 209 teachers working at primary and secondary schools in Izmir participated in the study. The validity and reliability of the measurement tool consisting of 31 items and 9 sub-dimensions was analyzed using LISREL 8.51 and SPSS 13.0 programs. Confirmatory Factor Analysis (CFA) was used to determine the validity of the measurement instrument. The results of the CFA of the scale indicated that the data was in good fit with the original factor structure (ϰ2/df=1.33, RMSEA=.040, 90%CI=.031-.049, SRMR=.061, CFI=.95, NNFI=.94, GFI=.86). The results of the item analysis on the mean differences ($-2.878 \leq t \leq -11.255$) between the 27% lower and upper groups making up the scale indicated that the items have distinctive properties ($p<.01$). Coefficient of internal consistency of the sub-dimensions of the scale range between .71 and .89 (Cronbach's alpha) and inter-item correlation coefficients between (rij).38 and .67.The results obtained concerning the psychometric properties of the Turkish version (SQMCS-tr) reveal that of the scale is a valid and reliable measurement instrument to determine teachers' perceptions of school quality culture management survey.

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Keywords:
School quality management culture, reliability, validity

Introduction

Today technological advancements and competition increasing with social changes and globalization affect educational institutions as well; and force these institutions to search for new ways related to the effectiveness and efficiency of education. In this search, educational institutions are focusing day by day on the development quality and the elements concerning quality. This effort for quality helps educational institutions improve themselves and gain competitive power by adapting to environmental conditions (Özevren, 2000).

Quality is a target that moves depending on customers' requests and requirements. Therefore, organizations should design their services in a way that they could be renewed in accordance with customers' present and future requests and requirements. In this respect, Olsen, Ching-Yick and Joseph (1998) define quality as doing the right thing in the right way and coherently. Total Quality Management is an understanding that focuses on quality in all production processes of organizations and that ensures improvement of all processes considering everybody's expectations with the participations of all employees (Özer, 2011). Dahlgaard, Kristensen and Kanji (2002) state that Total Quality Management is based on five

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main principles: management's commitment (leadership); focus on the customer and the employee; focus on facts; continuous improvements (KAIZEN); everybody's participation.

Issues of quality management and quality improvement have become necessary for success for the service industry which has a dominant role on the world economy (Shridhara, 2010). This necessity also shows itself within the education sector. Undoubtedly, societies structure their education systems in line with their own ideologies in compliance with their social and economic systems (Tanrıöğen, 2011). However, it has become an inevitable necessity to reach quality in order to attain the educational purposes specified. To this end, educational organizations have started to allow for Total Quality Management practices in order to maintain their own effectiveness and efficiency (Detert, Schroeder, & Cudeck, 2003).

Organizations do not have to use the letters TQM for the Total Quality Management practices they perform. Many organizations sustain the philosophy under the names they give themselves (e.g., School Development Program). Rather than the name given to the program, the effect of the quality program on the school culture is important (Sallis, 2005). In order to implement Total Quality Management in the field of education, it is necessary to create a quality culture (Militarua, Ungureanua, & Chenic, 2013). Organization culture consists of a number of significant properties. The observed behavioral patterns, norms, dominant values, philosophy, rules and organizational climate come together and reflect the climate of the environment. Organization culture is the common perception of everybody within the organization and each individual has to share this perception (Luthans, 1992). In order to realize cultural change successfully it is necessary to develop structures allowing for the practice of strategies and prepare employees for change through training (Kaya, 2009).

In the process of culture change of education institutions, several changes may be needed in the organization's management in addition to the attitudes and working approaches of the employees. Many attempts of quality falter as the senior management turns into a traditional management very quickly (Sallis, 2005). A number of factors such as the employees in the organization, the roles they have been accustomed to in time and their skills cause resistance against this change. However, despite certain obstacles and resistance, quality can be managed and changed in time (Luthans, 1992). One of the important reasons claimed concerning the failure of total quality management practices in education is the limited implementations occurring due to the incoherence between the existing culture at schools and the quality management culture (Detert, Schroeder, & Cudeck, 2003).For the management of necessary cultural changes in order to eliminate these limited implementations specification of the existing quality cultures of education institutions is very important. The aim of this study was to adapt The School Quality Management Culture Survey (SQMCS) developed by Detert, Schroeder and Cudeck (2003) into Turkish and to carry out its validity and reliability analyses.

