Determinants of Students' Satisfaction with University Portal Services in Jordan

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AUTHORIZATION

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DEDICATION

All praises and thanks to Allah, the Lord of all worlds and exist, the most Gracious and the most Merciful.

I dedicate this work to…

My parents who taught me beyond the darkness, that there are always light and hope

My brother and sisters

My best friends in MEU and Hikma pharmaceutical

All my family

The spirit of my friend Abdul Rahman and my uncle Nabil Amer

All cancer patients in the world

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ABSTRACT

The rapid growth and expansion of the Internet and new information technologies changed the way of delivering information and services. These information and communication technologies' advancements offered universities huge opportunities for expansion, introduction of new services and development of both qualitatively and quantitatively.

As user's stratification is key in educational services and since university portals are the gateway for these services, this study sought to identify significant factors that influence student's satisfaction with university portal in Jordan, and the degree of influence of these factors. In this study established information quality, system quality, user's ability and educational services availability as factors influencing user's satisfaction.

The results of this study showed that system quality, user's ability and educational services availability influence student's satisfaction in Jordanian universities, while, information quality do not significantly influence students satisfaction.

محددات رضا الطلبة عن خدمات البوابات الجامعية الإلكترونية في الأردن

الخلاصة

ان النمو السريع و التوسع في مجال الانترنت و تكنولوجيا المعلومات قد غير طرق و سبل ايصال المعلومات و الخدمات. إذ أن هذا النمو السريع في تكنولوجيا المعلومات والاتصالات أتاح للجامعات فرصا ضخمة للتوسع، وإدخال خدمات جديدة وتطويرها سواء من حيث الجودة والكمية. وأصبحت البوابات الإلكترونية الخاصة بالجامعات المدخل الرئيسي لها في أيامنا هذه .

لقد طورت الجامعات الأردنية كغيرها من الجامعات في جميع أنحاء العالم البوابات الإلكترونية الخاصة بها لتواكب التطور مع الجامعات و المؤسسات العلمية و لتحصل على اكبر قدر ممكن من الفائدة و الفرص التي توفرها هذه البوابات.

إن رضا المستخدم أمر أساسي في الخدمات التعليمية و بوابات الجامعات الإلكترونية وهي مدخل لهذه الخدمات، لذلك تسعى هذه الدراسة إلى تحديد العوامل الهامة التي تؤثر على رضا الطالب من بوابة الجامعات في الأردن، ودرجة تأثير هذه العوامل حيث أننا في هذه الدراسة أخذنا نوعية المعلومات وكفائة النظام ومدى توفر الخدمات التعليمية كعوامل لدراسة مدى الرضا لدى المستخدمين .

أظهرت نتائج هذه الدراسة أن جودة النظام ، وقدرة الاستخدام من قبل المستخدمين ومدى توفر الخدمات الطلابية في الجامعات الأردنية تؤثر في مدى رضا الطلاب ,في حين أن نوعية المعلومات لا تؤثر تأثيرا كبيرا على رضا الطلاب.

Chapter One

General Framework of the Study

1.1 INTRODUCTION

1.2 PROBLEM OF THE STUDY

1.3 QUESTIONS AND HYPOTHESES OF THE STUDY

1.4 SIGNIFICANCE OF THE STUDY

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1.8 MODEL OF THE STUDY

1.9 TERMINOLOGIES OF THE STUDY

1.1 INTRODUCTION

In the last two decades, the world has witnessed significant developments and innovations in information and communications technologies more than anyone could imagine before. Internet has emerged as a new media form and platform for creating, sharing and disseminating huge volumes of information and knowledge around the Globe. With the advancement of web tools (such as Web 2.0) users' experience has been exploited with new features that support personalization, interactivity, content creation, and accessibility to real-time data, information and news (Laudon & Laudon, 2006).

One of the features of Web 2.0 that has emerged, was the portals. Portal is a web site that functions as a point of access to information in the World Wide Web. Universities are one of the organizations which get benefits from these portals. University portals became the standard tool for delivering services to students, faculty and staff in a cost effective manner (Rahman, 2009). Jordanian universities as many other universities worldwide have developed their portals in an effort to follow other international institutes and gain from the wide range of benefits and opportunities that these web portals offer.

University portals can help in recruiting students, serving staff and support operations. University portals can also help students access multiple services such as: registration, student's status system (grades, attendance record), research databases (online library service, international library services), financial services and other benefits.

Technology plays a significant role in learning, since Information and communications technologies have been identified as a method for future development. However, very few studies have looked into user's satisfaction with university portals and particularly in Jordanian universities.

This study will identify significant factors that influence student's satisfaction with universities portal in Jordan. In this study information quality, system quality, user's ability and educational services availability will be considered as factors influencing user's satisfaction.

1.2 PROBLEM OF THE STUDY

While the number of university portal services in Jordan is increasing, and more students are migrating to online services, the need to explain the differences between these Jordanian university portal services which provide to their students, and the factors which may drive the students' and other users' satisfaction becomes critical. Thus, the universities and other educational associations may need to know these factors and the influence of each one on students' or other users' satisfaction. This thesis seeks to address the key factors that drive students' satisfaction with universities' portals in Jordan and the influence of these factors on students' satisfaction.

1.3 QUESTIONS AND HYPOTHESES OF THE STUDY

In order to clarify the student's satisfaction with university portals, this thesis will address the following questions:

Q1: What factors are involved in the process of students' satisfaction with respect to university portal in Jordan?

Q2: How much do these factors influence students' satisfaction?

In this study four factors are identified and will be tested to measure each influence on the students' satisfaction, and they are: information quality, system quality, user's ability and educational services availability.

From question (2) the four main hypotheses can be proposed as follows:

Ho1: There is no statistically significant effect for information quality on user's satisfaction with university portal services in Jordan.

Ho2: There is no statistically significant effect for system quality on user satisfaction with university portal services in Jordan.

Ho3: There is no statistically significant effect for user's ability on user's satisfaction with university portal services in Jordan.

Ho4: There is no statistically significant effect for educational services availability on user's satisfaction with university portal services in Jordan.

1.4 Significance of the Study

The importance of this study in the following reasons:

- It will identify significant factors for the design of university portal services, focusing on end users.
- It will help the Jordanian universities to understand the students and the factors are effective more in websites and online services and applications.
- It will facilitate future upgrades or re-designs of university portal systems.
- It will show the scarcities of similar studies of this kind in Jordan.

1.5 Objectives of the Study

As user's stratification is key in educational services and since university portals are the gateways for these services, this study will seek to identify significant factors that influence students' satisfaction with university portal in Jordan, and the degree of influence of these factors.

The main objectives for this study are to:

identify the impact of the following factors on user's satisfaction in Jordanian universities:

1- Information Quality (Content, Accuracy, Timeliness, Usefulness, Usability)

2- System quality (Design, Navigation, Support services, Security& privacy, downtime)

3- User's ability (Computer skills, Internet skills)

4- Educational services availability:

i. Registration service

ii. Email services

iii. Students status system (Grades, Attendance record, Financial status)

iv. Research databases (Online library service, international library services)

v. E-learning gateway (Class material and lecture notes).

vi. Social media links and communities.

1.6 LIMITATIONS OF THE STUDY

- Timeline limitation: The academic year 2011-2012
- Human resource limitation: Jordanian university students.
- Location limitation: Hashemite Kingdom of Jordan.
- Scientific limitation: Limited accesses on international and online library.

1.7 DELIMITATIONS OF THE STUDY

- This research is limited to the sample of Jordanian universities.
- Just sample of students from the selected universities is taken in this study.

