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CLASSIFICATION OF ELECTRONIC TAX SERVICES AND COMPARISON OF E-TAX MANAGEMENT SYSTEMS IN THE EUROPEAN COUNTRIES

ELEKTRONİK VERGİ HİZMETLERİNİN SINIFLANDIRILMASI VE AVRUPA ÜLKELERİNDE E-VERGİ YÖNETİM SİSTEMLERİNİN KARŞILAŞTIRILMASI

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ABSTRACT-

While the trends in the electronically supply of public services quickly spread; all over the world, electronic tax services (ETS) and electronic tax management systems (ETMS) reveals. The aim of the article are to classify the ETS, to determine the stages of the developing ETMS, and to make a comparison between European Countries, by detecting, with a new e-tax index, the current development levels of ETMS in European countries. Thanks to the classification of ETS, for the first time to our knowledge, a general framework has obtained that is useful in answering such questions that to what extent tax services electronically supply in the European Countries, and to which progress this matter should be monitored further.

ÖZET

Tüm dünyada kamu hizmetlerinin elektronik olarak sunulması eğilimleri yaygınlaşırken, elektronik vergi hizmetleri ile bir veya birkaç alt sisteme dayalı olarak işleyen vergi yönetim sistemleri (EVYS) ortaya çıkmaktadır. Makalenin amacı, elektronik vergi hizmetlerini sınıflandırmak, bu yolla hâlâ gelişen EVYS'lerin katetmeleri gereken aşamaları belirlemek, Avrupa ülkelerinde EVYS'lerin gelişim düzeylerini, yeni bir e-vergi indeksi ile tespit edip, bu açıdan ülkelerarası bir karşılaştırma yapmaktır. E-vergi hizmetlerinin tespit edilebildiği kadarıyla ilk defa sınıflandırılmasıyla, Avrupa ülkelerinde e-vergi hizmetlerinin ne ölçüde elektronik olarak sunulduğu ve bu konuda daha başka hangi aşamaların katedilmesi gerektiği sorularının cevaplanmasını sağlayabilecek, ortak genel bir çerçeve elde edilmiştir.

Classification of Electronic Tax Service, E-Tax Index, Online Tax Management System, E-Tax Service, Online Tax Service JEL Classification: H11, H20, H27

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Elektronik Vergi Hizmetlerinin Sınıflandırılması, E-Vergi İndeksi, Online Vergi Yönetim Sistemleri, E-Vergi Hizmetleri, Online Vergi Hizmetleri

1. INTRODUCTION

Tendencies for providing public services electronically are rapidly spreading in the European Union countries as in the entire world. It can be said that 20 main public services are electronically provided in the European Union (European Union, 2002: 1). According to the EU classification, six of these services are tax-related. Today, the services related to income tax, corporate tax, value-added tax (VAT), custom declarations, social security benefits, social contribution for employees are electronically provided.

Governments establish special electronic and technological infrastructures and systems in order to provide e-tax services. These systems may be called *electronic tax management systems* (ETMS) though their names vary in different countries. For instance, while there are two subsystems under the names of ETFS (e-tax filing system) and ETPS (e-tax payment system) in the USA concerning ETMS; just one system operates in Taiwan under the name of OTFPS (online tax filing and payment system) in this regard.

Although ETMS differs in terms of which tax service is provided, how this service is provided electronically, and the progress made by countries in this field, they are similar to one another, to a certain extent. It is possible to say that ETMS based on two sub-systems, *e-tax filing* and *e-tax payment*, are established in almost every country, and these infrastructures provide citizens with an opportunity to make their tax-related transactions electronically by means of their computers.

In fact, there are other stages requiring progress apart from abovementioned sub-systems for ETMS, which are still in the development process now. This paper aims at contributing to this issue. The purpose of this paper is to determine stages in which ETMS must make a progress and to make a comparison between countries through determining development levels of ETMS in the European countries by using e-government factsheets that are periodically published by the European Commission for each country.