Methods

This study was performed methodologically in order to provide the Turkish equivalence of SQMCS and to test the reliability and validity of the SQMCS-tr.

Participants

209 teachers working at 6 different primary and secondary schools within the city center of Izmir participated in the study. The participants consisted of 161 (%77) female and 48 (23%) male teachers with professional experience ranging from 1 to 42 years. Average age of the participating teachers was calculated as40.05 (*SD*=9.88).

Data Collection Instrument

The School Quality Management Culture Survey (SQMCS). SQMCS was developed by Detert, Schroeder and Cudeck (2003) in order to determine the beliefs, fundamental values and behaviors concerning quality culture at schools. It consists of 9 sub-dimensions and 31 items namely shared vision (3

items), customer focus (4 items), long-term focus (4 items), continuous improvement (4 items), teacher involvement (3 items), collaboration (3 items), data-based decision-making (4 items), systems focus (3 items), quality at same cost (3 items). The CFA results applied to the model belonging to the measurement instrument developed considering the Total Quality Management (TQM) literature compiled within the scope of general organization in the last ten years was calculated as RMSEA=.041 (95%CI=.038; .044) and GFI= .94. In addition, it was reported that coefficients of reliability among sub-dimensions ranged between .71 and .89. The items forming the scale are responded over a 5-point Likert- type scale from 1=*strongly disagree* to 5=*strongly agree* (Detert, Schroeder, & Cudeck, 2003).

Procedure of Study

Before starting data collection for the study, the required written permissions were taken from Izmir Provincial Directorate of National Education. Following the written permissions, the principals of the schools were informed about the procedures. Teachers were informed about the purpose of the study and their participation was ensured on a volunteer basis. Personal identification details of the teachers were not given on the forms applied in the study. The scales were applied in the classrooms at the institutions where teachers work and the implementation was completed in nearly 20 minutes.

Translation Process

The initial translation of the SQMCS from English to Turkish was performed independently by two bilingual translators. Assessment of forward translations was performed by a group of three academicians who attended several social research projects. The agreed Turkish translations were then retranslated to English by another English literature lecturer. The backward translation was reviewed by a group which consisted of the researchers, a Turkish lecturer and another English lecturer. The final version of Turkish SQMCS (SQMCS-tr) was reviewed by a panel which consisted of the researchers and three K-12 teachers. At the end of the panel, it was decided to use the final version of SQMCS-tr.

Analysis

The data set obtained from the participation of the teachers in the study was analyzed using SPSS 13.0 and LISREL 8.54 statistical programs. The criterion validity of the items forming the scale was examined by t-test based on average differences obtained from 27% lower and upper groups. In the item analysis done in order to present the distinctive power of the items forming the measurement tool was considered as .05. Within the scope of the reliability analyses, inter-item correlation and coefficients of internal consistency (Cronbach's alpha) were taken into consideration and evaluated. For the construct validity of the measurement instrument, CFA was applied in order to test the goodness of fit of the factor structure. In CFA applications, chi-square test statistic (χ^2/df) and various fit indexes like RMSEA (Root Mean Square Error of Approximation), 90%CI (90% Confidence Interval), SRMR (Standardized Root-Mean-Square Residual), CFI (Comparative Fit Index), NNFI (Non-Normed Fit Index) and GFI (Goodness of Fit Index) were taken into consideration and interpreted.

Results

As a result of the reliability analyses conducted, Cronbach's alpha values of the 9 sub-dimensions forming the SQMCS-tr were calculated as .71 for teacher involvement, collaboration, quality at same cost; .72 for long-term focus, data-based decision-making; .74 for shared vision, systems focus; .86 for continuous improvement and .89 for customer focus. In addition, inter-item correlation coefficients of the items forming the sub-dimensions of the measurement instrument range between .38 and .67 (Table 1).

In Table 1, the results of independent lower and upper groups analyses based on average differences indicated that the t-values of the items range 2.87 and 11.25. Therefore, the results of the item analyses for

27% lower and upper groups carried out in order to present the criterion validity of the 31 items forming the SQMCS-tr showed that all the items have significant levels of distinctive property (p<.01).

