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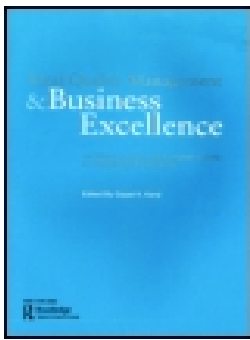


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# Organizational self-assessment based on common assessment framework to improve the organizational quality in public administration<sup>†</sup>

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The aim of this paper is to develop a new simple Likert type organizational quality assessment tool based on the European Union Common Assessment Framework to measure organizational quality. The research group consists of 1964 employee in the public organizations. 626 public employees answered the scale developed by the researchers of this study which is called Common Assessment Framework – Organizational Quality Scale (CAF-OQS). To explain the validity of the scale, expert opinions and pilot studies were benefited and then an Exploratory Factor Analysis and Confirmatory Factor Analysis were conducted to construct validity. The sampling was adequate and the scale had a structure with five factors. The explained variance showed that the scale put forth the five factors variable which we call as ‘organizational quality’ in a high percentage. Factor load values asserted that there was a high relation between items and organizational quality factors. Item-total correlations showed the internal consistency of the scale as high. Cronbach alpha values of the materials revealed the high reliability of the scale. All in all, CAF-OQS is a highly valid and reliable self-assessment tool that can be applied to all employees by public administrators who want to improve the organizational quality and services.

**Keywords:** Common assessment framework (CAF); total quality management; organizational self-assessment; organizational quality; public administration

## 1. Introduction

The need for improvement of performance and results of public services has never been more important (Vakalopoulou, Tsiotras, & Gotzamani, 2013, p. 744). So performance measurement is an increasingly important and ever more frequently monitored measure of excellence in public administration (Tomažević, Seljak, & Aristovnik, 2016, p. 1396). An effective management is based on an effectively measured performance and results of the performance. It is determined that the first condition for the development and ultimate success is to develop a system of performance measurement and implementation. To provide successful results and to develop a system of performance measurement, it is important to know the boundaries of the organization and define the resources (Kanji, 2002, p. 715).

In additional to, it was observed that chronical problems of unproductive public administrations such as more tax, waste of resources, budget deficits, high inflation and unemployment could not be solved by traditional bureaucratic structure and processes. Thus, Total Quality Management (TQM) which is successfully applied in private sector of

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human oriented management has been adopted as a way out by public administration field (Morgan & Murgatroyd, 1997, p. 42–43).

TQM is defined as the process of achieving effectiveness and efficiency of the employees, customers and target audience by the active participation of all employees in the organization and the improvement of all activities in the organization (Tortop, İsbir, Aykaç, Yayman, & Özer, 2007, p. 275). Stringham (2004) asserts that although short-term TQM implementation efforts in public sector of different countries do not give a clear picture, TQM implements in public sector present observable changes in organizational culture, service performance and quality in the long run (p. 182).

In this aspect, public organizations need self-assessment tools to improve themselves and to correct their weaknesses. Self-Assessment is a method of the TQM that public organizations can apply themselves or by assistance. This method lets them apply self assessment by considering the processes of leadership, human resources, planning, social impact and citizen satisfaction and their results enable them to improve themselves according to results (Balci, 2007, p. 322).

Organizational inspections are usually related to concrete, measurable or objectively evaluated features. However, the situation is different in terms of self-assessment that aims to cover all systems of the organization. However, the expansion of the concept causes much more complex conceptual difficulties. This is because both the dimensions of the object are wide and the process of the self-assessment includes many abstract elements. Thus, not only the measurement but also the evaluations of these elements are considered to be quite difficult. There are two typical examples of areas that abstract elements come to the fore; management and human resources subsystems. On the other hand, the differences between excellent organizations and others arise from abstract factors (Conti, 1998, p. 19–20).

Organizational self-assessment is the sum of current performance assessments applied by the organizations and the most important stage of an implementable strategic plan. It is suggested that self-assessment shows directions of targets by revealing the capacity of the organization, but if the self-assessment is not appropriately performed, the capacity of the organization will be misevaluated and this will mislead the future plans of the organization (Goodstein, Nolan, & Pfeiffer, 1993, p. 225–226).

In recent decades, public sector organizations have been placing ever-more emphasis on the quality and excellence of their operations. For this purpose, they use different management tools and/or excellence models such as Common Assessment Framework (CAF), European Foundation for Quality Management model (EFQM) and Balanced Scorecard etc. The employees are one of the important elements of excellence in any organization (Tomažević, Seljak, & Aristovnik, 2014, p. 1336).

CAF is a quality management and self-assessment method that enables public organization to achieve their objectives and compare themselves with other public organization. CAF is also the newest public quality management model developed to improve service quality in public administration only. Nevertheless, there is still a gap in the literature about the effects of CAF on quality management. Because, scientific research studies are very limited and inadequate in evaluating and expanding implementations of CAF. Tomažević et al. (2014) asserts that an important aspect of excellence in any organization involves the employees (p. 1336). But, there is no scale to measure the opinion of all employees in the organization about CAF's quality management practices. And the number of people working in public organizations is quite high. Therefore, there is a need for a scale to scientifically take into account the opinions of all employees in the public organization on quality management. Our study helps to close this gap, contributing

to increasing the interest of CAF by a simple scientific scale. The purpose of this paper is to develop a simple scale covering all employees to measure the impact of CAF on quality management. In addition to, the purpose of this study is to stimulate interest in the use of CAF for the public sector to offer ideas about CAF to provide a basis direction for further improvement.