As far as it is known, this is the first article in scientific literature that classifies electronic tax services by means of a new methodology based on classification of e-government applications. By this means, a common general framework was obtained to answer the following questions: "To what degree are e-tax services provided electronically in the European countries?", "Which other stages require progress in this field?"

By using e-government factsheets published by the European Commission in 2011, current stages of basic e-tax services in the European countries were defined and indicated on the basis of each country according to the common index created based on e-tax service's classification through descriptive analysis and content analysis methods. By this means, current

development levels of ETMS in the European Union counties were determined; a comparison was made between counties, and the stages in which each country had to make a progress were detected.

2. METHOD AND SCOPE

In this article aiming at determining the development levels of ETMS in different countries, basic e-tax services in the European Union countries were defined and indicated based on each country according to a particular common index through descriptive analysis and content analysis methods by using e-government factsheets published by the European Commission in 2011.

For that, in the first place, it is needed to be classified according to development levels of e-tax services. However, upon reviewing the scientific literature, it is seen that all e-government services are classified in general according to development levels, rather than classification of development levels of e-tax services by themselves. There are only a couple of scientific studies making this kind of a classification.

Being an important study examining e-government practices in the world by creating an e-government index, UN/ASPA, (2002) describes stages of e-government through a five-unit classification as follows:

- (1) Emerging Stage: An official government on-line presence is established.
- (2) Enhanced Stage: Government sites increase and become more dynamic.
- (3) Interactive E-Government Stage: Users can download forms, e-mail to officials, and interact with them through the web.
- (4) Transactional E-Government Stage: Users can actually pay for services and other on-line transactions.
- (5) Seamless E-Government Stage: E-government services are offered to users in a permanent, consistent and harmonious manner. E-services have been fully integrated across administrative boundaries. These services have been shared without any service conflicts (UN/ASPA, 2002: 10).

Moon, (2002) also provides a five-stage classification:

- (1) Simple Information Dissemination (One Way Communication) Stage
- (2) Two Way Communication (Request and Response) Stage
- (3) Service and Financial Transactions Stage
- (4) Vertical and Horizontal Integration Stage

(5) Political Participation Stage (Moon, 2002: 426).

Moon, (2002) tabulated this classification through adaptation from Hiller & Belanger, (2001) and classified internal and external e-services of the government (Hiller & Belanger, 2001: 177).

By utilizing the methodology in UN/ASPA (2002) and Moon (2002), in this paper, it is preferred to classify e-tax services according to development levels under a five-unit index (UN/ASPA, 2002: 10 & Moon, 2002: 426).

Considering the basic logic underlying these articles, a general methodology was formed in the Table 1 below that could apply to both e-tax services and electronic tax management systems.

Table 1: Classification of Electronic Tax Services

Stages	Service Classification	Service Characteristics					
1st Stage	E-Tax Information Services	 All kinds of information, laws, regulations and legislations related to all sorts of taxes have been transferred to the internet environment through classification; all kinds of questions that users may need, dates of tax payments being in the first place, have been answered on-line on the websites belonging to the government. All kinds of tax-related developments, periodical official publications, circulars, reports, tax incentive information, etc. have been opened to online easy access of users within the framework of transparency and accountability rules. 					
2nd Stage	E-Tax Interactive Communication Services E-Filing Infrastructure (EFS – E-Tax Filing System)	 (3) Basic information needed by tax-related public institutions (e.g. tax returns) has been converted into electronic forms. (4) Users can download these forms through the web, fill up these forms on their computers, and send them to the tax administration through the web. (5) Users can demand on-line information and explanation from tax administration concerning any tax-related issue. (6) Information exchange transactions have been conveyed by government to the internet environment to a great extent. To this end, it has been started to develop web-based applications and programs. (7) It has been started to conduct tax surveys in the internet environment. 					