Table 1. Results of item analysis and reliability test for the SQMCS-tr

	Lower ($\bar{X}$±SD)	Upper ($\bar{X}$±SD)	t **	α ($\bar{r}_{ij}$)
Shared vision				
Q7-In setting classroom goals. I consider the overall vision and goals of our school. (Sınıf hedeflerini belirlerken her zaman okulumuzun genel görüş ve hedeflerini göz önünde bulundururum)	3.55±.80	4.64±.55	-8.32	
Q12-I understand our school mission as it applies to my work. (İşim için geçerli olan okulumuz misyonunu anlıyorum)	3.57±.82	4.55±.60	-7.18	.74 (.50)
Q21-The school's overall vision and goals guide my day-to-day work with students. (Okulun genel vizyon ve hedefleri öğrencilerle yaptığım çalışmalara yön verir)	3.03±.93	4.44±.78	-8.65	
Customer focus				
Q4-Standards for student performance are determined by people outside the school. (Öğrenci performansına yönelik standartlar, okul dışındaki kişiler tarafından belirlenir)	2.28±.88	3.75±1.31	-6.91	
Q8-People outside the school drive decisions about student discipline. (Okul dışından kişiler, öğrencilerin disipliniyle ilgili kararlara yön verirler)	2.14±1.05	3.76±1.32	-7.20	.89
Q15 (rs)-Educational professionals are the primary decision makers on curriculum for our school. (Eğitim uzmanları okulumuzun müfredatının hazırlanmasında başlıca karar veren kişilerdir)	2.30±.93	3.78±1.26	-7.07	(.67)
Q23-Curriculum is determined with significant input from people outside the school. (Müfredat okul dışından insanlardan gelen önemli girdilerle belirlenir)	2.19±.98	3.80±1.25	-7.54	
Long-term focus				
Q1(rs)-Our long-term objectives change with the composition of the school board. (Uzun vadeli hedeflerimiz okul yönetimi ile paralel olarak değişir)	2.53±.85	3.39±1.12	-4.55	
Q11- Our school board has similar goals from year to year. (Okul yönetimimiz her yıl benzer hedeflere sahiptir)	2.19±.90	3.16±1.02	-5.28	.72
Q28(rs)-Every time we get a new administrator, the long-term objective esteem to change. (Ne zaman yeni bir yönetici gelse, uzun vadeli hedeflerde değişiklik gözlenir)	2.76±.91	3.26±.92	-2.87	(.38)
Q31-When we introduce a major school improvement program, we give it at least 3 years to show results. (Önemli bir okul gelişim programı başlattığımızda, sonuçlarını almak için en az üç yıl bekleriz)	2.17±.87	3.05±.99	-4.92	
Continuous improvement				
Q3-I use student feedback to improve my courses each time I teach. (Öğrettiğim dersleri geliştirmek için öğrenci dönütlerini kullanırım)	3.57±.68	4.78±.49	-10.77	
Q16(rs)-I tend to maintain things as they are unless someone demonstrates a better way. (Birisi daha iyi bir yol göstermedikçe, işleri olduğu gibi sürdürmeye devam ederim)	4.07±.78	4.69±.60	-4.74	.86
Q22(rs)-I do not change things unless they are not working. (İşe yaramaz hale gelmediği sürece bir şeyleri değiştirmem)	3.62±.72	4.71±.52	-9.05	(.61)
Q26-I not only teach my classes, but constantly improve them. (Derslerimi sadece öğretmekle kalmam, onları aynı zamanda geliştiririm)	3.60±.70	4.83±.41	-11.25	
Teacher involvement				
Q2-Part of my job includes working on projects aimed at school wide improvement. (İşimin bir kısmı okul çapında gelişimi amaçlayan projeler üzerine çalışmaktır)	3.76±.71	4.30±.68	-4.05	