1.8 MODEL OF THE STUDY

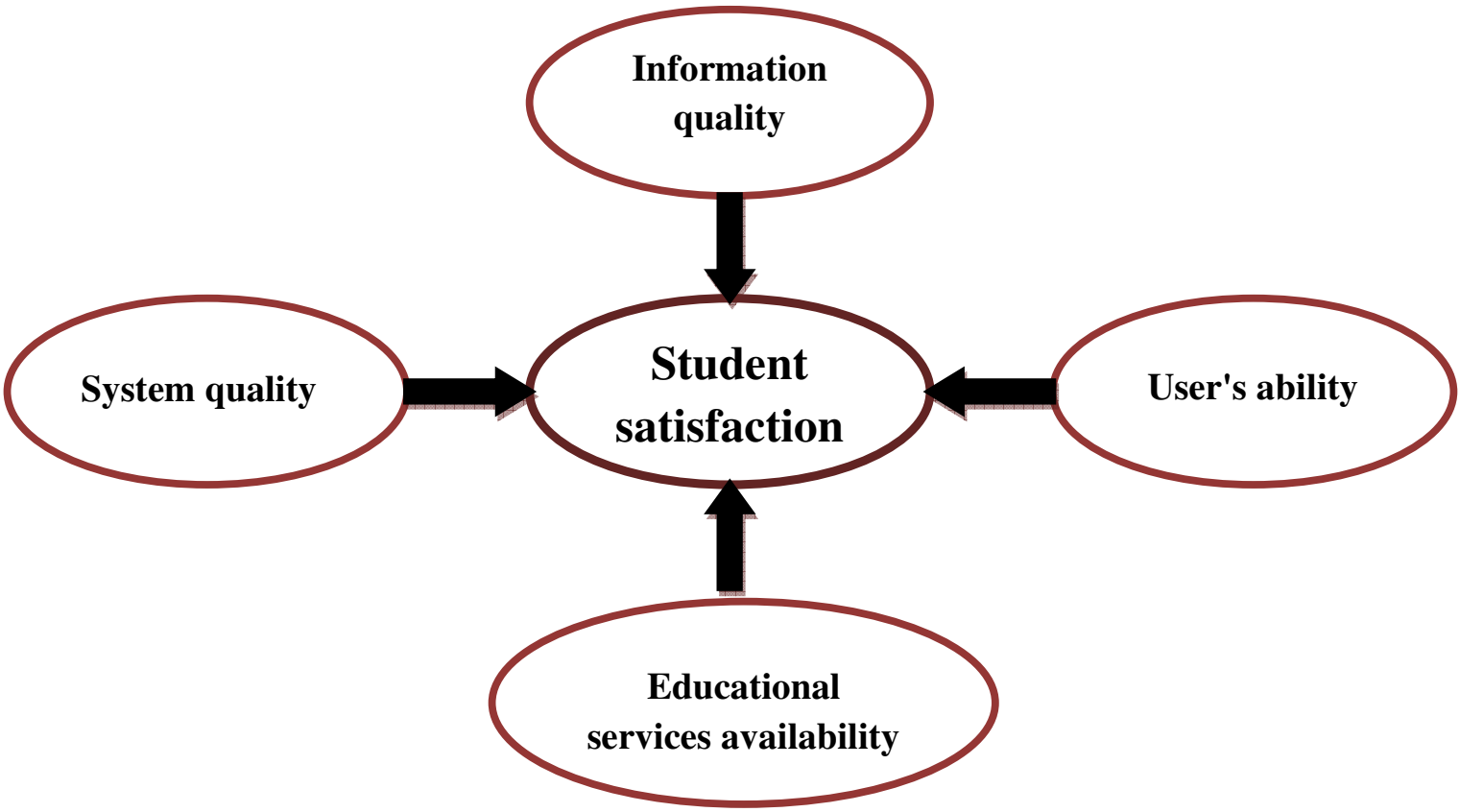

Figure (1-1) model of the study

1.9 TERMINOLOGIES OF THE STUDY

- User's satisfaction: is the perception of pleasurable fulfillment of a service, and loyalty as deep commitment to the service provider (Oliver, 1999).
- Portal: is a single integrated, ubiquitous, and useful access to information (data), applications and people. (Tatnall, 2007).
- System quality: is the processing quality of an information system (Liang and Chen, 2009).
- Usefulness: is the degree to which a specific information item will serve the information needs of the user (Tsakonas & Papatheodorou, 2006)
- Support services: are the overall support delivered by the online service provider (Liang and Chen, 2009).
- Navigation: is the process of monitoring and controlling the movement of a craft or vehicle from one place to another (Bowditch, 2002)
- Usability: is concerned with the ease of use of a given system in an efficient, effective and satisfactory way (Tsakonas and Papatheodorou, 2006).
- Web design: is the art and process of creating a single Web page or entire Web sites (Jane, 2006).
- Information security: is protecting information and information systems from unauthorized access, use, disclosure, disruption, modification, perusal, inspection, recording or destruction (Vacca, 2009).
- Information privacy: is the relationship between collection and dissemination of data (Mittal, 2009).

- Information Quality : is the fitness of information for an intended use (Al-Hakim, 2007)
- Content: is the material that makes up a website. This could be words (text), pictures, images or sounds (Perez, 2008)
- Accuracy: is faithful measurement or representation of the truth; correctness; precision (Guptill, 1995).
- Timeliness: is the state of being timely (Brown and Cobb, 1834).
- Downtime: is the time when a Configuration Item or IT Service is not available during its Agreed Service (Bon and Pieper, 2008).

CHAPTER 2

Theoretical Framework and Previous Studies

2.1 INTRODUCTION

2.2 BACKGROUND

2.2.1 PORTALS

2.2.2 HISTORY OF WEB PORTALS

2.2.3 UNIVERSITY PORTALS

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2.2.5 UNIVERSITIES IN JORDAN

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2.2.8 SATISFACTION

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2.4 PREVIOUS STUDIES

2.1 INTRODUCTION

This chapter presents a background of the research area; it contains general idea of portals, university portal, university portal services, user satisfaction and E-learning management systems used in universities. This has been followed by theoretical framework (variables and dimensions in this study) which will be discussed.

Finally, this chapter will present the most relevant previous studies which were useful for this study.

2.2 BACKGROUND

2.2.1 PORTALS

A web portal is a term, often used interchangeably with gateway, for a World Wide Web site whose purpose is to be a major starting point for users when they connect to the Web (Tatnall, 2007:522). A Web portal or public portal refers to a Web site or service that offers a broad array of resources and services, such as e-mail, forums, search engines, and online shopping malls (Bridgeson, 2006:174). Gartner Group includes four basic components in its definition of a portal: connection, content, commerce, and community (Yanosky, 2000).

Features of a web portal include: a single point of entry to applications and services, the ability to communicate and collaborate, personalization, and integration of functions and data from multiple systems (Palmer, 2002). Web portal present automatically the information and services that a user would need at the appropriate time, it allow a user to

select the information and services that are his interests and to customize their presentation.

Dimaio (2001) points out the importance of integration of applications, rather than a simple collection of content, within the portal. A portal will never provide a person with all of their informational needs. An organization can create a gateway, however, that should provide a significant amount of core information, personalization of portal content is an important element in making the campus Intranet useful to a broad set of constituents.

Portals can be classified based on their target users, Murray (1999) classified portals into four types:

- Information Portals: These portals provide information to users.
- Collaboration Portals: These portals connect users and provide facilities for them to collaborate in activities.
- Expertise Portals: These portals allow users to communicate with each other and share their experiences, special interests and services.
- Knowledge Portals: These portals provide users a combination of all the above mentioned services.

This study is concerned with information portal which provides required information to the student they needed in the educational process.

2.2.2 HISTORY OF WEB PORTAL

According to Robins and Sochats (2000), portals have evolved at three important levels:

Early phase:

This phase witnessed the birth of some of the components of a web portal. Portals have been defined as a door or gateway to information on the web. They were used as an entry point to information sources. In this phase, differentiation was the main idea was shown by most websites.

Growth phase:

During the Growth phase, the size of web sites had increased in terms of number of pages. This situation caused a lack of general organization to the information, and also weak navigability. Following this, search engines were defined for web portals. A search service is automatic software for scanning the web for web sites. Most search service businesses were started during this phase.

Expansion phase:

In this phase, web portals developed in terms of size (number of servers and users) and depth (content). The World Wide Web had also progressed during this stage. Technological advancements have made the web more accessible and robust when compared to the other two earlier other phases. These developments in web server and browser technology led to the existence of private virtual network. Web access to databases is another advancement made. Hence, there was a big expansion in the functions of portals to support various web services for different users.

2.2.3 *Comparison between Website and Web Portal*

The term portal is used to describe a website that acts as an entry point or gateway to an array of services or resources. Obviously all sites can do this to some degree, but typically a portal will have a wide range of resources, usually including a search facility, directory of other sites, news, e-mail etc.

Azarbarzin (2008) highlighted the differences between the website and web portal, as shown in the below Table.

Table (2-1) Comparison between Website and Web Portal

	Web Site	Web Portal
1	Website is owned by an organization or center.	Portal is user-centric, which means that a user can organize and offer information and data.
2	The user cannot interact with a website	The user and portal can have two-way communication or interaction.
3	Website is not an essential knowledge domain.	Portal is the gateway to specific or special knowledge domain.
4	The information and sources on a website are, rarely updated.	The information sources on a web portal are updated, regularly by the owner.

Azarbarzin (2008)

Table (2-1) shows the main differences between websites and web portal, the comparison was based on the interactivity, updating, knowledge domain and ownership.