3rd Stage	Transactional E- Tax Services E-Payment Infrastructure (EPS - E- Payment System)	 (1) Taxes have started to be paid by users on-line. (2) Tax refunds have started to be transferred online to the bank accounts of taxpayers. (3) Government has started to make all kinds of subsidy, scholarship and social security payments on-line. (4) Agricultural supports implemented by government and payments related to development programs are made on-line. (5) Users can check the on-line payments made by government into their bank accounts. (6) "Automatic payment orders" and "electronic fund transfers" in tax-related issues become a commonplace.
4th Stage	Integrated E-Tax Services Integrated (ETMS) E-Tax Management System	 (1) All kinds of tax-related services have been shared among tax management units, and service conflicts have been prevented. Services and administrations responsible for each one of these services have been clearly determined. (2) All kinds of tax-related services have been transferred into the internet environment; tax-related rights have come to be obtainable and traceable on-line. (3) Users can get both national and local tax-services online. (4) It is possible to access tax-related information, laws, regulations, other legislations, answers of questions needed by users, new tax-related developments and changes, all periodical official tax-related publications, circulars and reports via a user-friendly web portal. (5) These web portals belonging to each country contain all sorts of compiled and processed tax-related information, tax incentive practices; in particular, that serves the business world. (6) E-tax services are provided to everyone on-line 24/7.
5th Stage	Participatory E- Tax Services Participatory (ETMS) E-Tax Management System	 In the fifth stage, tax services have been arranged in such a way to allow political participation of users besides offering integrated e-tax service's characteristics. E-tax web portal of the government contains feedback surveys and forms pertaining to e-tax services. User can actively submit their tax-related recommendations, comments and complaints on-line. Systems have been established to allow electronic processing and evaluation of information obtained by this way.

Note: Inspired by UN/ASPA, (2002) and Moon, (2002).

E-tax related sections of e-government factsheets of the European Commission were subjected to content analysis by using Table 1, and it was attempted to determine the current stages of e-tax services in the European countries according to e-tax service's framework provided in Table 1.

Accordingly, the table in Annex 1 was prepared. In this article, e-tax services of the European countries were evaluated through interpreting charts formed according to results in Annex 1.

3. RELATED SCIENTIFIC STUDIES

A research or article that classifies electronic tax services, develops an e-tax service index in this matter, and makes a comparison of these services between different countries within a consistent methodology has been found yet. The studies closest to this topic tried to classify development stages of e-government, but they were one-time studies, which mostly made this classification over the case of a single country.

Some articles attempting to classify development stages of e-government are Layne & Lee, (2001), Affisco & Soliman, (2006), Al-Adawi, Yousafzai & Pallister, (2005) and UN, (2010). Classification patterns suggested by these articles are given in Table 2.

Table 2: A Comparison Concerning Classification of Development Stages of E-Government

Layne & Lee, (2001)	United Nations, (2010)	Affisco & Soliman, (2006) and Al-Adavi, Yousafzai & Pallister (2005)			
Cataloging Stage	Emerging Stage	Publishing (Web-Presence) Stage			
Transaction Stage	Enhanced Stage	Interacting Stage			
Vertical Integration Stage	Transactional Stage	Transacting Stage			
Horizontal Integration Stage	Connected Stage	Integration and Transforming Stage			

(Rorissa, Demissie & Pardo, 2011: 355).

Classifications made in all three aforementioned articles are applicable to all e-government services, but they contain no or just a limited specific information about tax services. For example, Layne & Lee, (2001) mentions about the taxation just in a single section. Presenting a comprehensive bibliography of e-government studies and forming a very good conceptual framework on internalization of e-government, Al-Adavi, Yousafzai & Pallister, (2005) makes mention of tax only when discussing benefits of e-government in the introduction. The situation is same in other studies, as well.