Q19-I feel some personal responsibility when our school improvement goals are not met. (Okul gelişim hedeflerimize ulaşılmadığında bir nevi kişisel sorumluluk hissederim)	3.76±.76	4.33±.79	-3.88	.71 (.45)
Q29- I am responsible for improving things with in the school, even when they do not directly involve my own classroom. (Kendi sınıfımı doğrudan ilgilendirmeseler de okul içinde işleyişi geliştirmekten sorumluyum)	3.78±.80	4.35±.69	-4.01	
Collaboration				
Q5-There is ongoing collaborative work a cross subject areas in this school. (Bu okulda branşlar arasında devam eden işbirlikli bir çalışma ortamı bulunur)	3.76±.71	4.71±.56	-7.79	
Q27-I frequently have conversations about my teaching practices with teachers from other subject areas / departments. (Diğer alan/bölümlerden öğretmenlerle öğretmenlik uygulamalarım konusunda sık sık konuşurum)	3.96±.71	4.75±.47	-6.85	.71 (.45)
Q30-Work time is structured to provide me with opportunities to work with other teachers. (Çalışma zamanları diğer öğretmenlerle çalışmama fırsat tanıyacak şekilde düzenlenmiştir)	3.94±.72	4.60±.62	-5.17	
Data-based decision-making				
Q9-I use data from surveys to assess teaching and learning. (Öğretme ve öğrenmeyi değerlendirmek için anketlerin verilerini kullanırım)	2.60±.77	3.85±1.05	-7.14	
Q13-If I propose a change. I bring data to support my proposal. (Bir değişim önerisinde bulunursam, önerimi desteklemek için veri sunarım)	3.25±.83	4.50±.73	-8.38	.72
Q18-I use a breakdown of students' test results to evaluate my teaching. (Öğretmenliğimi değerlendirmek için öğrenci testlerinin dökümünü kullanırım)	2.66±.79	3.78±1.21	-5.79	(.39)
Q24-I test my assumptions about the causes of student behavior and performance with data. (Öğrenci davranışı ve performansının nedenlerine ilişkin varsayımlarımı veriler kullanarak test ederim)	2.82±.71	4.12±.81	-9.01	
Systems focus				
Q6-When a student is performing poorly, I try to identify where the system is failing him or her. (Bir öğrencinin performansı zayıfsa, sistemin onu nerede başarısızlığa uğrattığını belirlemeye çalışırım)	3.41±.62	4.51±.60	-9.53	
Q17-When something goes wrong, I typically look for the cause in our processes rather than in specific staff members. (Bir şeyler ters gittiğinde, genellikle sebebini belirli personelde değil süreçlerimizde ararım)	3.12±.71	4.19±.88	-7.05	.74 (.49)
Q25-When there is a problem in my classroom, I identify where the systems need to be improved to keep the problem from happening again. (Sınıfımda bir sorun olduğunda, sorunun tekrar ortaya çıkmaması için sistemde neyin geliştirilmesi gerektiğini belirlerim)	3.44±.68	4.66±.51	-10.60	
Quality at same cost				
Q10 (rs)-Improving the quality of education for students requires more money. (Öğrenciler için eğitimin kalitesini geliştirmek daha fazla para gerektirir)	3.85±.88	4.39±.88	-3.20	
Q14-My approach to educating students can be improved without increasing the budget. (Öğrencileri eğitme konusundaki yaklaşımım bütçeyi arttırmadan geliştirilebilir)	3.91±.85	4.48±.63	-4.01	.71 (.45)
Q20-I have made changes to improve student out comes without additional resources. (Öğrenci çıktılarını geliştirmek için ek kaynak kullanmadan değişiklikler yaptım)	3.98±.92	4.41±.78	-2.65	

