Assessment of the Quality of Electronic Administrative Services in a Greek Higher Education Institution: A Case Study

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Abstract

The basic aim of this paper is to investigate the perceptions, attitudes and experiences of the students of the Department of Primary Education of University of the Aegean about the quality of the provided services to them by the Secretariat of Administrative Electronic Services. The survey was conducted during the second semester of the academic year 2016-2017 with the use of an anonymous written questionnaire which was answered by 128 undergraduate students of the Department of Primary Education of University of the Aegean. The results of the survey show that students primarily consider as the most important service for them the department's website and the service Studentsweb. The least important service for them is the communication platform uniway for mobiles. Also, the degree of satisfaction with electronic administrative services is related to the criteria: availability, ease of use, good organization, responsiveness of services to the needs and expectations of students, and the degree of information. Moreover, problems such as "Mistakes about courses' grades" and "Unsuccessful academic books' registration" appears to have a negative impact on the degree of satisfaction of students with the corresponding services in which the problems occur. The findings of this research can be useful to the administrative staff and faculty of University of the Aegean as they show the dimensions of electronic administrative services that are important and effective and satisfy or create problems for students.

Keywords: electronic administrative services, higher education, service quality

1. Introduction

1.1 Introduction of the Problem

The intense growth of the internet and the creation of many innovative technologies has led many universities within the country and abroad to an ever-increasing tendency to create electronic applications for serving academic members across the internet. These applications offer a range of services to students and, most importantly, are related to the transfer of secretarial support on the internet (Kefalas, 2013).

Electronic services constantly change and evolve, so it is very important to ensure sustainable and competitive services to students. The electronic services system can help save time and money, reduce bureaucracy, offer a quick service to students and staff, better control and manage information (Ndou, 2004). The electronic service is different from the traditional service as it is based on the interactivity of information between customers and service providers (Li & Suomi, 2009). Universities are at the forefront of services provided over the internet. They make regular assessments and evaluations of their electronic services to keep up with the rapid changes in technology related to learning and competition in the field of their provided services (Kim-Soon, Rahman, & Ahmed, 2014).

The secretariat of the Department of Primary Education of University of the Aegean uses the information system Studentsweb of the electronic secretariat for servicing students and facilitating the flow of the work of its human resources. It has the following possibilities: students can see their curriculum, inform about each course separately, register courses, inform about their grades, make applications, and check the situation of applications that have been submitted electronically at the secretariat. In addition, many other tasks are done through electronic services. These electronic services are: the service of issuance of academic identity card, the service Eudoxos of academic books' registration, the service of application for housing benefit, the communication platform uniway for mobiles and the website of the department which provides useful and essential information for students.

The quality of services in higher education and how the services satisfy students has been the subject of many

surveys on the quality of electronic services as a topic of increasing interest in research (Sutarso & Suharmadi, 2011).

1.2 Importance of the Problem

In Greek educational reality, the research on the quality assessment of electronic administrative services provided by Greek universities is non-existent. This research is being conducted to address this gap by contributing to further exploring the quality of electronic administrative services with the aim of improving the quality of tertiary education services. As the information system Studentsweb and other electronic administrative services that have been studied are used by many other higher education institutions in Greece in recent years, the findings of this research can also be used by other educational institutions that use this kind of electronic administrative services to serve their students.

1.3 Literature Review

Surveys related to the quality assessment of electronic administrative services have found that the participation of users in the planning and design of an electronic service system is an important factor for its success (Oulanov & Pajarillo, 2001).

Gemmell and Pagano (2003), explored the perceptions and the attitudes that students had towards an information management system at Salford University in the UK and concluded that there is a need to motivate users to express their demands and general concerns about system to contribute to the improvement of this. In addition, the above researchers found that to make high quality documentation of a system, the system should consider the user's perspective, satisfy their different skill levels and be oriented towards them. Li and Suomi (2009) underlines that the most important quality dimensions of electronic services are the ease of use and availability. Based on the HEGAM Higher Education Quality Assessment Model, the quality criteria for electronic services include efficiency, availability, accessibility through various ways and from anywhere, proper technical support, electronic services through social media, academic services and access services through the website. The use of this model by a higher education institution has given to its leadership guidance to meet one of its main goals that was to reduce bureaucracy and provide easy, economic and quality services (Noaman, Ragab, Fayoumi, Khedra, & Madbouly, 2013).

According to other relevant research (Allahawiah, 2013), the design of a website, the ease of navigation and the functionality play an important role in the overall assessment of electronic services' satisfaction, as these affect users' satisfaction. In addition, the same survey found that the reliability, the responsiveness, the quality of information, the security and the usability are important dimensions of the quality of electronic services. Cerri (2014) used the ES-QUAL scale to measure the expectations and perceptions of students and educational staff for electronic services and concluded that proper information based on the needs of students, the accessibility to the faculty services anytime and from anywhere and the efficiency and availability of the website are important factors of students' satisfaction.