Apart from these articles, Berntzen & Olsen, (2009) repeats classification of Layne & Lee, (2001) and gives information about articles that explain techniques applied for comparing e-government performances. Being the first one among these articles, Janssen, Rotthier & Snijkers, (2004) collects factors affecting performance of e-government under five titles. Ojo, Janowski & Estevez, (2005) focused on the determining of the capacity of government in respect of implementation of e-government readiness, and accordingly recommended revision of indicators affecting e-government

performance. Germanakos, Christodoulou & Samaras, (2006) suggests a methodology that can enable fulfillment of e-government services for cities. All of these articles also touch on e-tax services in the general sense and do not contain adequate information on development of e-tax services and comparison of performance of these services between countries.

Berntzen & Olsen, (2009), makes mention of three large-scale studies that focus on the international comparison of e-government services. Unlike others, these studies are periodically renewed. Berntzen & Olsen, (2009) gives a reference to UN/ASPA, (2002), which we ground on in our article, and explains this study in detail. Berntzen & Olsen, (2009) highlights that this methodology was used in the subsequent studies carried out by the United Nations, as well. Other two studies are periodical Global E-Government research conducted by Prof. West with the support of Brown University, and e-government studies carried out by a private research company named "Accenture" (West, 2007 & Accenture, 2004). Both two studies are inadequate in terms of providing methodological framework required for making a comparison of performance of e-tax services between countries. This is because these studies generally focus on e-government issue as other studies and articles.

4. COMPARISON OF ELECTRONIC TAX MANAGEMENT SYSTEMS IN THE EUROPEAN COUNTRIES

Governments establish special electronic and technological infrastructures and systems in order to provide e-tax services. These systems are called *electronic tax management systems* (ETMS)

According to e-government factsheets published by the European Commission, e-tax services are provided in nine main fields in the European Union countries: Personal Income Tax, Corporate Tax, Value-Added Tax (VAT), Customs Declarations, Unemployment Benefits, Child Allowances, Medical costs (reimbursement or direct settlement), Student Grants, and Social Contributions for Employees. These services are generally provided within e-filing and e-payment infrastructures.

Current stages and future development levels of nine e-tax services in the European countries are explained below along with charts formed according to results in Annex-1.

4.1. E-Tax Services in Personal Income Tax

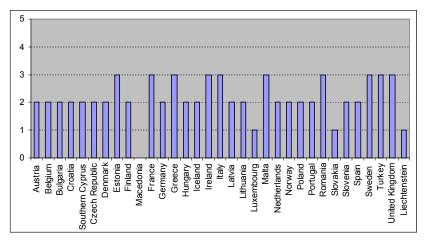
Today, income tax returns are electronically filled up and declared in most of the European countries. Information and forms (returns) required for this transaction have been transferred into computer environment. Users obtain these forms via the computer environment. Thanks to e-filing infrastructure established for this purpose, users are informed and receive help at every stage. It is possible to calculate the amount of income tax to be paid and obtain online approval from central revenue administration. Tax

administration approval certificate is electronically sent to the user if s/he has correctly and validly performed e-filing.

For electronic tax services, *e-payment infrastructures* operating in personal income tax have been established in Luxemburg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Turkey and England. Personal income taxes can be paid on-line in these countries.

Macedonia has no system established in this matter. What is mentioned in the preceding paragraphs is not valid in the cases of Luxemburg, Slovakia and Liechtenstein. These countries are still at the information services stage.

Chart 1: E-Tax Services in Personal Income Tax in the European Countries

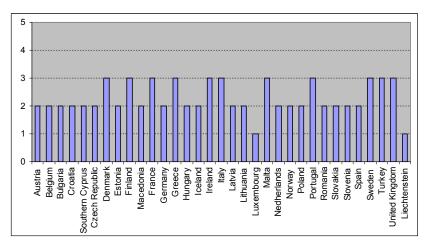


Resource: Annex 1

4.2. E-Tax Services in Corporate Tax

Returns are electronically filled up and declared for also corporate taxes in the European countries. *E-filing infrastructure* was established for also corporate tax. Only Luxemburg and Liechtenstein provide information services in the field of corporate tax and are not involved in e-filing practice. While 10 countries apply e-payment system in income tax, *11 countries* operate the *e-payment system* in corporate tax. Turkey is one of these countries.