2.2.4 UNIVERSITY PORTAL

A University Portal or Institution Portal is a one-stop client-oriented web site that personalizes the portal's tools and information to the specific needs and characteristics of the person visiting the site, using information from the faculty databases (Abdulhamid & Ismaila, 2010). The main goal for university portal is make it easy for student to find university information and services targeted specifically at them. The portal use a single consistent web-based front end to present information from a variety of back-end data sources.

The concept of university information services has been expanded and generalized to include internet portal services, and the increase in interest regarding web-based campus portal services has compelled each university to invest vast resources on the purchase of campus-wide information systems, their development, and their practice (Bajec, 2005).

Campus portal services can be considered a comprehensive information service by which searching function can be provided for the modern university's variety of information resources and specific external information, including many customized communities and personal e-mail accounts (Lee et.al, 2009).

2.2.5 UNIVERSITY PORTAL SERVICES

Information about students is stored in many different databases at a University. This includes student information, course information, library information, calendaring and scheduling software, and so on. The role of a portal is to put a consistent "face" to this information so that students don't have to interact with many different web interfaces to get their information.

Even if the concept of portal is generally associated with mass market website systems like Yahoo or Google, campus portals can also be understood as a comprehensive system providing education functions including educational registration, scores, and scholarship education financing (Roach and Ronald, 2000).

Students in institutions of higher education need to access and manage electronic data. They need to use computers and have access to networks to retrieve training materials, databases, financial data, etc. (Mansourvar and Yasin, 2010).

Today, most universities use the web portal for many educational goals such as monitoring and enhancing knowledge, controlling educational processes such as providing access to educational resources, providing search database and etc.

2.2.6 UNIVERSITIES IN JORDAN

Higher education in Jordan began half a century ago with the founding of teachers' colleges which led to the endowment of the first public university, the University of Jordan, in (1962). Yet it was another 14 years before a second one, Yarmouk University, was established. The Jordanian Council of Higher Education was established in 1982 and was absorbed into a ministry 3 years later. The first private Jordanian University, Amman University, was founded in 1990. Currently, there are 10 public and 16 private universities in addition to numerous community colleges (Carl, 2007).

The number of public universities as a result has reached (10), besides (17) universities that are private and (51) community colleges, this is in addition to the World Islamic Sciences and Education University.

This progress in numbers of universities is accompanied by significant increase in number of students enrolled in these universities. The number of enrollment students in both public and private universities is estimated at nearly (240) thousand (World Bank 2010).

TABLE (2-2) STUDENT NUMBER DISTRIBUTION IN JORDANIAN UNIVERSITIES DURING ACADEMIC YEAR 2010-2011 IN DIFFERENT DEGREE LEVELS

University Name		Grand Total	B. A / B.Sc.	Higher Diploma	M.A / M.Sc.	Ph.D
The University of Jordan	Total	34859	30925	841	2313	780
	Female	22714	20543	551	1305	315
Yarmouk University	Total	32305	26649	1153	3719	784
	Female	18595	15711	905	1717	262
Mu'tah University	Total	15957	13994	240	1593	130
	Female	8255	7447	164	615	29
Jordan Uni. of Science & Tech.	Total	18069	16990	0	1072	7
	Female	10005	9476	0	524	5
The Hashemite University	Total	19503	18794	37	672	0
	Female	11790	11356	58	376	0
AL al-Bayt University	Total	11263	10449	79	735	0
	Female	6651	6283	57	311	0
AL-Balqa' Applied University	Total	31038	30235	0	803	0
	Female	17114	16759	0	355	0
AL-Hussein Bin Talal University	Total	7249	7232	17	0	0
	Female	3963	3947	16	0	0
Tafila Technical University	Total	5117	5117	0	0	0
	Female	2760	2760	0	0	0
German Jordanian University	Total	2156	1913	0	243	0
	Female	918	779	0	139	0

University Name		Grand Total	B. A / B.Sc.	Higher Diploma	M.A / M.Sc.	Ph.D
Amman Arab Uni. for Graduate Studies	Total	1399	436	0	548	415
	Female	510	192	0	203	115
Middle East Uni. for Graduate Stu.	Total	2134	1370	0	764	0
	Female	517	327	0	190	0
Jadara University	Total	2769	2485	0	284	0
	Female	930	848	0	82	0
Al - Ahliyya Amman University	Total	5692	5634	0	58	0
	Female	1593	1574	0	19	0
Applied Science Uni. (Private)	Total	7870	7828	0	42	0
	Female	2521	2511	0	10	0
Philadelphia University	Total	5313	5284	0	29	0
	Female	1293	1287	0	6	0
Al - Isra Private University	Total	5565	5565	0	0	0
	Female	1343	1343	0	0	0
University of Petra	Total	5763	5740	0	23	0
	Female	2359	2343	0	16	0
Al-Zaytoonah Private Uni. of Jordan	Total	8190	8153	0	37	0
	Female	3016	3000	0	16	0
Zarqa Private University	Total	6058	6058	0	0	0
	Female	2312	2312	0	0	0
Irbid National University	Total	3733	3733	0	0	0
	Female	1292	1292	0	0	0
Jerash Private University	Total	4466	4393	0	73	0
	Female	1531	1515	0	16	0
Princess Sumaya Uni. for Tech.	Total	1722	1676	0	46	0
	Female	675	663	0	12	0

University Name		Grand Total	B. A / B.Sc.	Higher Diploma	M.A / M.Sc.	Ph.D
Jordan Academy of Music	Total	121	121	0	0	0
	Female	61	61	0	0	0
Educational Sciences Faculty	Total	1050	1050	0	0	0
	Female	993	993	0	0	0
Jordan Applied University	Total	271	271	0	0	0
	Female	56	56	0	0	0
Ajloun National University	Total	491	491	0	0	0
	Female	169	169	0	0	0
Grand Total	Total	240123	222586	2367	13054	2116
	Female	123936	115547	1751	5912	726

- Ministry of higher education, 2011 university statistics

2.2.7 JORDANIAN UNIVERSITY RANKING

Despite the recent experiences of Jordanian universities in the international ranking, they have gained some of advance position relatively to other Arab world universities, for instance, University of Jordan gained the rank of 1310, also Jordan University of Science & Technology, gained the rank of 1594. The detailed information about the ranks of Jordanian universities internationally are illustrated in table (2-3).

TABLE (2-3) JORDANIAN UNIVERSITIES INTERNATIONAL RANKS

WORLD RANK	UNIVERSITY NAME	SIZE	VISIBILITY	RICH FILES	SCHOLAR
1310	University of Jordan	2166	5124	1096	706
1594	Jordan University of Science & Technology	3727	3376	2327	1581
1921	Hashemite University	5957	6873	3137	1208
3116	Al Balqa Applied University	3024	7148	5144	1977
3316	Yarmouk University	2642	5334	4454	2657
3879	Mutah University	9657	7139	6323	2040
4481	Princess Sumaya University for Technology	4740	6348	5109	3714
4809	Applied Science University	4787	5418	9083	4472
5233	German Jordanian University	9547	2871	8142	8237
5753	Al Al-Bayt University	4824	7496	2737	6053
8860	Arab Academy for Banking and Financial Sciences	11953	8615	10495	6828
9017	Al-Hussein bin Talal University	9879	7466	10488	9576
9101	Tafila Technical University	7906	10125	10466	6828
10436	Middle East University Jordan	12606	12426	7500	6053
10518	Al Isra Private University Amman	12356	9740	12315	8237
11317	Al-Ahliyya Amman University	4781	12428	11236	9576
11697	institute of Banking Studies	12743	10693	12786	9576
12849	Jordan Institute of Diplomacy	15437	10824	15598	9576
13133	New York Institute of Technology Amman	8814	11945	17631	9576
13424	Irbid National University	11750	11703	17631	9576
13836	Amman Arab University (1)	14310	11320	18143	9576
14089	Jadara University	14002	13813	13882	9576

14231	Jerash Private University	15332	13720	13616	9576
14389	Queen Noor Civil Aviation Technical College	17844	11373	17631	9576
14689	Al Zaytoonah University	11148	16440	7845	9576
14783	World Islamic Sciences and Education University	7722	15270	16170	9576
14980	Jordan Applied University College of Hospitality and Tourism Education	6839	15183	17303	9576
15102	Zarqa University	10366	16768	9512	9576
15748	Jordan Academy of Music Higher Institute of Music	18629	13335	17631	9576
16764	Ajloun National Private University	10830	17824	14240	9576

* http://www.webometrics.info/rank_by_country.asp?country=jo, (13.3.2012).