In addition, the same research has shown that there is an increased need to share processes with students so that they can easily carry them out and reduce the workload of universities and this can only be achieved through electronic services. In Greek area, a survey on the evaluation of the services provided by a higher education institution, revealed that the students use very often Internet applications. In addition, they are satisfied and all of them underline the need for wireless WiFi (Bakos, 2013).

1.4 Theoritical Framework

Information technology has influenced the design of the service process. It also determines the effectiveness, efficiency, the value of an organization or business, and customer satisfaction. The provision of Internet services, what we call electronic services are the determining factors for the success or failure of the companies or organizations that adopt them. In particular, electronic service is the provision of services over electronic networks. Others use the term electronic services that include these services which are provided by electronic means and technologies, apart from the Internet. According to Papaioannou (2014), electronic service is a customer-driven concept. Electronic service is accessible via electronic networks and accessible to individuals via the Internet. It is an interactive content that focuses on customer service (Kim-Soon et al., 2014). There is a move to develop more services such as electronic services. There are many initiatives to launch new public electronic services via the Internet at both national and European level (Lindell, Lind, & Forsgren, 2006).

This is due to the rapid development of new technologies that overturned traditional communication models and led to citizens' increased demands and expectations for more quality and cheaper administrative services. The use of

Information and Communication Technology facilitated the introduction and management of changes in public administration by removing its isolation, as a result of the new infrastructure and improving the quality of life by reducing bureaucracy (Christodoulos & Psaropoulos, 2008). The benefits of electronic services are: a) time and money-saving b) easy access to organizations' information c) automating procedures d) reduction in costs e) flexibility f) stakeholders' satisfaction and g) productivity and profitability (Giannopoulou, 2006). Information technology has been introduced in all service organizations that offer services and it is necessary to be acceptable for all and the information to be valid, correct, reliable and secure. Electronic services for students are a common phenomenon, but there is a problem how they are developed as they are made from the organization's perspective and prevent access to them by the students who prefer other ways of being served instead of electronic services. Students consider that they need much time to move between different positions in electronic services. Moreover, the existence of many links creates an obstacle that the students should overcome to use the electronic service they want (Lindell et al., 2006). Electronic services of higher education involve student applications for various documents they may need, grades, student information, enrolment, online course submissions and more. A faster, easier and more efficient student service is achieved through the Internet and this should be the goal of those who develop these applications (Kefalas, 2013). Jalali, Islam and Ariffin, (2011) state that academic work can be covered outside the classroom and retain benefits for both university and students. Electronic services therefore benefit university and students (Sutarso & Suharmadi, 2011).

According to Gemmell & Pagano (2003) the most important aspects of a product connected to electronic services are: a) The quality of information, namely, the system should be reliable and correct. b) front-end design that includes elements of the system that users see and interact with screens and more. A well-designed front-end is likely to lead to successful use of the system. c) The level of functionality associated with how the different processes are presented about the user's needs. In addition, d) the quality of training on how the system is used is very vital for the product's success. It is the main way for users to learn the system and the quality of the system will affect not only the successful use of the system but also their attitude towards it. Also, the resistance to change can only be met by training, and e) the quality of documentation that has the form of user manual and user instructions.

1.5 Research Questions

The main purpose of this work is to investigate the perceptions, attitudes and experiences of students of the Department of Primary Education of University of the Aegean about the quality of the provided electronic administrative services to them by the Secretariat. The work aims at exploring students' perceptions of: the importance of the provided electronic administrative services, the degree of students' satisfaction with them, the effectiveness of these services, the problems, the causes and the consequences of the problems that are connected to the provided electronic administrative services. The research questions that this research will attempt to answer are:

1st: How do the students of the research, assess the importance of the provided electronic administrative services?

2nd: To what extent students consider that they are satisfied with the provided electronic administrative services?

3rd: How do the students of the research, evaluate the effectiveness of the provided electronic administrative services?

4th: What problems do students have with the provided electronic administrative services?

5th: What are the causes and the consequences of the problems that students have with electronic administrative services?

2. Method

2.1 Participant Characteristics

The participants are undergraduate students of the Department of Primary Education of University of the Aegean. The students of the Department are totally (N=592). Female students are (78.55%) of registered students and male students are (21.45%). First-year students are (N=157), second-year students are (N=163), third-year students are (N=107) and fourth-year students are (N=165).

2.2 The Sample of the Survey

A pilot survey with ten undergraduate students carried out from 21 to 24 February 2017. There wasn't need to change the questionnaire which was shared to 128 undergraduate students from 01 to 09 March 2017. The most students of the survey sample are female (85.94%), and only (14.06%) are male. Additionally, (21.66%) are first-year students, (20.86%) are second-year students, (24.30%) are third-year students and (20.61%) are fourth-year students. The relevant service of the Department of Primary Education of University of the Aegean approved the present survey.