Chart 2: E-Tax Services in Corporate Tax in the European Countries

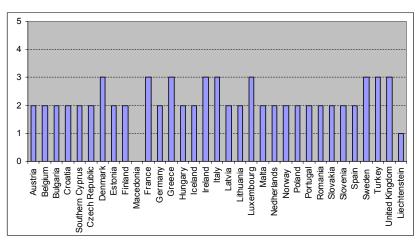


Resource: Annex 1

4.3. E-Tax Services in Value-Added Tax in the European Countries

ETMS in the European countries is generally at the second stage in this matter. *E-Filing Infrastructures* corresponding to Interactive Communication Services have been established and are in the operation. Nine countries have switched to Transactional E-Tax Services; that is, *e-payment* stage. These countries are Denmark, France, Greece, Ireland, Italy, Luxemburg, Sweden, Turkey and England.

Chart 3: E-Tax Services in Value-Added Tax in the European Countries



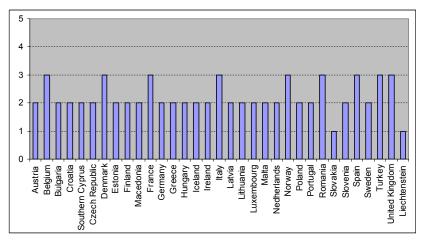
Resource: Annex 1

4.4. E-Tax Services in Customs Duties

In general, interactive communication services are provided in the European countries concerning customs declarations. Customs declarations are electronically filled up and declared. Information and forms (declarations) required for this transaction have been transferred into computer environment. Being valid for imports not included within the scope of the customs union, this system operates within an *e-filing infrastructure* different from the system of the income tax or corporate tax.

Including automation of customs in nine countries, one of which is Turkey, these EFSs have been integrated with also *e-payment* systems. By this means, goods are electronically declared, customs duties are electronically paid, and import transactions are completed within a very short period of time.

Chart 4: E-Tax Services in Customs Duties in the European Countries



Resource: Annex 1

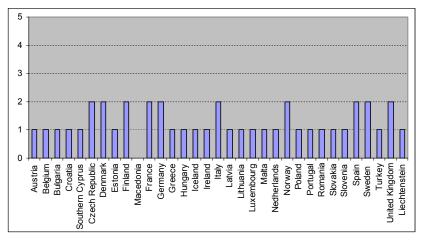
4.5. Electronic Services for Unemployment Benefits

In the European Countries, only some services are electronically provided to unemployment insurance payees. Forms required to be filled up for benefiting from unemployment insurance can be electronically procured and sent to relevant authorities in a total of 10 countries. By this means, online registration for unemployment benefits is realized. It is seen that European countries have not switched to e-payment stage yet though there are different practices concerning payments.

Private insurance institutions are very common in the field of insurance in the European countries. For example, Denmark performs unemployment transactions completely via private insurance institutions. Accordingly, government performance and organization of electronic

services provided in this matter remains secondary. E-payment stage is encountered within systems established by private insurance institutions.

Chart 5: Electronic Services for Unemployment Benefits in the European Countries

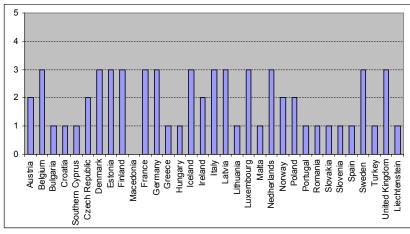


Resource: Annex 1

4.6. Electronic Services in Family and Child Allowances

In the European countries, individuals electronically apply to family and child allowances provided by government. In 13 countries, payments are electronically made over bank accounts.