**p<.01, (rs) = reverse item, α = Cronbach's Alpha, $\bar{r}_{ij}$ = Inter-Item Correlations

The standardized lambda (λ), $R^2$and t-values obtained from the CFA applied in order to test the validity of the structure consisting of 31 items and 9 sub-dimensions included in the original form of the measurement instrument are given in Table 2.

Table 2. Confirmatory factor analysis results of the SQMCS-tr

	Item no	Standardized λ	R^2	t *
Shared vision	Q7	.77	.60	12.14
[a] A shared vision and shared goals among faculty, staff and administrators are critical for school success.	Q12	.68	.47	10.37
	Q21	.64	.41	9.62
Customer focus	Q4	.98	.95	19.06
[a] Educational needs should be determined primarily by parents, community groups, students, and others take holders.	Q8	.68	.47	11.09
	Q15(rs)	.95	.91	18.21
	Q23	.65	.43	10.50
Long-term focus	Q1(rs)	.47	.22	7.10
[a] Improving education requires a long-term commitment.	Q11	.99	.98	18.02
	Q28(rs)	.17	.03	2.50
	Q31	.94	.88	16.58
Continuous improvement	Q3	.96	.93	18.84
[a] A school should strive to make continuous changes to improve education.	Q16(rs)	.33	.11	4.86
	Q22(rs)	.91	.83	17.02
	Q26	.98	.97	19.59
Teacher involvement	Q2	.85	.73	12.15
[a] Teachers should be active in improving the overall school operation.	Q19	.34	.12	4.72
	Q29	.90	.81	12.76
Collaboration	Q5	.73	.53	9.85
[a] Collaboration is necessary for an effective school.	Q27	.73	.53	9.88
	Q30	.53	.29	7.14
Data-based decision-making	Q9	.60	.37	8.64
[a] Decision-making should rely on factual information.	Q13	.66	.44	9.69
	Q18	.54	.29	7.49
	Q24	.67	.44	9.71
Systems focus	Q6	.77	.59	12.20
[a] Quality problems are caused by poor systems and processes, not by teachers.	Q17	.55	.30	8.00
	Q25	.79	.63	12.75
Quality at same cost	Q10(rs)	.58	.34	7.71
[a] Quality can be improved with the existing resources.	Q14	.81	.66	10.27
	Q20	.64	.41	8.40

*p<.05, (rs) = reverse item, [a] Construct of sub-dimension

Table 3. Chi-square statistic and fit indexes of the SQMCS-tr

χ^2	Df	χ^2/df	RMSEA	%90 CI	SRMR	CFI	NNFI	GFI
530.94	398	1.33	.040	.031-.049	.061	.95	.94	.86

χ^2=Chi-Square, df=Degrees of Freedom, χ^2/df=Chi-Square/Degrees of Freedom, RMSEA=Root Mean Square Error of Approximation, CI=Confidence Interval, SRMR=Standardized Root Mean Square Residual, NNFI=Non-Normed Fit Index, CFI=Comparative Fit Index, GFI=Goodness-of-Fit Index

Within the scope of the fit indexes evaluated to test the fit of the data obtained from the teachers to the existing factor structure, χ^2/df ratio is found to be 1.33. Moreover, in the other fit indexes it is seen that the 90%CI range is .031 and .049, RMSEA is .040, and SRMR is .061. Also, other values were found as .95 for CFI, and .86 for NNFI and GFI (Table 3).