Four indicators were obtained from the quantitative results provided by the main search engines as follows:

1- Size (S). Number of pages recovered from Google (10%)

2- Visibility (V). The number of external links received (inlinks) multiplied by the referring domins for these inlinks, according to Majestic SEO historical data (50%).

3- Rich Files (R). After evaluation of their relevance to academic and publication activities and considering the volume of the different file formats, the following were selected: Adobe Acrobat (.pdf), Adobe PostScript (.ps & .eps), Microsoft Word (.doc & .docx) and Microsoft Powerpoint (.ppt & .pptx). These data were extracted using Google (10%).

4- Scholar (Sc). The data is a combination of items published between 2007 and 2011 included in Google Scholar and the global output (2003-2010) obtained from Scimago SIR (30%).

2.2.8 DIMENSIONS OF WEBSITE QUALITY ASSESSMENT

The websites are being used by organizations to achieve their goals and may have different roles such as a marketing or public relation (promotion) tool (Seo et al, 2008) Universities and faculties, as the leading scientific organizations have been at the forefront of online service provision. On-line access to transactions such as enrolment, course delivery, course support, and library lending are rapidly becoming standards within the sector. Many universities now offer web portals, which provide an integrated front end to information and applications for various stakeholder groups. Ensuring that these services meet quality requirements is essential to ensuring business operations and stakeholder satisfaction (Mary Tate et al, 2007).

Nielsen (1999) argues that quality is a pervasive set of attributes, while Aladwani & Palvia (2002) consider quality to be a complex thing and its measurement multidimensional in nature. Quality dimensions are hard to define and are influenced by, culture, participators and even time (Zhang & von Dran, 2002). DeLone & McLean's (2003) quality dimensions are informed by constructs that enable influences of any evaluation plan to be considered the following is the quality dimensions

- System Quality - refers to the elements of a system that affect the end user in the way they interact and use an e-commerce system. This is a basic dimension of any e-commerce evaluation.
- Information Quality - content is considered to be the most important element of websites (Turban & Gehrke, 2000) and is seen to be directly related to website success (Liu & Arnett, 2000). To encourage repeat visits, visitors need to be

provided with appropriate, complete and clear information (DeLone & McLean, 2003).

- Service Quality - was added to the updated D&M Success Model to acknowledge ecommerce use. The dimension allows for examination of the role of service provider within organisations. This is particularly important in the context of e-commerce where the end user is the customer and not the employee (DeLone & McLean, 2004). Consumers demand more service quality in the online environment (Werthner & Klein, 1999) although the service quality dimension is not well recognised in website evaluation literature.

2.2.9 SATISFACTION

During the last four decades, satisfaction has been considered as one of the most important theoretical as well as practical issues for marketers and customer researchers (Jamal, 2004). A broad definition of satisfaction is “perception of pleasurable fulfillment of a service, and loyalty as deep commitment to the service provider” (Oliver, 1999). According to (kotler, 2000:36) "satisfaction is a person's feeling of pleasure or disappointment resulting from comparing a product perceived performance or outcome in relation to his or her expectations".

Establishing and achieving customer's satisfaction is the main goal of businesses nowadays because there is a strong relationship between the quality of product or service, customer satisfaction and profitability (Fecikova, 2004). David et al. (1997) said" The quality of a customer’s experience with your e-business is dependent on thoughtful design, streamlined business processes, carefully respected policies, good customer service, and excellent execution"

McKinney et al. (2002) specified web satisfaction as impacted by information quality and system quality. They identified the dimensions for information quality (understandability, reliability, and usefulness) and system quality (access, usability, and navigation), and empirically validated the measures using both exploratory and confirmatory approaches.

2.3 THEORETICAL FRAMEWORK COMPONENT

According to the previous studies (Table 2-4), there are many factors that have a major impact on student satisfaction in Jordanian universities.

In this study, four main dimensions were defined by consulting jurors and according to previous studies that use these variables as most common variables:

1. **Information quality** is the output quality of an information system, which was measured in terms of accuracy, ease of understanding, usefulness, completeness, relevance and whether it was up to date (Liao et.al, 2006). A website with high information quality can help a business to deliver customized, innovative and value-added products/services to their customers (Chiu et al., 2005).

   Lee and Kim (2010) proposed characteristics for information quality such as content, accuracy, format, timeliness, and ease of use as the key factors affecting the systems satisfaction.

2. **System quality** is the processing quality of an information system, which was measured in terms of ease of use, functionality, availability, flexibility, reliability and response time (Shih, 2004). According to Cheung and Lee (2005) "System quality is a measure of the information processing system itself, and focuses on the

outcome of the interaction between the user and the system. The key capability of the Internet supports greater interactivity for consumers, and thus system quality is largely characterized by the interaction between consumers and the website".

System quality is driven by factors such as fast page loading, clear presentation, and simple, intuitive navigation (Cameron, 1999). While McKinney et al. (2002) empirically demonstrated that access, usability, and navigation are the three dimensions of system quality.

3. **User ability**: Users express their demands and preferences by interacting with both components, their skills can be identified as system use and information use skills (Tsakonas and Papatheodorou, 2006). A website is an interactive learning environment between customers and business. It is important to increase customers' abilities to learn how to browse and to find relevant information on the web (Liu and Arnett, 2000). Lee and Kim (2010) said that if the computing ability of the information system user is generally high, satisfaction with an information system can also be high, as the extraction and acceptance of information requirements are easy, and user participation can be actively achieved in the progress or use of system development, On the other hand, if the user lacks computing ability, satisfaction can also be low, as the user will tend to be reluctant to introduce the system, and there will be less system application planning.

4. **Educational services availability**: Student's satisfaction can be influenced by support services for system users. Service quality is the overall support delivered by the online service provider (DeLone & McLean, 2003). Pitt et al. (1995)

reported that service quality is an intangible measurement criterion associated with information systems. Service quality is a key determinant in differentiating service offers and building competitive advantages, since the costs of comparing alternatives are relatively low in online environments (Santos, 2003).

Parasuraman et al. (1985) define service quality in terms of the difference between expected and perceived service. They state: ‘‘the key to ensuring good service quality is meeting or exceeding what (customers) expect from the service’.

University portals provide many services like:

i. Registration service
ii. Email services
iii. Students' status system (grades, attendance record, Financial status)
iv. Research databases (online library service, international library services)
v. E-learning gateway (Class material and lecture notes.)
vi. Social media links and communities

2.4 Previous Studies

- Kuo et al (2005) in their study, titled "Measuring Users' Perceived Portal Service Quality", a multi-dimensional scale was developed to analyze user-perceived portal quality. The scale was developed to measure six dimensions of web quality: responsiveness, competence, quality of information, empathy, web assistance, and call-back systems. The results found that customer satisfaction is related to four factors: (1) empathy, (2) ease of use, (3) information quality, and (4) accessibility. Users perceived service quality as the most effective indicator to model portal customer satisfaction.

- (Lee et al, 2009) in their study entitled "Determinants Affecting User Satisfaction with Campus Portal Services in Korea". assessed the relationships between end-user satisfaction with campus portal services, and the degree of influence of this factor. In this study, user's satisfaction with campus portal services was determined by assessing end user satisfaction factors, in accordance with the method developed previously by Doll and Torkzadeh. Additionally, user ability, playfulness, design, and support service were established as preceding factors influencing user satisfaction. A survey was conducted with business school students of Sahmyook University in order to assess students' satisfaction and its factors relevant to campus portal services. The results of this study showed that user ability, playfulness, design, and support service influence user satisfaction.

- Liu et al (2009) conducted two studies theist employ exploratory factor analysis and confirmatory factor analysis to identify an instrument and to measure the service quality of general portals. The objective of the first study was to provide an initial assessment of the effectiveness of a service quality framework in the evaluation of general portals using an existing questionnaire developed for the evaluation of business portals, A total of 120 responses were collected, of which 91 were usable. In the second study, the refined instrument was used in a rigorous assessment of general portals; a questionnaire used. A total of 380 responses was collected, 330 were usable. The results indicated that the instrument is a four-factor model that includes adequacy of information, appearance, usability, and privacy and security; where only the first two factors are significantly associated with customer satisfaction. Also, it was noted that Web page appearance was not significant for business portals but was for general portals.

- Lee and Kim (2010) study aimed to analyze the student user's satisfaction of campus-wide information systems in Korean universities. The study tested a modified model developed based on previous literatures to measure student user satisfaction of the information systems. The results of this study showed that information and system satisfaction significantly affected the overall user satisfaction with campus-wide information systems.