## 2. Theoretical background

### 2.1. Organizational self-assessment

Political, technological and economic changes in the world also affected for-profit organizations, social life and also public organizations. The idea of transferring the Neo-liberal economic understanding that emerged after 1980 and methods and practices of for-profit organizations to public organizations has spread. Therefore, public organizations forced themselves to change and to fulfil the expectations of citizens. As a result, in public administration, management methods of for-profit organizations such as TQM, strategic planning, performance/achievement management, self-assessment have become more important. At this point, the quality of goods and services that public organizations have assumed to provide to the community and a self-assessment tool for measuring citizen satisfaction degree is required (Balçı, 2007, p. 322).

Performance measurement is based on self-assessment (Emanet, 2007, p. 67). According to Çevik (2004, p. 251-252) performance is the degree of fulfilment of any work goods, and services. This means for public organizations to provide the goods and services to fulfil the performance of the community. Measuring, evaluation and management of the performance have an important place for public organizations and public administrators on the production of better and quality service and the satisfaction of the citizens in the provision of the services. According to Binney, experiences show that the following three elements that are the model, measurement and management must be presented absolutely by the self-assessment process (Kitapçı, 2001, p. 32-33; Ensari, 2002, p. 191). It is suggested that self-assessment has become an interesting concept for organizations in the world and its overall aim is to raise organizational performance. It is said that continuous improvements and evaluations of TQM occur particularly with the quality awards or business excellence models in recent years (McAdam & Leonard, 2005, p. 771).

Until now, many quality awards and improved quality assessment models have been developed around the world. There are many different national and international business excellence models that aim to create rules and scales of organizational quality, performance, and excellence. The most known and widely used of these models are Japan Deming Award, America Malcolm Baldrige National Quality Award and European Quality Award and Excellence Model/EFQM (Sampaio, Saraiva, & Monteiro, 2012, p. 181; Arumugam, Chang, Ooi, & Teh, 2009, p. 48; Hughes & Halsall, 2002, p. 257; Eskildsen, Kristensen, & Juhl, 2004, p. 50; Husain, Abdullah, Idris, & Sagir, 2001, p. 926; Zink & Schmidt, 1998, p. 147; Porter & Tanner, 2004, p. 3; Tari & Sabater, 2004, p. 268; Llusar, Tena, Puig, & Martin, 2009, p. 1). Besides these, there are other tools, awards and models such as SERVPERF, SERVQUAL, ISO 9000:2000, Six Sigma, Benchmarking, Quality Function Deployment (QFD), Kaizen, Performance Prism, RADAR matrix, Statistical Process Control, The Questionnaire Methods, UK Quality Award for Business Excellence, Swedish Quality Award, New Zealand National Quality Award, Rajiv Gandhi National Quality Award in India, Australia Quality Award, Singapore Quality Award, Danish Quality Award, Canada Excellence Award, Ludwig Erhard Award and KalDer National Quality Award in Turkey.

Another quality management and self-assessment tool are the European CAF that enables public organization to achieve their objectives and compare themselves with other public organization.

## **2.2. European Union CAF**

In line with self-assessment practices in public and developments in the world, it is determined that at the end of 90s public authorities of both European Union (EU) members and candidate countries need an easy and free self-assessment tool to understand the modern management techniques and help them practice (Engel, 2002, p. 35). It is emphasised that reforms in public sector raised new policies in which the productivity and effectiveness are increased, transparency and accountability is important and the knowledge of public service has taken attention. Along with these principles, some methods and techniques on focusing on one of them or based on matching them are created and one of these techniques, CAF has become a feature of public sector since the end of 1980s and early 1990s. In the late 1990s, many quality models and techniques were developed (ISO, EFQM, etc.) and then took its place in CAF and public sector (Staes & Thijs, 2005, p. 41).

It is stated that CAF is the first major effort for public administration in European Union (Bouckaert, 2002, p. 63). The first phase of CAF took place in 1998 as part of a quality idea that will be accepted throughout Europe in order to improve the quality of services offered to citizens in public organizations, to give a Europe Quality Award and organizational evaluation of public organizations. In 1998, to achieve these objectives by the cooperation of Ministries of EU who were responsible for Public on the development of public services, a group of national experts was composed of called Innovative Public Services Group by General Managers in EU member states. In 1998–1999 with the support of European Foundation of Quality Management, the German Administrative Sciences University in Speyer and European Institute of Public Administration (EIPA), CAF was developed as a self-assessment tool for public organizations (EIPA, 2012, p. 2).

The first trial of CAF was introduced to the participants at the 1st EU Public organizations Quality Conference which was organized to share the best practices from each member country in 2000 and it was taken as a decision to implement based on voluntariness. This trial version was revised later and so the first version was introduced at the 2nd EU Public organizations Quality Conference and put into operation in 2002. The second version of CAF was introduced at the 4th EU Public organizations Quality Conference in 2006 (EIPA, 2012, p. 2). Then the 3rd version of CAF was published in 2012 based on the feedbacks from EIPA.