2.3 Data Collection Tool

The questionnaire that was used to collect the data is improvised and consists of three parts. The first part concerns the gathering of general data of the sample of students to their gender and their study of the year. The second part has seven questions and relates to the evaluation of the provided electronic administrative services and starts with the question (1), which is a ranking-hierarchy question and evaluates the importance of electronic administrative services. Question (2) is a 5-point Likert scale and measures the degree of satisfaction with the services. The questions from (3) to (7) are also 5-point Likert scales and measure the effectiveness of the service Studentsweb, the official website of the department, the service Eudoxos of academic book's registration, the service of issuance of the academic identity card, and the communication platform uniway for mobiles. Criteria for evaluating effectiveness were: availability, ease of use, good organization and responding to the needs and expectations of the students. The third part includes three questions (8, 9 and 10), which are multi-choice and explore the problems, causes and consequences of the problems with the provided electronic administrative services. Cronbach's alpha value is 0.915 and value higher than 0.70 is acceptable (Bryman, 2015).

2.4 Data Analysis

The statistical processing of the answers was done with the help of Microsoft Excel and IBM SPSS Statistics 20. We used descriptive and inductive statistics. According to Kolmogorov-Smirnov, which we applied to our data because (N=128> 50) we found that our data did not follow the normal distribution and therefore applied non-parametric statistical criteria, as well as Spearman's rho for correlations. In addition, possible relationships between specific variables are tested through the Crosstabs process.

3. Results

3.1 Research Question 1: Degree of Importance of Electronic Administrative Services to Students

In question (1) "Which of the following electronic administrative services is more important for you? (Sort by the order of significance e. g. 1,2,3... the following services)", the answers of the sample are presented in Table 1.

Table 1. Distribution of frequencies relative percentages (%) and means of evaluation of the importance of electronic administrative services

Evaluation of the importance of electronic administrative services	Mean	1st choice	2nd choice	3nd choice	4th choice	5th choice	6th choice
Official website of the department	1.85	59	29	14	9	2	1
		46.1%	22.7%	10.9%	7.0%	1.6%	0.8%
Service Studentsweb	2.00	38	56	11	0	9	0
		29.7%	43.8%	8.6%	0.0%	7.0%	0%
Service Eudoxos of academic books' registration	3.34	4	12	56	27	13	2
		3.1%	9.4%	43.85%	21.1%	10.2%	1.6%
Service of issuance of academic identity card	3.70	10	6	19	57	17	5
		7.8%	4.7%	14.8%	44.5%	13.3%	3.9%
Service of application for housing benefit	4.65	1	9	8	16	57	23
		0.8%	7%	6.3%	12.55%	44.5%	18%
Communication platform uniway for mobiles	5.44	2	2	7	5	15	83
		1.6%	1.6%	5.5%	3.9%	11.7%	64.8%

3.2 Research Question 2: Degree of Satisfaction of Students with Electronic Administrative Services

In question (2) "To what extent are you satisfied with the following electronic administrative services?", the answers of the sample are presented in Table 2.

Table 2. Distribution of frequencies, relative percentages (%), means and standard deviations of satisfaction with electronic administrative services

Degree of satisfaction with the electronic administrative services	Mean	Standard Deviation	Very much	Very	Neutral	Not very	Not at all
Electronic issuance of certificates	3.35	1.049	21 16.5%	31 24.4%	51 40.2%	9 15.0%	5 3.9%
Courses' registration in Studentsweb	3.95	0.744	26 20.5%	75 59.1%	20 15.7%	6 4.7%	0 0.0%
Announcement of grades in Studentsweb	3.76	0.990	30 23.6%	53 41.7%	30 23.6%	11 8.7%	3 2.4%
Announcements of the program's courses and exams at the official website	3.81	0.957	35 27.6%	45 35.4%	36 28.3%	10 7.9%	1 0.8%
Announcements of the courses' postponements at the official website	3.24	1.269	27 21.3%	26 20.5%	37 29.1%	24 18.9%	13 10.2%
Service Eudoxos of academic books' registration	3.76	0.990	27 21.3%	60 47.2%	27 21.3%	8 6.3%	5 3.9%
Service of issuance of academic identity card	3.59	1.094	24 18.9%	55 43.3%	28 22.0%	12 9.4%	8 6.3%
Service of application for housing benefit	2.73	1.325	12 9.8%	26 21.1%	35 28.55	17 13.8%	33 26.8%
Communication platform uniway for mobiles	2.17	1.239	6 5.0%	14 11.7%	25 20.8%	24 20.0%	51 42.5%

3.3 Research Question 3: Degree of Effectiveness of Electronic Administrative Services Based on the Criteria of Availability, Ease of Use, Good Organization and Responsiveness to the Needs and Expectations of Students

In questions (3-7, one question for each service) "To what extent do you consider that the electronic administrative services are effective based on the following criteria?", the answers of the sample are presented in Tables 3 and 4.