Chart 6: Electronic Services in Family and Child Allowances in the European Countries



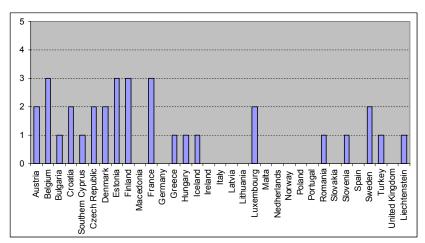
Resource: Annex 1

4.7. Electronic Services for Medical Costs

Governments in the European countries provide the least number of government-organized electronic services in the reimbursement or direct settlement of medical costs. Most of the European countries do not have electronic systems established by governments in this matter. The main reason behind this situation is that individuals in most of the European countries organize their medical costs by private insurance institutions. Health expenses made by government for their citizens are put into electronic environment within hospital automation systems and online systems used by pharmacies.

According to E-Government Factsheets of the European Commission, apart from aforesaid exceptions, Belgium, Estonia, Finland and France are the countries that organize medical costs to the level of Transactional E-Tax Services. In these countries, citizens can get information regarding their health insurances and health expenses on-line, give or update such information via the web. Medical costs under public health insurance are monitored by government on-line, and reimbursements pertaining to health expenses are provided by government on-line.

Chart 7: Electronic Services for Medical Costs in the European Countries



Resource: Annex 1

4.8. Electronic Services in Student Grants

Students grants in Europe are generally managed by universities of students. But for example, in the Czech Republic, scholarships are completely provided through a banking system. Students apply to banks, and scholarships are given by banks.

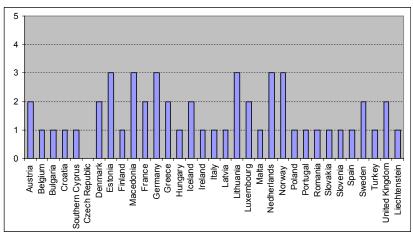
In most of the European countries, some of the scholarship services are generally provided to university students on-line. One encounters such services in getting all sorts of information about scholarships or grants,

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making relevant applications, the announcement of the winners, and transfer of scholarship payments.

According to E-Government Factsheets of the European Commission, scholarship-related services are conducted at the e-payment stage in Estonia, Macedonia, German, Lithuania, Netherlands and Norway.

Chart 8: Electronic Services in Student Grants in the European Countries

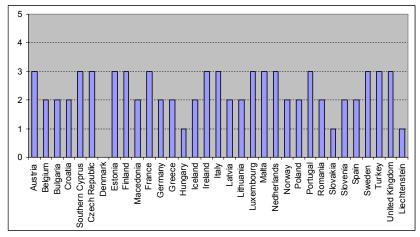


Resource: Annex 1

4.9. Electronic Services Related to Social Contributions for Employees

In many European countries, state contribution payments and insurance premium payments made by employers for employees have been put into electronic environment. Turkey is one of these countries. Hungary, Slovakia and Liechtenstein are the countries that provide an only information service in this matter. Belgium, Iceland, Latvia and Lithuania are among the countries that provide interactive communication services.

Chart 9: Electronic Services Related to Social Contributions for Employees in the European Countries



Resource: Annex 1

5. E-TAX SERVICE INDEX IN THE EUROPEAN COUNTRIES

Values that have been obtained according to electronic tax service's classification and that indicate the current stages of each one of the above-discussed services in the European countries was collected to form an e-tax service index. This index shows us the current stage reached by electronic tax services in the European countries as a whole. By this means, it becomes possible to compare European countries with one another. Chart 10 is a presentation of the aforesaid index in the chart. As all figures, index figures are given in Annex 1, as well.

According to Chart 10, among the European countries, France is the most advanced country in terms of e-tax services. It is followed by Sweden and then Estonia and England. Turkey ranks the 9th among 33 countries.

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Chart 10: E-Tax Service Index in the European Countries

Resource: Annex 1

6. GENERAL RESULT AND EVALUATION

In our world, tendencies for providing public services electronically are rapidly spreading. To this end, special electronic and technological infrastructures and systems are established. Similar developments are seen in tax services, too. Electronic tax management systems (ETMS) operating based on one or a couple of sub-systems come up as a result of extension of electronic tax services.