- Urbach, et al (2010) studied the employee portal success to have a better understanding about it and investigate the success factors' regarding the industry differences, a theoretical model based on the DeLone and McLean IS Success Model was used, which considers the specific requirements of employee portals. Data in this study have been collected using more than 6,000 employee responses in 22 companies among different industries to discover that affect in specific industry, collaboration quality considered in this study as important success factor because of the significant influence on both use and user satisfaction while other dimensions factors didn't have significant influences on use and user satisfaction. The study's results indicate that, besides the factors contributing to the success of IS in general, other success dimensions – like the quality of the collaboration and process support – have to be considered when aiming for a successful employee portal.

- Yu-Hui (2011) took the initiative to explore the impact of a semester-long credit-bearing information literacy course on undergraduate students' perceptions and use of the University at Albany Libraries Web portal to investigate the effect of user education on the acceptance and use of academic library Web portals. Data were collected through two rounds of survey over a period of an academic semester. Results showed that the information literacy course positively influenced participants' of the Libraries Web portal in terms of perceived ease of use, information quality, system quality, and user satisfaction. In addition, statistically significant differences were not found in

the overall frequency and duration of use, but in other dimensions of use, namely purpose and task.

- Christy and Matthew (2011) identified important antecedents and consequences of user satisfaction with e-learning portals. The web-customer satisfaction model was extended by including the construct of intention to continue to use. This model was theoretically supported by expectation disconfirmation theory and was empirical evaluated by 504 students in a local university. Empirical findings demonstrated that the research model provided a relatively high explanatory power. Moreover, Results showed that:

1. Overall satisfaction with an e-learning portal positively affects Intention to Continue to Use.
2. Information satisfaction with an e-learning portal positively affects Overall Satisfaction with an e-learning portal.
3. System satisfaction with an e-learning portal positively affects Overall Satisfaction with an e-learning portal.

Table (2-4) Previous Studies

Research	Factors (Independent Variables)	Dependent Variables	Year	Author
Measuring Users' Perceived Portal Service Quality – an Empirical Study	1. empathy 2. ease of use 3. information quality 4. accessibility	User satisfaction	2005	Kuo, T.et al.
User Satisfaction From Commercial Web Sites: The Effect of Design and Use	1. user-based design 2. Web site usability	user satisfaction	2006	Zviran, M. et.al.
Determinants Affecting User Satisfaction with Campus Portal Services in Korea	1.User ability 2.Design 3.Playfulness 4. Support services	User satisfaction	2009	Lee, H S. et.al
Study of the Service Quality of General Portals	1. Usability 2. Privacy and security 3. Adequacy of information 4. Appearance	1. service quality of general portals 2. User satisfaction	2009	Liu C. T. et al
Student User Satisfaction with Web-based Information Systems in Korean Universities	1. Information satisfaction 2. System satisfaction	User satisfaction	2010	Lee and Kim
Industry-Specificity of Employee Portal Success: A Multi-Group Comparison	1. System Quality 2. Information Quality 3. Process Quality 4. Collaboration Quality 5. Service Quality	1. Use 2. User Satisfaction	2010	Urbach et al.
Testing of a Model Evaluating e-Government Portal Acceptance and Satisfaction	1. Information quality 2. system quality 3. perceived effectiveness 4. social influence	user satisfaction	2010	Lai, C, S, A, and Pires, G.
Undergraduates' Perceptions and Use of the University libraries Web portal	1. Ease of use 2. information quality 3. system quality	user satisfaction	2011	Yu-Hui C.
Antecedents and Consequences of User Satisfaction with an e-Learning Portal	1. Information Satisfaction 2. System Satisfaction	1. Overall Satisfaction 2. Intention to Continue to Use	2011	Christy M.K. and Matthew K.O.

CHAPTER 3

Methodology

3.1 Introduction

3.2 Methodology

3.3 Population and Sample

3.4 Tools and Data Collection

3.5 Statistical Treatment

3.6 Validity and Reliability

3.1 INTRODUCTION

This chapter will present detailed overview about how the research will be conducted, and which method and techniques will be implementing for conducting the research. This include: study methodology; study populations and samples; study tools and data collection; statistical treatment; reliability and validity.

3.2 METHODOLOGY

The researcher designed a survey to administer selected subjects. The purpose of the survey instrument is to collect data about the significant factors that influence student's satisfaction with university portal in Jordan. Moreover, statistical and analytical methods using regression and will be utilized to collect, analyze data and test hypotheses.

3.3 POPULATIONS AND SAMPLE

In this research the population was the students of Jordanian universities. A convenience sample of students was taken from Jordanian universities students of five universities. Convenience sample was choosen because it is easy to access, requiring little effort on the part of the researcher. Convenience sampling allows for the researcher to gather data even when facing obstacles. (Forzano & Gravetter, 2011).

While 500 questionnaires were distributed, 486 questionnaires returned, 14 questionnaires were excluded for being incompletely filled by respondents, and 472 questionnaires were used in the statistical analysis. Therefore, the return rate was 94.4%. The sample of Jordanian universities was (University of Jordan, Yarmouk University, Petra University, Middle East University, Zaytoonah University).

Table (3-1) shows how the students sample was distributed among Jordanian universities sample.

Table (3-1) Number of Students' Samples Among The Sample of Jordanian Universities

No.	University	Type	Distributed No.	Returned and valid No.	Percent retrieved	Percent from sample
1	University of Jordan	Government	100	93	96%	19.7%
2	Yarmouk University	Government	100	95	95%	20.1%
3	Petra University	Private	100	97	97%	20.6%
4	Middle east university	Private	100	98	98%	20.8%
5	Zaytoonah University	Private	100	89	89%	18.6%
Total	500	472	94.4%	100%		

The demographic characteristics of the survey are as shown in Table (3.2).

Table (3-2) Demographic Variables of Study Sample

No.	Variables	Categorization	Frequency	Percent
1	Gender	Male	244	51.7
		Female	228	48.3
2	Age	less than 21	199	42.2
		21 –25	245	51.9
		26 –30	21	4.4
		30 and more	7	1.5
3	Educational level	Diploma	12	2.5
		Bachelor	427	90.5
		High graduate	33	7.0
4	Faculty	Scientific	325	68.9
		Humanist	147	31.1

The results of descriptive analysis of demographic variables of respondents' members of the study sample in last table show that 51.7% of the study sample is male and 48.3% is

female. On the other side the 94.1% of the sample below 25 years, and about 31.1% are belong to Humanist faculties and more than 90% from the sample studies in the bachelor programs.

Table (3-3) Descriptive the technical skills variables of study sample

No.	Variables	Categorization	Frequency	Percent
1	Years of used computer	Less than 2 years	63	13.3
		2 – 4 years	92	19.5
		5 – 7 years	93	19.7
		More than 7 years	224	47.5
2	Computer skills	Low	11	2.3
		Good	122	25.8
		V. good	182	38.6
		Excellent	157	33.3
3	Years of used internet	Less than 2 years	62	13.1
		2 – 4 years	171	36.2
		5 – 7 years	149	31.6
		More than 7 years	90	19.1
4	Internet skills	Low	9	1.9
		Good	95	20.1
		V. good	206	43.6
		Excellent	162	34.4

Last table presents the results of descriptive analysis of technical skills and experience of respondents' members of the study sample. It is clear that 86.7% of the sample has more than 2 years of experience in using computer and 86.9% of them have more than 2 years

in using internet. Furthermore, 71.9 % of the sample has a very good or excellent computer skill and 34.4% of them have an excellent internet skill.

3.4 TOOLS AND DATA COLLECTION

The data collection, method of analysis and programs used in the current study are based on two sources:

1- Secondary sources: books, journals, articles thesis to write the theoretical framework of the study.

2- Primary source: a questionnaire was designed (Appendix #1) to understand the influence of each dimension of the theoretical model on user preferences.

After conducting a thorough review of the literature and previous studies, the researcher formulated the questionnaire instrument for this study. The questionnaire contained six sections as follows:

- Section one:

The demographic information was collected with closed-ended questions (gender, age, educational level, faculty, computer experience and skills, internet experience and).

- Section two:

This section measured the information quality through five dimensions and six items in Likert-type scale (content, accuracy, timeliness, usefulness, and usability).

In this section was to rely on Lee and Kim (2010), Urbach et al. (2010) and Kuo et al. (2005) to determine the influence of information quality on student satisfaction with universities portals in Jordan.

- Section three:

This section measured the system quality through five dimensions and seven items in Likert-type scale (design, navigation, support services, security& privacy, downtime).

In this section was to rely on Urbach et al. (2010), Lai, C. and Pires, G. (2010) to determine the influence of system quality on student satisfaction with universities portals in Jordan.