Table 3. Means and standard deviations of evaluation of effectiveness of electronic administrative services

Criteria	Service studentsweb		Official website of the department		Service Eudoxos of academic books' registration		Service of issuance of academic identity card		Service of application for housing benefit		Communication platform uniway for mobiles	
	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.	Mean	St. dev.
A	3.35	0.845	3.89	0.949	3.66	0.951	3.62	0.94	3.12	1.048	2.69	1.116
E	3.97	0.809	3.95	0.877	3.73	0.926	3.66	0.915	3.03	1.045	2.71	1.122
O	3.74	0.844	3.70	0.937	3.73	0.803	3.61	0.881	3.04	1.004	2.76	1.164
R	3.64	0.805	3.64	0.957	3.71	0.883	3.62	0.889	2.93	1.108	2.54	1.150

Criteria: (A=Availability, E=Ease of use, O=Good organization, R=Responsiveness to the needs and expectations of students)

Table 4. Distribution of frequencies relative percentages (%) of evaluation of effectiveness of electronic administrative services

Criteria	Service studentsweb	Official website of the department	Service Eudoxos of academic books' registration	Service of issuance of academic identity card	Service of application for housing benefit	Communication platform uniway for mobiles
A	1.(N=0),0.0% 2.(N=20),16.0% 3.(N=51),40.8% 4.(N=44),35.2% 5.(N=10),8.0%	1.(N=4),3.1% 2.(N=6),4.7% 3.(N=23),18.0% 4.(N=62),48.4% 5.(N=33),25.8%	1.(N=4),3.1% 2.(N=10),7.8% 3.(N=33),25.8% 4.(N=60),46.9% 5.(N=21),16.4%	1.(N=3),2.4% 2.(N=9),7.2% 3.(N=43),34.3% 4.(N=48),38.4% 5.(N=22),17.6%	1.(N=9),8.3% 2.(N=15),13.9% 3.(N=49),45.4% 4.(N=24),22.2% 5.(N=11),10.2%	1.(N=20),20.0% 2.(N=18),18.0% 3.(N=39),39.0% 4.(N=19),19.0% 5.(N=4),4.0%
E	1.(N=1),0.8% 2.(N=4),3.2% 3.(N=25),19.8% 4.(N=64),50.8 % 5.(N=32),25.4%	1.(N=2),1.6% 2.(N=5),3.9% 3(N=25),19.5% 4.(N=61),47.7% 5.(N=35),27.3%	1.(N=3),2.3% 2.(N=9),7.0% 3.(N=31),24.2% 4.(N=61),47.7% 5.(N=24),18.8%	1.(N=4),3.2% 2.(N=5),4.0% 3.(N=41),32.8% 4.(N=54),43.2% 5.(N=21),16.8%	1.(N=12),11.1% 2.(N=14),13.0% 3.(N=48),44.4% 4.(N=27),25.0% 5.(N=7),6.5%	1.(N=19),19.0% 2.(N=20),20.0% 3.(N=36),36.0% 4.(N=21),21.0% 5.(N=4),4.0%
O	1.(N=2),1.6% 2.(N=3),2.3 % 3.(N=44),35.2% 4.(N=53),42.4% 5.(N=23),18.4	1.(N=3),2.4% 2.(N=8),6.3% 3.(N=38),29.9% 4.(N=53),41.7% 5.(N=25),19.7%	1.(N=1),0.8% 2.(N=6),4.7% 3.(N=41),32.3% 4.(N=57),44.9% 5.(N=22),17.3%	1.(N=2),1.6% 2.(N=10),8.1% 3.(N=39),31.5% 4.(N=56),45.2% 5.(N=17),13.7%	1.(N=11),10.2% 2.(N=13),12.0% 3.(N=51),47.2% 4.(N=27),25.0% 5.(N=6),5.6%	1.(N=20),20.0% 2.N=16,16.0% 3.N=38,38.0% 4.N=20,20.0% 5.N=6,6.0%
R	1.(N=1),0.8% 2.(N=7),5.6% 3.(N=44),34.9% 4.(N=58),46.0% 5.(N=16),12.7%	1.(N=5),3.9% 2.(N=7),5.5% 3.(N=38),29.9% 4.(N=56),44.1% 5.(N=21),16.5%	1.(N=2),1.6% 2.(N=7),5.5% 3.(N=40),31.5% 4.(N=55),43.3% 5.(N=27),18.1%	1.(N=2),1.6% 2.(N=10),8.1% 3.(N=39),31.5% 4.(N=55),44.4% 5.(N=18),14.5%	1.(N=17),15.7% 2.(N=13),12.0% 3.(N=45),14.7% 4.(N=27),25.0% 5.(N=6),5.6%	1.(N=24),24.0% 2.(N=22),22.0% 3.(N=35),35.0% 4.(N=14),14.0% 5.(N=5),5.0%