This article aimed at classifying electronic tax services, detecting the stages that ETMS, which are still in the process of development; determining development levels of ETMS in the European countries by means of a new etax index, and making comparison between countries in this regard. This article, which, as far as it is known, is the first one classifying e-tax services, contributed to creation of a common general framework allowing to answer the questions of "to what degree are e-tax services electronically provided in the European countries?" and "which other stages require progress in this matter?".

Classification of electronic tax services enabled to determine the stages in which ETMS has to make a progress. A new methodology based on classification of e-government practices was used in classification of electronic tax services. Accordingly, these services were classified as e-tax information services, e-tax interactive communication services, transactional e-tax services, integrated e-tax services and participatory e-tax systems. In addition, this article showed main studies classifying development stages of e-government and providing the inspiration for tax service's classification in our article.

Development levels of ETMS in the European countries were determined, and a comparison was made between countries in this regard by using country-specific periodical e-government factsheets of the European Commission in 2011. E-tax service is provided in nine main fields in the European Union countries. These fields are personal income tax, corporate tax, value-added tax (VAT), customs declarations, unemployment benefits, child allowances, medical costs (reimbursement or direct settlement), student grants, and social contributions for employees. Based on e-tax service's classification, current stage and future development trends of these nine e-tax services in the European countries were determined via charts.

Finally, values that have been obtained in accordance with electronic tax service's classification and that indicate current stages of each one of the above-discussed e-services in the European countries were collected to form an "e-tax service index." This index shows us the current stage reached by electronic tax services in the European countries as a whole. Among the European countries, France is the country with best performance in terms of e-tax services. It is followed by Sweden, and then Estonia and England. Turkey ranks the 9th among 33 countries. This is a good rank for Turkey.

The general result of this article is that both Turkey and the European countries have to develop their electronic tax-management systems in the direction of integrated and participatory e-tax services. Classification methodology of this article, which serves as a pre-study in the matter of electronic tax service's classification, will be able to be developed more through the contributions of similar studies.

7. REFERENCES

- 1. ACCENTURE. (2004). E-Government Leadership High Performance Maximum Value. http://www.accenture.com/sitecollectiondocuments/pdf/gove-egov-value.pdf>, (05.08.2011).
- 2. AFFISCO, J. F., & SOLIMAN, K. S. (2006). E-Government: A Strategic Operations Management Framework for Service Delivery. *Business Process Management Journal*, 12(1), 13-21.
- 3. AL-ADAWI, Z., YOUSAFZAI, S., & PALLISTER, J. (2005). Conceptual Model of Citizen Adoption of E-Government. *The Second International Conference on Innovations in Information Technology (IIT'05)*.
- BERNTZEN, L., & OLSEN, M. G. (2009). Benchmarking e-Government A Comparative Review of Three International Benchmarking Studies. *Third International Conference on Digital Society*, 2009. ICDS '09, pp 77-82.
- 5. EUROPEAN UNION, (2011). E-Government Factsheets of the European Commission. http://epractice.eu/en/factsheets, (05.07.2011).