- Section four:

To measure the educational services availability by five dimensions and six items in Likert-type scale (registration service, e-mail services, students status system, research databases, e-learning gateway, social media links and communities).

This section relied on Lee et.al (2009) and Urbach et al. (2010) to determine the influence of educational services availability on student satisfaction with universities portals in Jordan.

- Sections five:

This section measured the user's ability through two dimensions and six items in Likert-type scale (computer skills, internet skills).

In this section was to rely on Zviran et.al (2006) and Lee et.al (2009) to determine the influence of user ability on student satisfaction with universities portals in Jordan.

- Section six:

  Four items in Likert-type scale measured the student's satisfaction with university portal in general.

3.5 STATISTICAL TREATMENT

The data collected from the responses of the questionnaire was used through Statistical Package for the Social Sciences (SPSS) version # 17.0 for analysis and conclusions. Finally, the researcher used the suitable Statistical methods that consist of:

- Cronbach Alpha (α) to test Reliability.
- Percentage and Frequency.
- Arithmetic Mean and Standard Deviation to answer the study questions.
- Simple regression.
- Relative importance, assigning based on following formulate:

$$Class\ Interval = \frac{Maximum\ class - Minimum\ Class}{Number\ of\ level}$$

$$Class\ Interval = \frac{5-1}{3} = \frac{4}{3} = 1.33$$

- The Low degree from 1- less than 2.33
- The Median degree from 2.33 – 3.66
- The High degree from 3.67 above.

3.6 VALIDITY AND RELIABILITY

3.6.1 VALIDATY

In order to test the questionnaire for clarity and to provide a coherent research questionnaire, a macro review that covered all the research constructs was accurately performed by academic reviewers – from Jordanian universities - specialized in Business Administration, Marketing, and Information technology. Some items were added based on their valuable recommendations .Some others were reformulated to become more accurate and that is expected therefore to enhance the research instrument. The academic reviewers are (8), see appendix #2.

3.6.2 RELIABILITY

Reliability refers to the degree to which data collection method or methods will yield consistent findings, similar observations or conclusions reached by other researchers or the amount of transparency in how sense was made from the raw data (Saunders et al., 2003).

The reliability analysis applied to the level of Cronbach Alpha (α) is the criteria of internal consistency which was at a minimum acceptable level (Alpha $\geq$ 0.60) suggested by (Sekaran, 2003).

The overall Cronbach Alpha (α) is (0.851) which are accepted results. The results of all parts were shown in table (3-4).

Table (3-4) Cronbach Alpha (α) value for questionnaire items

Dimensions	Cronbach Alpha (α)
Information quality	0.680
System quality	0.707
Educational services availability	0.688
User ability	0.749
Student satisfaction	0.799
All Questions	0.851

Chapter 4

Results and Hypothesis Testing

4.1 Introduction

4.2 Answers of Questions

4.3 Hypothesis Testing

4.1 INTRODUCTION

This chapter describes the results of the statistical analysis of the data collection for research question and research hypothesis.

The data analysis includes a description of the means and standard deviations for questionnaire results to answer study questions and test study hypotheses.

4.2 ANSWERS OF QUESTIONS

1. What are the major factors that drive student's satisfaction with university portal in Jordan?

2. How much do these factors influence student's satisfaction?

To answer these questions the researcher uses the arithmetic mean, standard deviation, item importance (rank) and importance level.

Table (4-1) Arithmetic means and standard deviations for the responses of the study sample to the variable information quality

Items	Means	STD	Rank	Level of importance
Content of the available information meets my needs	4.57	0.63	1	High
Available information are rich with details	4.53	0.63	3	High
Electronic portal provides information related to reality	4.48	0.78	4	High
Electronic portal provides up to date information	4.48	0.75	5	High
Information displayed in the portal are useful to students	4.57	0.67	2	High
Portal is easy to use (compatible with the abilities of students)	3.75	1.11	6	High
General Arithmetic mean and standard deviation	4.40	0.52		

Table (4-1) shows the level of importance of information quality, where the arithmetic means ranges between (3.75- 4.75) comparing with general arithmetic mean amount of (4.40). We observe that the high mean was to item "Content of the available information meets my needs" with arithmetic mean (4.57) and standard deviation (0.63). While the lowest arithmetic mean was to item "Portal is easy to use (compatible with the abilities of students)" with average (3.75) and standard deviation (0.11). In general the important level of information quality was high.

Table (4-2) Arithmetic means and standard deviations for the responses of the study sample to the variable system quality

Items	Means	STD	Rank	Level of importance
Portal looks attractive appearance where the use of color and the font correctly in this portal	4.06	0.94	2	High
Was arranged to move from page to page through the gate in an orderly and easy, where the information was classified into specific categories and in a simple way	4.05	0.98	3	High
All the available services is effective	3.52	1.06	7	Medium
It is easy to find the services	3.88	0.88	4	High
The personal information is secure	4.22	0.75	1	High
Web pages loaded quickly	3.64	1.05	6	Medium
Portal is available all the time	3.67	1.11	5	High
General arithmetic mean and standard deviation	3.86	0.58		

Table (4-2) shows the level of importance of system quality, where the arithmetic means range between (3.52- 4.22) comparing with general arithmetic mean amount of (3.86). We observe that the high mean was to item "The personal information is secure" with arithmetic mean (4.22) and Standard deviation (0.75). While the lowest arithmetic mean was to item "All the available services is effective" with Average (3.52) and standard deviation (2.06). In general the important level of System quality was high.

Table (4-3) Arithmetic means and standard deviations for the responses of the study sample to the variable educational services availability

Items	Means	STD	Rank	Level of importance
Registration service provided by the portal reduce time and effort on the student	4.34	0.95	1	High
I feel good about programs and the basic information provided by the portal for the students in the academic process	4.06	1.00	2	High
Portal contains an electronic library to help students in the Scientific Research	3.72	1.08	4	High
Portal contains an e-learning management system	3.28	1.15	6	Medium
The portal linked with social networks	3.42	1.09	5	Medium
The portal provide e-mail service to the students	3.86	0.97	3	High
General arithmetic mean and standard deviation	3.78	0.65		

Table (4-3) shows the level of importance of educational services availability, where the arithmetic means ranges between (3.28- 4.34) comparing with general arithmetic mean amount of (3.78). We observe that the high mean was to item "Registration service provided by the portal reduce time and effort on the student" with arithmetic mean (4.34) and standard deviation (0.95). While the lowest arithmetic mean was to item "Portal contains an e-learning management system" With Average (3.28) and standard deviation (1.15). In general the important level of educational services availability was high.

Table (4-4) Arithmetic means and standard deviations for the responses of the study sample to the variable user ability

Items	Means	STD	Rank	Level of importance
I have the ability to browse a Website	3.84	0.67	4	High
I have the ability to carry out basic research on the Internet	3.70	0.85	5	High
I have the ability to download programs from the Internet and save it on a computer	3.93	0.83	2	High
I have the ability to use basic computer parts	3.55	0.93	6	Medium
I have the ability to use the basics of the Windows operating system	3.90	0.87	3	High
When I am having a problem with my computer I can fix it with myself	4.07	0.82	1	High
General arithmetic mean and standard deviation	3.83	0.52		

Table (4-4) shows the level of importance of user's ability, where the arithmetic means ranges between (3.55- 4.07) comparing with general arithmetic mean amount of (3.83). We observe that the high mean was to item "When I am having a problem with my computer I can fix it with myself" with arithmetic mean (4.07) and standard deviation (0.82). While the lowest arithmetic mean was to item "I have the ability to use basic computer parts" With Average (3.55) and Standard deviation (0.93). In general the important level of user's ability was high.

Table (4-5) Arithmetic means and standard deviations for the responses of the study sample to the variable Student satisfaction

Items	Means	STD	Rank	Level of importance
I feel satisfy with the quality of information provided through the university portal	3.90	0.93	1	High
I feel satisfy with the quality of university portal system	3.80	0.90	2	High
I feel satisfy with the educational services provided through the university portal	3.62	1.05	3	Medium
I advice my colleagues to use the electronic portal continuously	3.54	1.08	4	Medium
General arithmetic mean and standard deviation	3.71	0.78		

Table (4-5) shows the level of importance of student's satisfaction, where the arithmetic means ranges between (3.54- 3.90) comparing with general arithmetic mean amount of (3.71). We observe that the high mean was to item "I feel satisfy with the quality of information provided through the university portal" with arithmetic mean (3.90) and standard deviation (0.93). While the lowest arithmetic mean was to item "I advice my colleagues to use the electronic portal continuously" With Average (3.54) and standard deviation (1.08). In general the important level of student's satisfaction was high.