Criteria: (A=availability, E=Ease of use, O=Good organization, R=Responsiveness to the needs and expectations of students). Degree of effectiveness: (1=Not at all, 2=Not very, 3= Neutral, 4=Very, 5=Very much)

3.4 Research Question 4: Problems with Provided Electronic Administrative Services

In question (8) "Which problems do you have with electronic administrative services?", the students answered the following: "delay of grades' announcement" (N=105, 82.0%), "delay of certificates' issuance" (N=19, 14.8%), "mistakes in courses' grades" (N=30, 23.4%), "mistakes in certificates' issuance" (N=5, 3.9%), "mistakes in courses' registration" (N=11, 8.6%), "mistakes in academic books' registration" (N=17, 13.3%), "unsuccessful courses' registration" (N=27, 21.1%), "unsuccessful academic books' registration" (N=19, 14.8%), "unsuccessful issuance of academic identity card" (N=12, 9.4%), "unsuccessful issuance of certificates" (N=9, 7.0%).

3.5 Research Question 5: Causes and Consequences of Problems

Questions (9) and (10) answer this research question. In question (9) "Which of the following causes of problems related to the electronic administrative services have you faced during your studies?" the students answered the following: "Lack of accessibility on the Internet" (N=38, 29.7%), "lack of students' familiarity with electronic administrative services" (N=37, 28.9%), "non-inclusion of grades by academic staff" (N=45, 35.2%), "miss of critical deadlines for courses' registration in service Studentsweb" (N=18, 14.1%), "difficulty with the use of service Studentsweb for courses' registration" (N=16, 12.5%), "miss of critical deadlines for books' registration in service Eudoxos" (N=7, 5.5%), "difficulty with the use of service Eudoxos for books' registration" (N=18, 14.1%), "mistakes in book's registration in service Eudoxos" (N=16, 12.5%), "non-information from the official website of the department" (N=24, 18.8%), "an announcement of a course's postponement at the official website wasn't be seen by students" (N=39, 30.5%) and "non-announcement of lesson's postponement at the official website of the department" (N=62, 48.4%).

In question (10) "Which of the following consequences of problems related to the electronic administrative services have you faced during your studies?", the students answered the following: "Delay of completing studies" (N=17, 13.3%), "the service Eudoxos shut down and student had to return an academic book because of mistake in books' registration" (N=21, 16.4%), "the students didn't receive academic book/books from the service Eudoxos" (N=26, 20.3%), and "the students went to a lesson that had been postponed" (N=79, 61.7%).

3.6 Gender and Study of Year

Statistically significant differences were found between male and female students that are presented in Table 5.

Table 5. Statistically significant differences based on gender

Variable A	Variale B	Test	p=0.05	Male Frequencies (%)	Female Frequencies (%)
	Causes of problems: "Miss of critical deadlines for courses' registration"	Fisher's Exact test	0.004	38.9	10.0
Gender	Causes of problems: "Miss of critical deadlines for books' registration"	Fisher's Exact test	0.008	22.2	2.7
	Consequences of problems: "The service Eudoxos shut down and student had to return an academic book because of mistake in books' registration"	Fisher's Exact test	0.047	33.3	13.6

Statistically significant differences were found based on the year of study that are presented in Table 6.

Table 6. Statistically significant differences based on the year of study

Variable A	Variable B	Test	p=0.05	1st year	2nd year	3rd year	4th year
				Mean			
	Importance of service of issuance of academic identity card	Kruskal-Wallis	0.014	3.06	4.03	3.90	3.90
	Degree of satisfaction with courses' registration in Studentsweb	Kruskal-Wallis	0.007	3.56	4.00	4.19	4.12
	Degree of satisfaction with service of application for housing benefit	Kruskal-Wallis	0.047	2.38	2.76	2.50	3.25
Year of study	Effectiveness of the service Eudoxos of academic books' registration based on the criterion: "ease of use"	Kruskal-Wallis	0.046	3.41	3.74	3.81	4.00
				Frequencies (%)			
	Causes of problems related to the electronic administrative services: "Mistakes in book's registration"	Pearson Chi-Square= 9.308	0.025	18.2	18.2	0.0	63.6
	Consequences of problems: "The student went to a lesson than had been postponed"	Pearson Chi Square= 19.645	0.003	27.8	15.2	27.8	29.1