The expansion and development of CAF in public organizations of EU countries was based on EU Lisbon 2000 Strategy. These strategies were based on a competitive, dynamic, economic model based on knowledge; a reform that concerns all the political and economic fields; competent, professional and competitive public administration; efficient management and political development mechanisms; accountability based on success; new public management approach; medium-term viewpoint, result-oriented process and quality life; participatory, transparent, delegation, horizontal organizations; transmission of the quality experience in private sector to community; process and product quality, citizen satisfaction. EU is willing to adopt these strategies in public organizations (Koyuncu, 2007, p. 2).

CAF is a TQM tool. EFQM is based on leadership, customer focus, process, employees, continuous improvement and innovations, corporate social responsibility, etc. The model

aims to improve the corporate success of public organizations on the basis of these concepts (EIPA, 2012, p. 3).

CAF can be utilised in the comparison among public administrations and it serves to a management model which has ease of implementation in all countries. CAF is seen as a flexible, transparent and ever-growing public quality management tool that is organized according to the strategic plans and objectives, that gives importance to processes and workers in processes, that constitutes performance criteria in organizational structure oriented on citizen/customer and monitor its realisation (Çoban & Deyneli, 2005, p. 14).

According to Goldschmidt, Dorulova, Niculescu, and Stemberger (2005), CAF application, which enables getting information about areas where public organizations are weak and strong and their organizational structures, shows similarity with strategic planning approach. As a strategic plan, CAF provides public organizations to make self-assessment through a standard quality management and management system (p. 37).

CAF implementation in EU member states is entirely based on voluntarism. In CAF guide, the efforts of coordinating EU public organizations are not clear (Dimitrova, 2002, p. 182). However, while CAF is not used by central governments in some countries such as England, it is seen that it has been used in local governments and state institutions and organizations as a comparing tool to increase the quality and performance (Akdoğan, 2008, p. 61). This model receives political support from the EU member states. CAF is voluntarily implemented by public organizations in nine member countries where the implementation is not compulsory (Austria, Estonia, Finland, Ireland, Italy, Latvia, Holland, Portugal and UK). It is recommended to be used by the governments in 15 countries (Belgium, Czech Republic with regional organizations, Germany, Denmark, Greece, Spain, France, Hungary, Lithuania, Luxembourg, Poland, Sweden, Slovenia and Norway) and it is compulsory in 3 countries (Romania, Czech Republic with the central organizations and Slovakia). Especially, the new members who joined the union show an active effort to disseminate the CAF in the EU accession process. For example, it is advised to use the CAF in local organizations of the Czech Republic, but it is compulsory for the central government organizations. In order to increase the performance of public organizations, CAF is encouraged to be used by Hungary and Cyprus Council of Minister (Staes & Thijs, 2005, p. 44).

CAF applications are important in terms of modernising European public administration. Many countries in Europe are using CAF to make improvements in certain sectors. In 18 EU countries, trainings about CAF are organized and the public administrators become specialised in using CAF. In order to do research in the field of education, there are 1318 public organizations in 14 countries that have CAF training. Besides using the original version of the CAF, Belgium, Denmark, Hungary and Germany have developed a special CAF version for different sectors. For example, local governments in Hungary have developed customised versions of CAF for safety, customs enforcement and social security organizations. Moreover, Romania attaches great importance to CAF and in its updated strategy of accelerating the improvement of public administrations of the government (TEPAV, 2005, p. 6).

CAF consists of a scoring system and its basic elements of 5 input and 4 output criteria and 20 input and 9 output sub-criteria. It is required to abide by those basic elements and recommended to be specific to the organization. The explained samples in sub-criteria and the flexibility of the self-assessment should be considered (EIPA, 2012, pp. 9–10). A total of 29 sub-criteria identify the main issues that should be considered in the assessment of the organization. Moreover, CAF shows how the organizations react to the conditions stated in the sub-criteria by providing detailed examples of these basic elements. All criteria of CAF

include the elements that evaluate an organization in all aspects. It is expected that an administration model which is based on these criteria increases organizational performance (Kalfa & Yetim, 2013, p. 164; Balçı, 2007, p. 327). The basic structure of the model was shown in Figure 1.

When the purpose of the CAF and its sub and main criteria are considered, it is clear that this model is an appropriate self-assessment tool for public organizations. It is also true that the expected benefits of the model will be achieved after wider applications. Public organizations can achieve the following benefits of the CAF (Balçı, 2007, p. 326);

- Self-assessment based on common criteria in Europe public organizations,
- Consistency and unity of ideas on subjects to improve the organization,
- Creating a self-assessment framework based on solid evidence on the basis of criteria that are accepted throughout the EU countries.
- Obtain a tool that measures the degree of the progress by making assessments in certain periods,
- Establishing a connection between targets, supportive strategies and processes,
- Monitoring and implementation of development and improvement studies in most needed areas,
- Providing opportunities to share the best practices of other public organizations or different units of the organization,
- Providing a good tool to ensure corporate ownership by involving employees to the process,
- Creating good possibilities to identify the development and success of the organization,
- Creating an effective management tool to adapt different quality management models to routine work of public organizations.