4-3 HYPOTHESES TESTING

The researcher, in this side tested the main hypothesis. Through Simple Liner, Multiple Regression analysis with (T) test using ANOVA table. As follows:

Ho1: There is no statistically significant effect for information Quality on user satisfaction with university portal services in Jordan at level ($\alpha \leq 0.05$).

To answer this hypotheses simple regression was used and the following tables show the result

Table (4-6) Model summery for information Quality on user satisfaction

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.063(a)	.004	.002	.78274
(a) Predictors: (Constant), info _quality				

Table (4-7) simple regression (R) coefficients for information Quality on user satisfaction

ANOVA(b)						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.134	1	1.134	1.851	.174(a)
	Residual	287.959	470	.613		
	Total	289.093	471			
(a) Predictors: (Constant), info _quality (b) Dependent Variable: student satisfaction						

Coefficients(a)						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	3.299	.307		10.734	.000
	Info_quality	.094	.069	.063	1.361	.174
(a) Dependent Variable: student satisfaction						

As it is noticed in tables (4-6) and (4-7) the simple regression (R) coefficients for information Quality on user satisfaction is (0.063) (F = 1.851, D.F. 1 470, Prob = 0.17), which indicates insignificant effect of the predicting variable (information quality) on the dependent variables (user satisfaction). The null hypothesis was accepted which state:

There is no statistically significant effect for information Quality on user satisfaction with university portal services in Jordan at level ($\alpha \leq 0.05$).

Ho2: There is no statistically significant effect for system quality on user satisfaction with university portal services in Jordan at level ($\alpha \leq 0.05$).

To answer this hypothesis simple regression was used and the following tables shows the result

Table (4-8) Model summary for system Quality on user satisfaction

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.433(a)	.187	.185	.70707
(a) Predictors: (Constant), System quality				

Table (4-9) simple regression (R) coefficients for system Quality on user satisfaction

ANOVA(b)						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	54.115	1	54.115	108.239	.000(a)
	Residual	234.979	470	.500		
	Total	289.093	471			
(a) Predictors: (Constant), System quality (b) Dependent variable: student satisfaction						

Coefficients(a)						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	1.474	.218		6.771	.000
	Sys_quality	.580	.056	.433	10.404	.000
(a) Dependent variable: student's satisfaction						

As its notice in tables (4-8) and (4-9) the simple regression (R) coefficients for system Quality on user satisfaction is (0.433) (F = 10823, D.F. 1 470, Prob ≤ 0.01), which indicates significant effect of the predicting variable (system quality) on the dependent variables (user satisfaction). The null hypothesis was rejected and the alternative hypothesis was accepted which state:

There is statistically significant effect for system Quality on user's satisfaction with university portal services in Jordan at level ($\alpha \leq 0.05$).

Ho3: There is no statistically significant effect for user ability on user satisfaction with university portal services in Jordan at level ($\alpha \leq 0.05$).

To answer this hypothesis simple regression was used and the following table shows the result

Table (4-10) Model summary for user ability on user satisfaction

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.424(a)	.179	.178	.71047
(a) Predictors: (Constant), user's ability				

Table (4-11) simple regression (R) coefficients for user ability on user's satisfaction

ANOVA(b)						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	51.851	1	51.851	102.721	.000(a)
	Residual	237.242	470	.505		
	Total	289.093	471			
(a) Predictors: (Constant), user ability (b) Dependent variable: student satisfaction						

Coefficients(a)						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	1.255	.245		5.123	.000
	User ability	.642	.063	.424	10.135	.000
(a) Dependent variable: student satisfaction						

As it is noticed in tables (4-10) and (4-11) the simple regression (R) coefficients for user's ability on user's satisfaction is (0.424) (F = 102.72, D.F. 1 470, Prob $\leq$ 0.01), which indicates significant effect of the predicting variable (user ability) on the dependent variables (user satisfaction).

The null hypothesis was rejected and the alternative hypothesis was accepted which state:

There is statistically significant effect for user ability on user satisfaction with university portal services in Jordan at level ($\alpha \leq 0.05$).

Ho4: There is no statistically significant effect for educational services availability on user satisfaction with university portal services in Jordan at level ($\alpha \leq 0.05$).

To answer this hypothesis simple regression was used and the following table shows the result

Table (4-12) Model summary for educational services availability on user satisfaction

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.534(a)	.285	.283	.66327
(a) Predictors: (Constant), Edu.services				

Table (4-13) simple regression (R) coefficients for educational services availability on user satisfaction

ANOVA(b)						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	82.324	1	82.324	187.129	.000(a)
	Residual	206.769	470	.440		
	Total	289.093	471			
(a) Predictors: (Constant), Edu.services (b) Dependent variable: student satisfaction						

Coefficients(a)						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	1.292	.180		7.194	.000
	Edu.services	.641	.047	.534	13.680	.000
(a) Dependent variable: student satisfaction						

As it is noticed in tables (4-12) and (4-13) the simple regression (R) coefficients for education services availability on user satisfaction is (0.534) (F = 187.129, D.F. 1 470, Prob $\leq$ 0.01), which indicates significant effect of the predicting variable (education services availability) on the dependent variables (user satisfaction). The null hypothesis was rejected and the alternative hypothesis was accepted which state:

There is statistically significant effect for education services availability on user satisfaction with university portal services in Jordan at level ($\alpha \leq 0.05$).

Chapter 5

Results Discussion, Conclusion and Recommendation

5.1 Summary of Results

5.2 Results of Discussion

5.2 Conclusion

5.3 Recommendations

5.1 SUMMARY OF RESULTS

The current study posed a set of questions, placing the hypotheses and their relation to the impact within the study variables. The study revealed many results that contributed to solving the study's problem described in chapters (1-2), answering the questions and hypotheses of the study. The main results are:

1- There is no statistically significant effect for information quality (content, accuracy, timeliness, usefulness, and usability) on user's satisfaction with university portal services in Jordan at level ($\alpha \leq 0.05$).

2- There is statistically significant effect for system quality (design, navigation, support services, security & privacy, downtime) on user's satisfaction with university portal services in Jordan at level ($\alpha \leq 0.05$).

3- There is statistically significant effect for user's ability (Computer skills, internet skills) on user's satisfaction with university portal services in Jordan at level ($\alpha \leq 0.05$).

4- There is statistically significant effect for education services availability (Registration service, Email services, Student's status system, research databases, E-learning gateway and social media links and communities) on user's satisfaction with university portal services in Jordan at level ($\alpha \leq 0.05$).

5- In the last part of questionnaire (Do you want to add any other comments?), the researcher got some important comments like:

   a. I want to choose the color, font and theme of my page on the electronic portal

   b. The most important service that should be available is online registration (From the viewpoint of this student); however, it doesn't work. In Zaytoonah University they still use the traditional way to perform the registration process.

5.2 RESULTS DISCUSSION

On the basis of the results, the researcher concludes with the following points.

1. Educational services availability got the highest impact on user's satisfaction in Jordanian universities, this proves the important level of educational services, and supports. (Santos, 2003) said that service quality is a key determinant in differentiating service offers and building competitive advantages, since the costs of comparing alternatives are relatively low in online environments. This result can lead us to conclude that students in institutions of higher education in Jordan need to access and manage electronic data. They need to reduce time and cost by receiving the best services provided by universities.

2. The statistical results show a significant effect for system quality on user's satisfaction in Jordanian universities. Studies like Lee and Kim (2010), Urbach et al.(2010) and Lai and Pires (2010) have all ended with the same results. In this study, system quality was measured by using the following items: design,

navigation, support services, security& privacy, downtime, where the support services effectiveness have the lowest satisfaction for students. It found that most services in the electronic portals are not effective.

3. Information quality doesn't significantly influence user's satisfaction with university portal services in Jordan. This result was harmonized with studies like Urbach et al. (2010), but it disagreed with Lee and Kim (2010), Lai and Pires (2010), Cheung and Lee (2005) and Kuo et al. (2005). This may be explained by assuming that, students are interested in performing certain tasks like registration and obtaining marks and attendance record, while certain information only gathered through the portal. This result demonstrate that the web content should be personalized, complete, useful, easy to understand and accurate to make a positive influence on student's satisfaction. However, further studies in the future may investigate this result.

4. The statistical results show a significant relation between user's ability and user's satisfaction in Jordan universities. Studies like Lee et.al (2009) have ended with the same results. We can conclude that if the users have a generally high ability in using computers and internet, satisfaction with a system can also be high because they will accept the system's requirement easily, on the other hand, if the users lack the basic requirement of using computers and internet, satisfaction can be low due to difficulty in introducing the system and interacting with system applications.