3.7 Significant Correlations between Criteria of Effectiveness and Students' Satisfaction

There are significant positive correlations among the students' satisfaction with "courses' registration in Studentsweb" and the following criteria: "availability" of the service ($r=0.216$, $p=0.016$), "responsiveness to the needs and expectations of students" ($r=0.372$, $p=0.000$), "good organization" ($r=0.395$, $p=0.000$) and "ease of use" ($r=0.422$, $p=0.000$). There are significant positive correlations among the student's satisfaction with "announcements of the program's courses and exams at the official website", and the following criteria: "ease of use" ($r=0.297$, $p= 0.001$), "availability" ($r=0.332$, $p=0.000$), "good organization" ($r=0.408$, $p=0.000$) and "responsiveness to the needs and expectations of students" ($r=0.446$, $p=0.000$). In addition, there are significant positive correlations among students' satisfaction with "announcements of the courses' postponements at the official website" and the following criteria: "availability" ($r=0.291$, $p=0.001$), "ease of use" ($r=0.363$, $p=0.000$), "responsiveness to the needs and expectations of students" ($r=0.435$, $p=0.000$) and "good organization" ($r=0.479$, $p=0.000$).

Moreover, there are significant positive correlations among the student's satisfaction with the service "Eudoxos of academic books' registration" and the following criteria: "good organization" ($r=0.310$, $p=0.000$), "ease of use" ($r=0.375$, $p=0.000$), "availability" ($r=0.378$, $p=0.000$) and "responsiveness to the needs and expectations of the

students" (r=0.484, p =0.000).

Additionally, there are significant positive correlations between the satisfaction with the "service of issuance of academic identity card" and three of the four following criteria of effectiveness: "availability" (r=0.386, p=0.000), "ease of use" (r=0.366, p=0.000) and "good organization" (r=0.470, p=0.000). Significant positive correlations are also found among the satisfaction with the "service of application for housing benefit" and the four following criteria of effectiveness: "good organization" (r=0.445, p=0.000), "ease of use" (r=0.515, p=0.000), "responsiveness to the needs and expectations of students" (r=0.523, p=0.000) and "availability" (r=0.572, p=0.000). Also, there are positive correlations among the "communication platform uniway for mobiles", and the four following criteria of effectiveness: "good organization" (r=0.424, p=0.000), "responsiveness to the needs and expectations of students" (r=0,487, p=0.000), availability (r=0.489, p=0.000) and "ease of use" (r=0.544, p=0.000).

3.8 Significant Correlations between Problems with Electronic Administrative Services and Students' Satisfaction

The percentage of students who have met the problem of "Mistakes in courses' grades" differs in the categories of variable "degree of satisfaction with announcement of grades in service Studentsweb".

Table 1. Correlation between the variables: "mistakes in courses' grades" and "degree of satisfaction with announcement of grades in Studentsweb"

Variable A	Variable B				
Pearson Chi Square= 16.275					
p=0.003					
Mistakes in courses' grades	Degree of satisfaction with announcement of grades in Studentsweb				
	Very Much	Very	Neutral	Not very	Not at all
Yes	21	12	3	5	3
	24.5%	41.4%	10.3%	17.2%	10.3%
No	21	41	27	6	0
	24.5%	41.8%	27.6%	6.1%	0.0%

The percentage of students who have met the problem "Unsuccessful academic books' registration" differs in the categories of the variable "degree of satisfaction with academic books' registration in service Eudoxos".

Table 2. Correlation between the variables: "unsuccessful academic books' registration" and "degree of satisfaction with books' registration in service Eudoxos"

Variable A	Variable B				
Pearson Chi Square= 20.226					
p=0.000					
Unsuccessful academic books' registration	Degree of satisfaction with academic books' registration in service Eudoxos				
	Very Much	Very	Neutral	Not Very	Not at all
Yes	1	11	1	5	1
	5.3%	57.9%	5.3%	26.3%	5.3%
No	26	49	26	3	4
	24.1%	45.4%	24.1%	2.8%	3.7%

4. Discussion

4.1 Research Question 1: Degree of Importance of Provided Electronic Administrative Services to Students

Official website of the department is the most important service to students, followed by the service Studentsweb, the service Eudoxos of academic books' registration, the service of issuance of academic identity card, the service of

application for housing benefit and the communication platform uniway for mobiles.

4.2 Research Question 2: Degree of Satisfaction of Students with Electronic Administrative Services

Students are primarily satisfied with the "courses' registration in Studentsweb", followed by the "announcements of the program's courses and exams at the official website of the department", the "announcement of grades in Studentsweb" and the service Eudoxos of academic books' registration, the service of issuance of academic identity card, the electronic issuance of certificates, the "announcements of the courses' postponements at the official website of the department", the service of application for housing benefit, and the communication platform uniway for mobiles. From the above findings it seems that even though students are more satisfied with the services which are more important to them, they also notice failures in these services. Therefore, there is room for improvement despite their satisfaction due to the great importance these services have for them. Among these services are the website of the department, the service Studentsweb and the service Eudoxos.