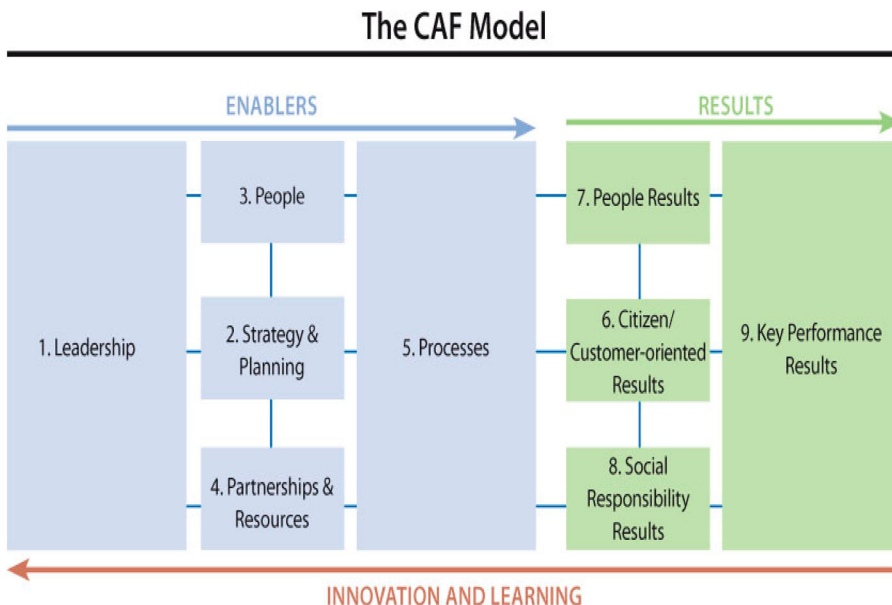


Figure 1. Common assessment framework (CAF, 2015).



The aim of this research is to develop a new organizational quality assessment tool that can be applied to all employees by public administrators who want to improve the quality of the organization and service. For this reason, we have taken advantage of the European Union CAF. It is thought that this research will contribute to the constant improvement of quality in public organizations, active participation of all employees of an organization, consideration of the employees and the target groups, high efficiency in reaching productivity. The research question of the current study is as follows:

Considering the main and sub-criteria of CAF, Is *Common Assessment Framework – organizational Quality Scale (CAF-OQS)* developed to measure organizational quality in public organizations a valid and reliable scale?

### 3. Method

The first step in the study of a new scale is to search the relevant literature. Measurement format should be determined. And in this format, the item pool must be created. The next step is to consult to the expert comment and pilot application for the item pool. Thus, the face and content validity of the scale was provided. This draft of scale is applied to the sample group. After that, the validity and reliability analysis of the scale is tested. Then the scale takes the final shape (DeVellis, 2017, p. 105). There are different ways of developing scales. The analyses in this study were considered to be statistically sufficient to develop the scale. The data were obtained through CAF – organizational Quality Scale. In order to explain the validity of the scale, expert opinions and pilot studies were benefited and then Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were conducted to construct validity. To determine the reliability of the scale, the Cronbach alpha coefficient was calculated. For each item, item-total scale correlation was calculated.

#### 3.1. Population and sample (research group)

The first aim of this paper is to develop a new simple Likert type organizational quality assessment tool taking advantage of the European Union CAF to measure organizational quality. The next objective of this study is to put forward the effect of European Union CAF on public organizations according to the perception of the employee about organizational quality. Therefore, as a working group, a public organization to which CAF is not applied and applied has been determined. The Ministry of Labor and Social Security (MLSS) to which CAF is applied in Turkey, is the only ministry, so it was preferred as the first public organization. Second, the Ministry of Youth and Sports (MYS) was preferred as the control group, for this study was done in the field of sports management department.

In additional to, considering that sport services are important as education and health services in developed countries, increasing the organizational and service quality in MYS organizations has significant importance. Because of its major position, the research group was preferred from MYS in which the CAF was not applied.

#### 3.2. Data collection process

The scale developed in this study is called the CAF-OQS. In this study, the European Union CAF was transformed to five-point Likert type scale to measure organizational quality scientifically according to employee perceptions. While the scale was being developed, the enablers criteria of CAF 2006 version 5 main criteria and in total 20 sub-criteria of

these criteria were adopted as items of the scale. The first main criterion is Leadership and the related substances are the first four items. The second main criterion is Strategy and Planning and the related substances are items 5, 6, 7 and 8. The third main criterion is People (Employees) and related substances are items 9, 10 and 11th. The fourth main criterion is Partnerships and Resources and related substances are 12, 13, 14, 15, 16 and 17th. The fifth main criterion is Process and related substances are 18, 19, and the 20th. Thus, the structure of the theoretical model consists of 20 items and 5 factors. Firstly, these sub-criteria (items) were provided as an original English text of CAF from EIPA website, which was determined as a source institution by EU.

Later, three academicians translated these 20 sub-criteria from English to Turkish. After these translations, both these translations and its Turkish version which was obtained from EIPA were compared and then the scale draft was created. The scale draft was provided to 11 experts who are authorities on the subject. The experts were one professor and one associate professor who work in the management department, one assistant professor who works in the assessment and evaluation department, one deputy secretary who has a doctorate degree and works as a CAF implementation coordinator in MLSS, two deputy director generals from public organizations, two head of departments and five departmental managers. The items were examined in terms of their understandability, suitability for the measuring purposes, the power of representation of the desired subject and their efficiency. Then, the draft scale was distributed to the working staff at Ankara Youth Services and Sports Provincial Directorate which is a public organization and 71 feedbacks were taken. The feedbacks from experts were discussed by three scholars who translated the scale and revised it as 20 items. Thus, the face and content validity of the scale was provided.