- 6. EUROPEAN UNION, (2002). Common List of Basic Public Services. http://ec.europa.eu/information_society/eeurope/2002/action_plan/pdf/basicpublicservices.pdf>, (05.08.2011).
- GERMANAKOS, P., CHRISTODOULOU, E., & SAMARAS, G. (2006). Towards the Definition of an E-Government Benchmarking Status Methodology. *Proceedings of the 6th European Conference on e-Government*, pp 179–188.
- 8. HILLER, J. S., & BELANGER, F. (2001). Privacy Strategies for Electronic Government. *E-Government*, pp. 162–198.
- 9. JANSSEN, D., ROTTHIER, S., & SNIJKERS, K. (2004). If You Measure it they will Score: An Assessment of International Egovernment Benchmarking. *Information Polity The International Journal of Government Democracy in the Information Age*, 9(3,4), 121-130.
- 10. LAYNE, K., & LEE, J. (2001). Developing Fully Functional E-Government: A Four Stage Model. *Government Information Quarterly*, 18(2), 122-136.
- 11. MOON, M. J. (2002). The Evolution of E-Government among Municipalities: Rhetoric or Reality? *Public administration review*, 62(4), 424–433.
- 12. OJO, A., JANOWSKI, T., & ESTEVEZ, E. (2005). Determining Progress towards E-Government: What are the Core Indicators. Paper presented at the 5th European Conference on E-Government.
- 13. RORISSA, A., DEMISSIE, D., & PARDO, T. (2011). Benchmarking e-Government: A Comparison of Frameworks for Computing E-Government Index and Ranking. *Government Information Quarterly*, 28(3), 354-362.
- 14. UNITED NATIONS, (2010). Government Survey 2010 Leveraging E-Government at a Time of Financial and Economic Crisis. *United Nations, New York—2010*. http://unpan1.un.org/intradoc/groups/public/documents/UN-DPADM/UNPAN038853.pdf>, (05.08.2011).
- 15. WEST, D. M. (2007). *Global E-Government 2007*. Brown University: Center for Public Policy.

Annex 1: Current Stages of Electronic Tax Services in the European Countries and E-Tax Service Index

]	European Countries and E-Tax Service Index									
	Personal Income Tax	Unemployment Benefits	Family and Child Allowances	Medical Costs	5 Student Grants	Social Contributions for Employees	Corporate Taxes	∨ Value-Added Tax	Customs Declarations	Electronic Tax Services Index
Austria	2	1	2	2	2	3	2	2	2	18
Belgium	2	1	3	3	1	2	2	2	3	19
Bulgaria	2	1	1	1	1	2	2	2	2	14
Croatia	2	1	1	2	1	2	2	2	2	15
Southern Cyprus	2	1	1	1	1	3	2	2	2	15
The Czech Republic	2	2	2	2	NR	3	2	2	2	17
Denmark	2	2	3	2	2	NR	3	3	3	20
Estonia	3	1	3	3	3	3	2	2	2	22
Finland	2	2	3	3	1	3	3	2	2	21
Macedonia	0	0	0	0	3	2	2	0	2	9
France	3	2	3	3	2	3	3	3	3	25
German	2	2	3	NR	3	2	2	2	2	18
Greece	3	1	1	1	2	2	3	3	2	18
Hungary	2	1	1	1	1	1	2	2	2	13
Iceland	2	1	3	1	2	2	2	2	2	17
Ireland	3	1	2	NR	1	3	3	3	2	18
Italy	3	2	3	NR	1	3	3	3	3	21
Latvia	2	1	3	NR	1	2	2	2	2	15
Lithuania	2	1	1	NR	3	2	2	2	2	15
Luxemburg	1	1	3	2	2	3	1	3	2	18
Malta	3	1	1	NR	1	3	3	2	2	16
Netherlands	2	1	3	NR	3	3	2	2	2	18
Norway	2	2	2	NR	3	2	2	2	3	18
Poland	2	1	2	NR	1	2	2	2	2	14
Portugal	2	1	1	NR	1	3	3	2	2	15
Romania	3	1	1	1	1	2	2	2	3	16
Slovakia	1	1	1	NR	1	1	2	2	1	10
Slovenia	2	1	1	1	1	2	2	2	2	14
Spain	2	2	1	NR	1	2	2	2	3	15
Sweden	3	2	3	2	2	3	3	3	2	23
Turkey	3	1	1	1	1	3	3	3	3	19
England	3	2	3	NR	2	3	3	3	3	22
Liechtenstein	1	1	1	1	1	1	1	1	1	9

(European Union, 2011). Note: NR means "no rank"