4.3 Research Question 3: Degree of Effectiveness of Electronic Administrative Services Based on the Criteria of Availability, Ease of Use, Good Organization and Responsiveness to the Needs and Expectations of Students

According to students' answers, the service Studentsweb seems to be the easiest of all services, followed by the official website of the department, the service Eudoxos of academic books' registration, the service of issuance of academic identity card, the service of application for housing benefit and the communication platform uniway for mobiles which seems to be the most difficult to use.

The official website of the department based on the criterion of availability is the most effective of all services, followed by the service Eudoxos of academic books' registration, the service of issuance of academic identity card, the service Studentsweb, the service of application for housing benefit and the communication platform uniway for mobiles.

The service Studentsweb is the most organized service of all services, followed by service Eudoxos of academic books' registration, the official website of the department, the service of issuance of academic identity card, the service of application for housing benefit and the communication platform uniway for mobiles.

The service Eudoxos of academic books' registration is the service that responds the most to students' needs and expectations of all services, followed by the official website of the department and the service Studentsweb, the service of issuance of academic identity card, the service of application for housing benefit and the communication platform uniway for mobiles.

4.4 Research Question 4: Problems with Electronic Administrative Services

The most important problems with provided electronic administrative services that students identified are "delay of grades' announcement", followed by   "mistakes in courses' grades", "unsuccessful courses' registration", "delay of certificates' issuance", "unsuccessful academic books' registration", "mistakes in academic books' registration", "unsuccessful issuance of academic identity card", "mistakes in courses' registration", "unsuccessful issuance of certificates" and "mistakes in certificates' issuance".

4.5 Research Question 5: Causes and Consequences of Problems

The most important causes of the problems with electronic administrative services that students identified are "non-announcement of lesson's postponement at the official website of the department", followed by "non-inclusion of grades by academic staff", "an announcement of a course's postponement at the official website wasn't be seen by students", "lack of accessibility on the Internet", "lack of students' familiarity with electronic administrative services", "non-information from the official website of the department", "miss of critical deadlines for courses' registration in service Studentsweb", "difficulty with the use of service Eudoxos for books' registration", "difficulty with the use of service Studentsweb for courses' registration", "mistakes in books' registration in service Eudoxos", and "miss of critical deadlines for books' registration in service Eudoxos".

The most important consequences of the problems are presented below. A very large percentage of students (61.7%) stated that they went to a lesson that had been postponed, a lower percentage (20.3%) of students stated that they didn't receive academic book/books from the service Eudoxos, (16.4%) of students stated that the service Eudoxos shut down and they had to return an academic book because of mistake in books' registration and (13.3%) of students stated that they delayed completing their studies.

4.6 Gender and Study of Year

Male and female students differ in the causes of the problems that they have faced with the services. Especially,

(38.9%) of male students stated that "miss of critical deadlines for courses' registration in service Studentsweb" was a cause of problem as opposed to a lower percentage of female students (10.0%). Moreover, a high percentage of male students (22.2%) stated that "miss of critical deadlines for books' registration in service Eudoxos" was a cause of problems as opposed to a much lower percentage of female students (2.7%).

Moreover, there was a differentiation between male and female students about the consequence of the problem "the service Eudoxos shut down and student had to return an academic book because of mistake in books' registration", as male students (33.3%) have faced this consequence more often than female students (13.6%).

The findings of the survey show that first-year students are less satisfied with "courses' registration in service Studentsweb", followed by second-year students, fourth- year students and third-years students. Also, first-year students are less satisfied with service of application for housing benefit, followed by third-year students, second-year students and fourth-year students. The service Eudoxos of academic books' registration is the least easy service for first-year students, followed by second-year students, third-year students and fourth-year students.

Also, students differ in the frequency that face the problem "mistakes in courses' registration", as third-year students have never face this problem (0.0%), followed by first-year students and second-year students (18.2%), while fourth-year students have faced this problem at a higher percentage of (63.6%). Finally, there is differentiation between the students about the frequency of the consequence "the student went to lesson that had been postponed", as second-year students have the lowest percentage (15.2%), followed by first-year students and third-year students that they both had the same percentage (27.8 %) and fourth-year students (29.1%).