For the construct validity of the scale, EFA and CFA was performed and to determine the reliability of the scale the Cronbach alpha coefficient was calculated. For each item, item-total scale correlation was calculated. The scale is Likert type and graded in perceived organizational quality size as strongly disagree (1), partially disagree (2), unstable (3), partially agree (4) and strongly agree (5). In addition, the personal information of the participants (organizations, Gender, Age, Marital Status, Education, Graduation Department, Department in the organization, Services in the organization Time, Total Service Time, Service Training, Quality Training and Profession selection) were added. The scales were distributed face to face and collected by the researchers by going to the organizations. Descriptions of the scale were conducted by the researchers to the staff who were interested in the research. The employees were required not to write their names and requested to rate the actions mentioned in the scale from 1 (at least) to 5 (most) on a voluntary basis. The scale can be completed in 5–15 minutes. CAF-OQS proposal scale was distributed to all staff of two public organizations (892 staff from MYS and 1072 from MLSS). Four hundred and twelve employees from MLSS completed the scale, but as 33 of the participants did not fill the scale completely, they were excluded from the research. Two hundred and seventy-four employees from MYS participated in the scale, but as 27 of the employees did not complete the scale, they were excluded from the research. As a result, the answers of the 626 employees were saved to SPSS 23.0 and LISREL 8.80 programmes. And then the following analyses were performed.

While the scale was developed, a total of 144 sample actions of CAF sub-criteria were wanted to be used, but as it was thought to be difficult regarding the answering motivation and implementation time, it was limited to the views of the staff related to CAF Enablers Sub-Criteria. And, at the beginning of this work, the CAF version 2013 has not yet been announced.

**4. Results**

Distribution in terms of changes in Gender, Education, In-Service Training and Quality Trainings of the participants in the research were given in the table below (Table 1).

When the Table 1 is analysed, it is seen that according to the distribution of the gender variable, 45% of the participants are women and 55% are men and according to the educational status, the variables are close to each other. The university graduate workers are more in General Directorate of Sport (GDS) with a 10% difference. Furthermore, according to the variables in in-service training they seem to be close to each other by about 75%.

The notable variable in Table 1 is in-service quality training variable. While the rate of the workers at Ministry of Labour and Social Security (MLSS) who get in-service quality training is 60%, the workers in GDS is 30%. The mean and standard deviation of the workers' age and service time in organization was given in the table below (Table 2).

When Table 2 is examined, it is seen that the average age of the workers is 42 in MLSS and 41 in GDS. The workers' service time in their organizations is 134 months in MLSS and 42 months in GDS.

**4.1. Construct validity of CAF-OQS**

**4.1.1. EFA results**

Firstly, regarding the construct validity of the scale, the EFA was performed. The answers of 626 participants were saved in SPSS 23.0 and then the 20 items were subjected to the

Table 1. Distribution regarding the employees characteristics of the participants according to the variables.

Variables		MLSS (N)	%	MYS (N)	%
Gender	Woman	175	46	105	43
	Man	204	54	142	57
Educational status	Primary-school	5	1.3	2	0.8
	High-school	82	21.6	39	15.8
	Associate	68	17.9	34	13.8
	Degree	189	49.9	148	59.9
	Bachelor's Degree				
In service training	Post graduate	35	9.3	24	9.7
	Yes	296	78.1	182	73.7
In service quality training	No	83	21.9	65	26.3
	Yes	219	57.8	73	29.6
	No	160	42.2	174	70.4

Table 2. Mean and standard deviation of the employees' age and service time in organization.

	MLSS (N = 379)		MYS (N = 247)	
	$\bar{X}$	$S_x$	$\bar{X}$	$S_x$
Age	42 (41.88)	9.42	41 (40.53)	9.86
Service time in organization (Month)	134.45	112.26	42 (41.78)	9.62

‘Principal Components Factor Analysis’. Analysis of the results led to the following findings.

The Kaiser Meyer Olkin and Bartlett test results which show the suitability of factor analysis reveal that the sample amount is enough. When the Kaiser-Meyer-Olkin values are examined, 0.975 result of the data value shows that this is a ‘very good’ level for the factor analysis. Furthermore, Bartlett’s Sphericity test results ( $p < 0.05$ ) reveal that there is a significant relationship between the substances in the scale. These results indicate that the data are suitable for factor analysis (Kaiser, 1991). The eigenvalue graph that shows the structure of the scale was shown below in Figure 2.

When the eigenvalue graph is analysed, the eigenvalue is above one in one factor. In general, the eigenvalue of one or more factors which are considered as important factors, it is observed that the scale has an integrated structure in one factor because of having a sharp decline after the 1st factor, remaining below 1, and the eigenvalue of the items’ being close to each other.

As the CAF-OQS are formed on the basis of CAF enablers scales (Leadership, Strategy and Planning, People (employee), Partnerships and Resources, Processes) that is a TQM tool and as they are formed of the principles of TQM of these measures (EIPA, 2012, 2–3), the sole factor is called as ‘Organizational Quality’. The ‘eigenvalue’ of the factor and the explained variance rate that shows how good it measures the factor was given in Table 3.