5. Students in Jordanian universities are interested in personalization, by having the right of change the colors, fonts and themes. they want to interact with their web pages and be more flexible

5.3 CONCLUSIONS

In this study, the researcher evaluated the relationship between student's satisfaction with university portal services; System quality, user's ability and educational services availability were established as factors that affect student's satisfaction in Jordanian universities, while, information quality does not significantly influence student's satisfaction.

Our findings demonstrate that the students will be satisfied if the system output is friendly secure, easy to use and visibly attractive to the users. It should be compatible with different levels of ability of the users. Also, the students will be satisfied depending on the quality and availability of services provided by universities.

Educational service availability is the most effective factor that influences student's satisfaction with universities portal in Jordan. They will be more satisfied if the portal meet their needs. This will greatly improve the efficiency of universities which actively seek ways to improve their portal service.

Students' ability to use university portal services influences user's satisfaction. User's satisfaction will increase if the user can perform the necessary work more effectively.

5.4 RECOMMENDATIONS

On the basis of study results and researcher conclusions, he suggests the following recommendations to meet the study objectives:

1- Jordan universities should pay an exceptional attention to develop their electronic portals that can provide their students with sufficient information which put them on the track with any new information or event.

2- Universities should think seriously about the personalization in their web portal, which can offer a competitive advantage to attract new students and to satisfy the current students.

3- Responsible parties in the universities should check the availability of its services periodically, and activate all services in the electronic portal like attendance record, reservation, syllabus, financial status and E-mail services.

4- This study was conducted using university students as the main end users of university portal services; further studies in the future may consider other parties like graduate students, administration staff, professors, and lecturers.

5- In this study system quality, user's ability and educational services availability were established as factors influencing user's satisfaction with university portals in Jordanian; further studies in the future may look for other factors affecting user's satisfaction.

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APPENDIX #1: THE QUESTIONNAIRE

جامعة الشرق الأوسط للدراسات العليا

عمَان – الأردن

استبانة

أخي الطالب ... أختي الطالبة ...

تحية طيبة وبعد..

يقوم الباحث بإجراء دراسة بعنوان (محددات رضا الطلاب عن خدمات البوابات الالكترونية الجامعية في الأردن) لإستكمال متطلبات الحصول على درجة الماجستير في إدارة الأعمال الالكترونية في جامعة الشرق الأوسط.

و ذلك بهدف استطلاع رضا الطلاب على بوابة الجامعة الالكترونية و تحديد العوامل المؤثرة في رضا الطلاب, و يتوقع الباحث ان تعود هذه الدراسة بالفائدة على الجامعات الأردنية.

أرجو التكرم بالإجابة على كل فقرة من فقرات الاستبيان، بكل دقة وموضوعية، علماً بأن المعلومات التي ستدلي بها، ستعامل بسرية تامة، ولن تستخدم إلا لأغراض البحث العلمي فقط ..

و لكم جزيل الشكر ..

الباحث: محمد خليل عامر

جامعة الشرق الأوسط للدراسات العليا

Email: dr_moh_amer77@hotmail.com

Tel: 0788852569

البيانات الشخصية : *ضع اشارة √ عند الاجابة التي تراها مناسبة* (اختر اجابة واحدة فقط)

1 - الجنس:

☐ ذكر ☐ انثى

2 - العمر:

☐ اقل من 21 سنة ☐ 21 – 25 سنة ☐ 26 – 30 سنة ☐ اكثر من 30 سنة

3 - المؤهل العلمي:

☐ دبلوم ☐ بكالوريوس ☐ ماجستير او اعلى

4 - التخصص الاكاديمي:

☐ علمي ☐ انساني

5 - سنوات الخبرة في استخدام الكمبيوتر :

☐ اقل من سنتين ☐ 2 – 4 سنوات ☐ 5 – 7 سنوات ☐ اكثر من 7 سنوات

6- مهارات استخدام الحاسوب:

☐ ضعيف ☐ جيد ☐ جيد جدا ☐ ممتاز

7 - سنوات الخبرة في استخدام الانترنت:

☐ اقل من سنتين ☐ 2 – 4 سنوات ☐ 5 – 7 سنوات ☐ اكثر من 7 سنوات

8- مهارات استخدام الانترنت:

☐ ضعيف ☐ جيد ☐ جيد جدا ☐ ممتاز

9 - اسم الجامعة التي تدرس بها ؟ .....

حدد مدى رضاك عما يلي:

ضع اشارة √ عند الاجابة التي تراها مناسبة (اختر اجابة واحدة فقط)

الرقم	العامل	موافق بشدة	موافق	محايد	غير موافق	لا اوافق ابدا
أولا : جودة المعلومات						
1	محتوى المعلومات المتوفرة يلبي احتياجاتي					
2	المعلومات المتوفرة غنية بالتفاصيل					
3	البوابة الالكترونية توفر معلومات لها صلة بالواقع					
4	يتم تحديث معلومات البوابة بأسرع وقت ممكن					
5	المعلومات المعروضة في البوابة الالكترونية تعود بالفائدة على الطلاب					
6	البوابة الالكترونية سهلة الاستخدام (تتناسب مع قدرات الطلاب)					
ثانيا : جودة النظام						
1	البوابة الالكترونية تبدو جذابة المظهر حيث تم استخدام الألوان و الخط بشكل صحيح في هذه البوابة					
2	تم ترتيب الانتقال من صفحة الى اخرى خلال البوابة بشكل منظم و سهل حيث تم تصنيف المعلومات ضمن فئات محددة و بشكل بسيط					
3	كل الخدمات المتوفرة فعاله و ليست معطلة					
4	يتم العثور على هذه الخدمات بسهولة					
5	السرية محفوظة و محمية والبيانات الشخصية آمنة					
6	يتم تحميل صفحات الويب بشكل سريع					
7	تكون البوابة متاحة طوال الوقت					
ثالثا : الخدمات التعليمية المتاحة						
1	خدمة التسجيل عن طريق البوابة توفر الوقت و الجهد على الطالب					
2	اشعر بالرضا عن البرامج و المعلومات الاساسية التي توفرها البوابة للطالب في العملية الاكاديمية (مثل نظام التسجيل الالكتروني : نتائج المواد, عدد ايام الغياب, كشف العلامات الفصلية)					
3	تحتوي البوابة على مكتبة الكترونية تساعد الطلاب في عملية البحث العلمي (مكتبات الكترونية عالمية و دوريات علمية)					
4	تحتوي البوابة على نظم إدارة التعليم عن طريق الانترنت (مثل ملخص المادة, الواجبات المنزلية, معلومات المحاضر, ملخصات المواد)					
5	ترتبط البوابة بشبكات التواصل الاجتماعي					
6	توفر البوابة خدمة البريد الالكتروني للطلاب					

الرقم	العامل	موافق بشدة	موافق	محايد	غير موافق	لا اوافق ابدا
رابعا : قدرة المستخدم						
1	لدي القدرة على تصفح موقع الكتروني					
2	لدي القدرة على القيام بعمليات البحث الأساسية على شبكة الإنترنت					
3	لدي القدرة على تحميل البرامج من الإنترنت وحفظها على جهاز كمبيوتر					
4	لدي القدرة على استخدام أجزاء الكمبيوتر الأساسية					
5	لدي القدرة على استخدام أساسيات نظام التشغيل Windows					
6	عندما تواجهني مشكلة مع جهاز الكمبيوتر أستطيع أن اصلحها بنفسي					
خامسا : رضا الطالب عن البوابة الالكترونية بشكل عام						
1	اشعر بالرضا عن جودة المعلومات المقدمة من خلال البوابة الالكترونية الجامعية					
2	اشعر بالرضا عن جودة النظام للبوابة الالكترونية الجامعية					
3	اشعر بالرضا عن الخدمات التعليمية المقدمة من خلال البوابة الالكترونية الجامعية					
4	اقوم بإقناع زملائي لإستخدام البوابة الالكترونية بإستمرار					

هل تريد إضافة أي ملاحظات أخرى ؟

APPENDIX# 2: JUROR'S QUESTIONNAIRE

No.	Prof. name	University	Faculty
1	Ashraf Bany Mohammad	Middle East University	Computer information system
2	Ziad Alfawaer	Middle East University	Computer information system
3	Mohammed Alnuaimi	Middle East University	Electronic Business
4	Anbar Ibrahim Shlash	Petra University	Marketing
5	Ihab Magableh	German Jordanian University	Business administration
6	Omar Alhajran	Princess Sumaya University for Technology	Business administration
7	Mohammad Alshoura	Middle East University	Marketing
8	Najim Alazzawi	Middle East University	Business administration