4.7 Significant Correlations between Criteria of Effectiveness and Students' Satisfaction

Significant positive correlations were found between the four criteria of effectiveness (availability, ease of use, good organization, responsiveness of services to the needs and expectations of students) and students' satisfaction with electronic administrative services. There were significant positive correlations, which is also confirmed by the study of Li and Suomi (2009) that "ease of use" and "availability" are quality dimensions for electronic services.   The importance of the criterion "ease of use", usability is confirmed by Allahawiah (2013). In addition, Cerri (2014) reports that the availability of the website is an important factor for student's satisfaction, as demonstrated in this research.   According to Noaman et al., (2013), the effectiveness, accessibility, availability of services and the good organization of the website that provides academic and access services are crucial quality criteria. The criterion "responsiveness of a system to the needs and expectations of users" is also a very important factor for the system's success (Gemmell & Pagano, 2003).

4.8 Significant Correlations between Problems and Students' Satisfaction

The consistency test between problems and students' satisfaction shows that students who chose the answer "not at all" satisfied with "announcement of grades in Studentsweb" (10.3%) have faced the problem of "mistakes in courses' grades" as opposed to those who did not have faced that problem and they are more satisfied with this service and no one chose the answer "not at all" satisfied. Also, the percentage of students who have met this problem is higher also in the category of "not very" satisfied (17.2%) as opposed to those who have not met the problem where in the same category the percentage is lower (6.1%). Students who have met the problem "unsuccessful academic books' registration" have stated that they are "very much" satisfied with the "Service Eudoxos of academic books' registration" at a very low percentage of (5.3%) while those who have not met this problem state that they are "very much" satisfied at a very higher percentage of (24.1%). Therefore, some specific problems faced by students in electronic administrative services have negatively affected their satisfaction.

5. Limitations

The limitations of the survey include the fact that there was an imbalance between men and women in this department, as it is a department with a very small number of male students. Moreover, the evaluation of electronic administrative services was done by a small number of students of only one of the departments of University of the Aegean. Therefore, the results can't be generalized.

6. Conclusions

In relation to the importance of services, students consider that the most important service for them is the official website of the department.   In relation to the degree of satisfaction, students are most satisfied with the "courses' registration in Studentsweb". Studentsweb is also a service that is important to students after the official website of the department.

In relation to the year of study, third-year students and fourth-year students are more satisfied with "courses'

registration in Studentsweb" than second-year and first-year students. Also, fourth-year and second-year students are more satisfied with the service of application for housing benefit than third-year and first-year students. Moreover, fourth-year students have met the problem "mistakes in courses' registration" and have gone to course that had been postponed more times than the students of other years.

Concerning the gender, male students seem to be less consistent than female students in terms of deadlines for courses' registration and academic books' registration. Also, male students seem to have made more mistakes in academic book's registration, since they have been forced more times to return books for unblocking the system. Among the four criteria of effectiveness, the official website of the department is the most effective service of all based on the criterion "availability", the service Studentsweb is the most effective service of all based on the criteria "good organization" and "ease of use" and the service Eudoxos of academic books' registration is the most effective of all based on the criterion "responsiveness to the needs and expectations of students". The most common problems that students met is the "delay of grades' announcement".

The criteria for electronic administrative services: "availability", "ease of use", "good organization" and "responsiveness to the needs and expectations of students" are related to the degree of students' satisfaction. According to the present research, the more effective and qualitative the services are based on these criteria the more satisfied students are with services. Finally, the problems "mistakes in courses' grades" and "unsuccessful academic books' registration" seems to have a negative impact on the satisfaction of students with the related services that have these problems.

The findings of this research can be particularly useful to the administrative staff and the faculty of University of the Aegean as they show the dimensions of electronic administrative services that are important and effective and satisfy or create problems for students. Thus, it is possible to set priorities and take measures and actions to discuss weaknesses, improve the quality of provided services and increase student satisfaction. In addition, the results have shown that a student assessment of services can enrich the existing evaluation procedures. It could be beneficial for universities to organize such surveys as part of their evaluation. Indeed, they could compare the results to find wider problems, but also over time and check the effectiveness of any interventions and changes.

7. Proposals for Further Research

This research followed only the quantitative approach due to time constraints. A future research could combine qualitative approaches and enrich its findings. It could also use a larger sample or the views of educational and administrative staff on the quality of provided electronic administration services. Further research effort could improve the questionnaire and enhance its credibility. The establishment of a reliable questionnaire, which can be consistently confirmed, is a challenge for the research on the quality of provided services by educational organizations (Legčević, 2010). In the future, it would be interesting to study other electronic and non-electronic administrative services of higher education institutions. The evaluation could involve both the teaching staff and the staff of the institutions for the services they use. In addition, it would be very useful to evaluate the electronic services of universities based on other efficacy-quality criteria. Simultaneously, a comparative study of the quality of electronic services of a Greek university and a standard foreign university could lead to very interesting findings that could help us to see what we can do for improving the quality of the offered electronic services in Greek universities. Finally, it is possible to study the responsibility and the treatment of electronic services by female and male, for students, teaching staff or employees.

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