When Table 3 is examined, the eigenvalue in sole factor is observed as 13.90 and the explained variance as 69.53%. According to the Kaiser–Guttman principle (Kaiser, 1991),

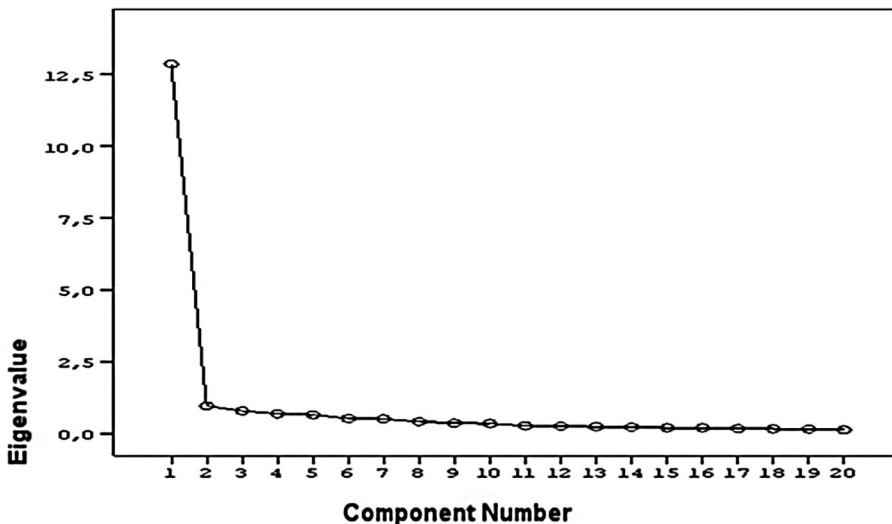


Figure 2. EFA Eigenvalue graph.

Table 3. Values of explained variance of factor and eigenvalue.

Factor	Eigenvalue	Explained variance (%)
1	13.90	69.53

generally the eigenvalue of one or more factors are considered as important factors and as the eigenvalue of CAF-OQS is almost 14, this shows the importance of the factor. By a single factor the explained variance is observed to have a very high value with 69.53%. These results also indicate that the scale of the organizational quality variables reveals a high percentage of approximately 70%.

In Table 4, load factor values which explains the relationship between the items and the factor and which is expected to be higher than 0.60 and which is sometimes being studied in terms of statistical significance as a correlation value was presented. Second, item-total correlations which are a method of analysis in the correlation coefficient between item-total or item-size were given from top to bottom (Table 4).

When the load factor values are analysed, it is observed that the values ranged from 0.761 to 0.889. According to Table 4, the values are approximately between 0.80 and 0.90 and they are in a high level. Thus, it can be said that items are in a high relationship with organizational factors. It is observed that the item-total correlation is changed between 0.738 and 0.874. Item-total correlation is expected to be negative and higher than 0.20.

As the item-total correlation is approximately between 0.70 and 0.90, the values are quite high and the internal consistency of the scale is also high. The obtained findings show that CAF-OQS measured the perception of organizational quality by a high validity.

EFA results were not found sufficient to explain the theoretical model five factors. Furthermore, when the literature is examined, it is not only right to decide on the number of factors according to the Kaiser–Guttman principle. Because this situation can lead to a different number of factors contrary to reality. It is emphasised that it is an important criterion that the factors can be understood theoretically in order to be able to decide the factor number (Zwick & Velicer, 1986; Çokluk, Şekercioğlu, & Büyüköztürk, 2010). As the Theoretical Background shows, the structure of CAF model has a strong theoretical basis. However, since some items contribute to each factor as multiple items, the EFA results are insufficient to explain the theoretical model. Therefore, CFA applied to predict the structure of CAF-OQS model. Because statistical test process of CFA is much more strict than EFA (Kline, 2016, pp. 197–198). CFA offers better structure validity to explain the theoretical structure (Pinsof, Zinbarg, & Knobloch-Fedders, 2008, p. 285). The following CFA analyses clarify the structure of the CAF-OQS model.

#### 4.1.2. CFA results

CFA were used to test the construct validity of the CAF-OQS. CFA output contains many fit indices. Each Structural Equation Modelling (SEM) programme (Amos, Lisrel, Eqs, etc.) contains a slightly different set, but they all include the key values such as (chi-square), CFI (Comparative Incremental Fit), RMSEA (Root Mean Square Error of Approximation) and SRMR (Standardised Root Mean Square Residual). In the study, when the value is divided by the degrees of freedom (df), if the resulting number is smaller than 2.0 it is considered very good, and between 2.0 and 5.0 is acceptable (Hair, Black, Babin, & Anderson, 2010). The fit indices for the sample are  $\chi^2_{138} = 517.93$ ;  $p = .00$ ;  $\chi^2/df = 3.87$ ; CFI = .99, GFI = .90, NNFI = .99, SRMR = .02 and RMSEA = .07. This suggests that the factor structure of the CAF-OQS is acceptable. These coefficients declare that the five-dimensional model, anticipated within the scope of the research is most capable of explaining the relations observed among the items.

In Structural Equation Modelling studies, the factorial structure of a feature is examined by comparing the model proposed in relation to the features assumed to be multi-dimensional and an 'alternative' model, which anticipates that these features may be explained

Table 4. Load factor values and item-total correlations.