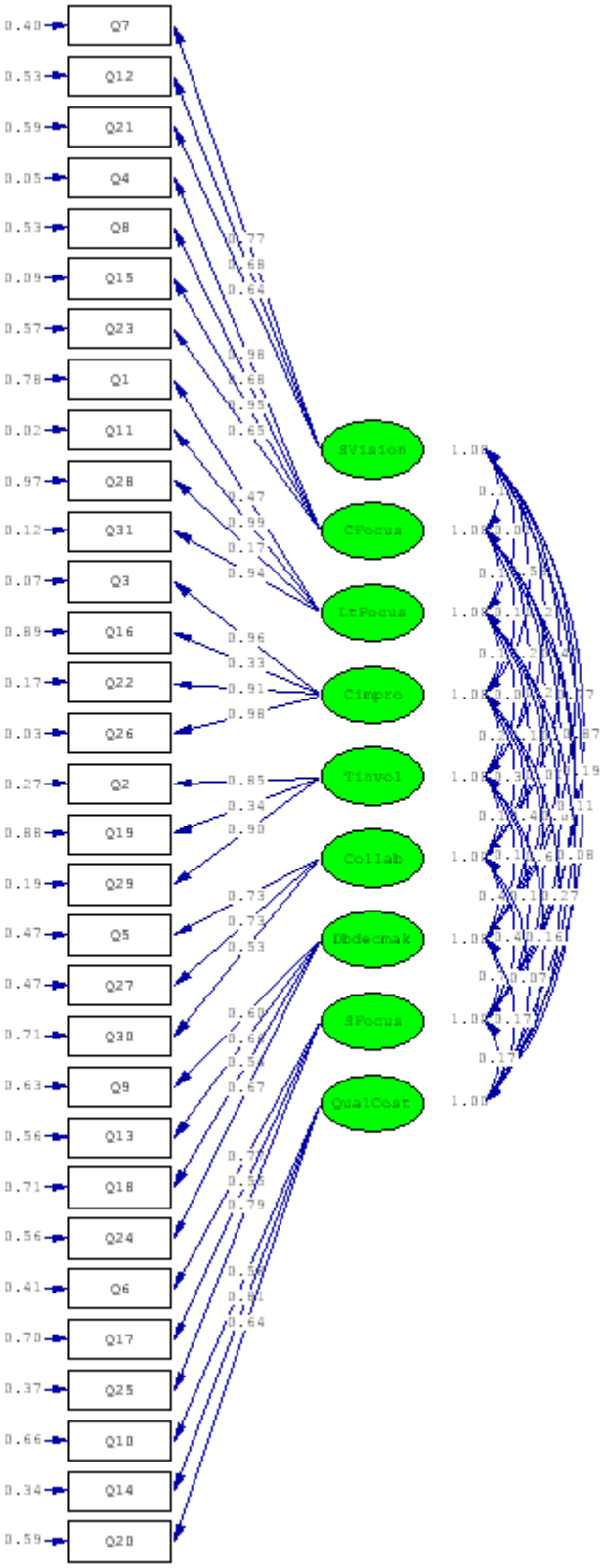


Figure 1. CFA model of SQMCS-tr

Discussion and Conclusion

The psychometric properties of SQMCS-tr consisting of 31 items were examined in this study. Internal consistency coefficients (Cronbach's alpha) of the 9 sub-dimensions of the scale range between .71 and .89. Values of .70 and over for these values shows the reliability of the measurement tool (Nunnally, 1978; Nunnally, & Bernstein, 1994; Sipahi, Yurtkoru, & Çinko, 2008). It has been found that correlation coefficients occurring among the items forming the scale range between .38 and .67. Büyüköztürk (2004) suggests that in the interpretation of inter-item correlation coefficients, the criterion value has to be taken as at least .30. In addition, the results of 27% lower and upper groups item analysis which tested the distinctiveness properties of the items forming the scale show that t-values of the items are at least 2.87. In the studies carried out, it is stated that t-values have to be at least 1.96 (Kelloway, 1998; Hair, Black, Babin, Anderson, & Tatham, 2006) at the level of $p<.05$; and at least 2.57 (Şimşek, 2007) at the level of $p<.01$ in order for them to be accepted statistically significant. When all these findings are examined in Table 1, it is possible to suggest that the items forming the measurement instrument are sufficiently distinctive and the sub-dimensions are adequately reliable.

Considering the results of the CFA, the fit of the data set obtained from the study with the factor structure consisting of 31 items and 9 sub-dimensions, t-values showing the definability of the sub-dimensions by the items are significant at $p<.05$ level. Chi-square statistic (χ^2/df) was calculated as 1.33. Values under 2 for this statistic are accepted as an extremely good result for the sufficiency of model-data fit (Byrne, 1989; Chau, 1997; Schmelleh-Engel, Moosbrugger, & Müller, 2003).

Values between .05 and .08 for RMSEA and SRMR among the fit indexes considered are seen as the indicators of good fit (Byrne, 1989; Kelloway, 1998; Hu, & Bentler, 1999; McDonald, & Moon-Ho, 2002; Schmelleh-Engel, Moosbrugger, & Müller, 2003). The fact that the RMSEA value of the research model was .040, and SRMR value was .061 meets these criteria. Furthermore, the range of confidence intervals (90%CI) of RMSEA were between .031 and 0.49.The lower band of the 90%CI of RMSEA should be less than .05 (Kline, 2011). In addition to these criteria, values of at least .90 and over for NFI and CFI, and at least .85 and over for GFI show good fit (Marsh, Balla, & McDonald 1988; Hu, & Bentler, 1999; Schmelleh-Engel, Moosbrugger, & Müller, 2003; Farias, & Dixon, 2005). In this respect, values of .95 for CFI, .94 for NNFI and .86 for GFI calculated for the model created in the study support the sufficiency of the model-data fit.

All the findings obtained from the study show that SQMCS-tr is a reliable and valid measurement instrument that can be used to determine the perceptions of Turkish teachers concerning school quality management culture.

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