Items (Managers in my organization)			Load factor value	Item-total correlations
CAF- OQS	6	Develops strategy and planning, revises and updates by considering the needs of the stakeholders (staff, citizens, civil society organizations, related institutions and organizations) and available resources.	0.889	0.874
CAF- OQS	5	Systematically examines the strengths and weakness of the organizations by collecting information related to the stakeholders' (staff, citizens, civil society organizations, related institutions and organizations) actual and future needs.	0.883	0.869
CAF- OQS	8	Implements the modernisation and innovation plans and reconsiders.	0.881	0.866
CAF- OQS	18	Continuously identifies designs, manages and improves the process (distribution of responsibilities, performance of the works, presentation and follow up; inclusion of the workers and external stakeholders, resource allocation, legal requirements-regulations and changes).	0.873	0.856
CAF- OQS	11	Integrates the employees to the whole work by developing and authorising an open communication.	0.862	0.845
CAF- OQS	12	Develops and implements fundamental relations (joint projects, assistance, transfer of knowledge and experience) with the stakeholders (citizens, nongovernmental organizations, relevant institutions and organizations)	0.861	0.843
CAF- OQS	15	Manages information and knowledge. (Acquisition, classification, usage, collection and storage, etc.)	0.859	0.840
CAF- OQS	10	Determines, develops and uses the employees' qualifications, individual and organization objectives.	0.850	0.838
CAF- OQS	16	Manages and regularly develops the use of the technology in the organization. (For business, communication, information gathering, learning, development, etc.)	0.855	0.835
CAF- OQS	13	Develops and implements partnerships with citizens. (effective public relation practices)	0.838	0.818
CAF- OQS	9	Plans, manage and develop human resources transparently in accordance with strategy and planning. (e.g. Hiring, assignment, promotion, salary, recognition, career, etc.)	0.838	0.819
CAF- OQS	19	Develops and offers the services as citizen oriented.	0.831	0.810
CAF- OQS	2	Develops and implements a system (established) for the organizations' management, success and transformation.	0.826	0.808
CAF- OQS	7	Implements the strategy and planning in all units of the organization.	0.817	0.795
CAF- OQS	14	Manages the financial structure (e.g. harmonisation with the strategic goals, ensure budget transparency, manage efficiently, use innovative systems)	0.809	0.786

*(Continued)*

Table 4. Continued.

Items (Managers in my organization)			Load factor value	Item-total correlations
CAF- OQS	4	Establishes and manages effective relationships (identifying the policies with stakeholders, creating cooperative and working groups, awareness and reputation) with politicians and stakeholders (personnel, citizens, nongovernmental organizations, relevant institutions and organizations) to ensure a collective responsibility.	0.799	0.777
CAF- OQS	1	Directs the organization by developing the mission (Reason for being) and vision (how it plans to be in the future) of the organizations (trust, respect, corporate culture, etc.)	0.777	0.754
CAF- OQS	20	Renews the process (e.g. the identification of the factors that hampers innovations, analysis and elimination) by including citizens.	0.776	0.751
CAF- OQS	17	Manages the facilities (physical spaces, buildings, offices, equipment, transportation, etc.).	0.767	0.742
CAF- OQS	3	Motivates, supports the employees in the organization and acts as a role model.	0.761	0.738

via single factor (Caliskan & Baydar, 2016, p. 18). The general combination of the coefficient pertaining to single-dimensional model is  $\chi^2_{170} = 2083.53$ ;  $p = 0.00$ ;  $\chi^2/df = 12.25'$ ; CFI = .97 GFI = .86, NNFI = .97, SRMR = .03 and RMSEA = .15. When the combination levels of the single-factor model are compared with the theoretical model, the difference between them was found to be in favour of the model ( $\Delta\chi^2_{138} = 1565.6$ ;  $p < .05$ ). According to these results, the following theoretical model might clarify the differences better in the dataset (variance – covariance), when compared with the single-factor model and the parameters relating to the theoretical model given in Figure 3.

#### 4.2. Reliability of CAF-OQS

In order to determine the reliability of the scale, the Cronbach alpha value was calculated and the value that belongs to 20 items was determined as 0.98. When the scale reliability is 1 and the adequate value is considered as 0.70, it is seen that CAF-OQS has a very high reliability.

### 5. Discussion and conclusion

In this paper, a new simple quality management and self-assessment tool based on perceptions of CAF of all of the organization's employees has been developed. There is no Likert type scale or survey about CAF applications. This scale is the first scale. Also, there are no tools to reveal the opinions of all employees about the CAF practices in the organization. Because the CAF Scoring and Assessment Panels are based solely on the opinions of some employees, whereas this scale can be used to statistically measure all employees' opinions about CAF practices and organizational quality management. In this way, the scale contributes to the improvement of quality management, the quality of service and CAF practices in public organizations in an easy way. In addition, this scale should be used to identify and

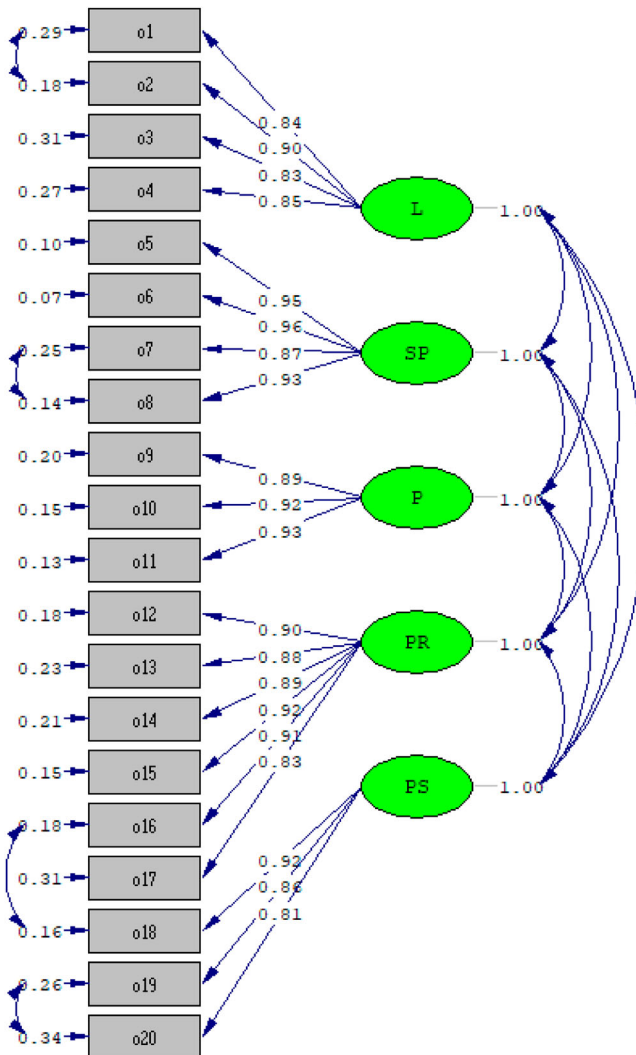


Figure 3: CFA Results. L = leadership, SP = strategy and planning, P = people (Employees), PR = partnerships and resources and PS = process.

benchmark the level of organizational quality according to CAF in public administration organizations.

Although there is no general scale for CAF practices, there are a few scales about organizational quality. The purpose of Fotopoulos & Psomas's study (2010) is to determine the relationships between the TQM factors and organizational performance. This research project was carried out in 370 Greek companies, using the questionnaire method. Exploratory and CFA were applied to assess the measurement model reliability and validity. The relationships between the latent constructs were examined through SEM. But, the data being dependent on only the perceptions of the quality managers and the fact that the sample companies came from different sectors constitute (p. 539). While Akdere (2009) developing the organizational quality survey for the variables in his study, he used only the Human Resource Practice Index (p. 1952). Sousa et al.'s survey (2005) was to



determine the level of knowledge of performance measures and their degree of implementation in small and medium enterprises (SMEs) in Portugal (p. 277). Claver, Tari, and Molina (2003) reviewed the literature in order to identify the critical factors and results of quality management, using a factor analysis and, starting from this analysis, they also created a scale that can be empirically tested from the answers provided by those responsible for quality in 106 certified firms (p. 91). These and similar studies do not include the organizations in the public administration and opinions of all the employees in the organization. There is also no similar study about CAF in the literature.

Bouckaert (2002) states that CAF, as a quality application model, contributes to public organizations that would like to develop their management skills. He also claims that CAF works as a 'bridge' between methodologies and various models of quality management in public organizations and also allows comparison studies between public organizations (p. 63). Çoban and Deyneli (2005) assert that if CAF model is assessed in public administration system and a performance based budget is established firmly with the mentioned model, this will improve the quality in public services and citizen satisfaction (p. 22). Although public administration has its own problems and challenges in practising TQM in public sector, according to Akdoğan (2008) a simple application of TQM and CAF assessment tool which is thought to have contribution on European Administrative Field has not been used in some countries such as the UK by public administrations. However, both in England and in many other countries it has been used to improve quality and performance by local organizations and public organizations (p. 61).

Studies about CAF have shown that CAF improves organizational quality and performance on public organizations and has a feature that improves the process. Therefore, other than the simple TQM application models, this inexpensive and effective model should be applied as a quality improvement and self-assessment model parallel to the reforms in public administration.

Kaiser Meyer Olkin and Bartlett test results which show the suitability of the data for factor analysis executes that the sample is sufficient. By considering the results of EFA and CFA it can be said that the scale has five-dimensional structure. And, the obtained findings show that CAF-OQS measured the perception of organizational quality by a high validity and reliability.

All in all, CAF is the TQM practice model. CAF-OQS is a new self-administered questionnaire. CAF-OQS is a highly valid and reliable self-assessment tool that can be applied to all employees by public administrators who want to improve the quality of the organization and service. The paper describes a new, simple reliable valid quality scale and a way with CAF for institution performance improvement. In addition, this paper adds wealth to CAF awareness and researches.

## 6. Limitations and suggestions for future research

The items of the scale are limited to the enablers sub-criteria of the 2006 version of CAF. The data is limited to the employee perceptions obtained from the two public institutions (the ministry of Labor Social Security and the MYS). In addition, the scope of this study was limited to the validity and reliability of the scale. It is a study conducted on a specific country and the participated two organizations came from two ministries. Furthermore, the scale has not been tested for its validity in separate organizations, which can be the subject of future research. It is also suggested that item pool for factor development can be increased. Better results can be obtained by considering the 2013 version of the model, re-establishing CAF-OQS and reconstruction of its validity and reliability will provide a

constructive contribution. The scale can be renewed according to the CAF 2013 version. With this scale, the development of quality management in an organization can be followed by pre-test and post-test.

### Disclosure statement

No potential conflict of interest was reported by the author(s).

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