



The Impact of the E-Service Quality of Online Databases on Users' Behavioral Intentions: A Perspective of Postgraduate Students

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ABSTRACT

This study aimed to explore the impact of the e-service quality (E-SQ) of the online academic databases offered in the Jordanian academic institutions on end users' behavioral intentions. To do that, the current study employed a quantitative survey approach to test a set of hypotheses and answer the research questions. This study implemented the convenience sampling technique to select a representative sample of postgraduate students at Jordanian public and private universities. Two hundred and eighty questionnaires were distributed, 230 questionnaires were completed, and 50 questionnaires were excluded. The findings of the study showed that only four dimensions of E-SQ (ease of use, website design, security, and reliability variables) have a positive impact on users' satisfaction. The results also showed that five dimensions of E-SQ (ease of use, security, reliability, website design, and responsiveness) have a positive impact on users' behavioral intentions. Furthermore, the results demonstrated that users' satisfaction has a positive impact on users' behavioral intentions. The study also concluded that user satisfaction has mediated partially the impact of E-SQ on behavioral intention in the online database setting.

Keywords: E-service Quality, Users' Satisfaction, Users' Behavioral Intentions, Academic Online Data Bases

JEL Classifications: M1, M3, M31

1. INTRODUCTION

The world has recently seen huge developments in economic, political, social, and educational environments. E-learning resources form one of the new, vital educational trends in our contemporary life. Resources such as e-books, e-articles, e-theses, and online academic databases represent important examples of modern educational materials (Swain and Panda, 2009). Moreover, e-learning resources, particularly online academic databases, have become an essential source of information (Nikam and Pramodini, 2007). Accordingly, there has been an increasing demand for e-learning resources and online academic databases to support research and learning (Kim, 2005).

In the light of the preceding discussion, there is the utmost need for understanding how online academic databases are perceived by end users and what factors affect the users' behavioral intentions.

In addition, understanding the factors that influence users' satisfaction of online academic databases can help providers and administrators of such databases in creating a better fit between a system's design and users' characteristics and needs (Nov and Ye, 2008). In this regard, most Jordanian public and private universities currently provide access to online academic databases for students and staff to support teaching and researching. Therefore, a better understanding of the determinants and characteristics of the online academic databases' usage will have meaningful managerial implications. This understanding can provide insights into ways practitioners can facilitate and encourage usage of such databases in the Jordanian setting.

Accordingly, the main purpose of this study is to test factors affecting users' behavioral intentions of online databases by using e-service quality (E-SQ) as a theoretical model. In other words, the present study aims to confirm and explore whether the concept

of E-SQ contributes to users' improved satisfaction and positive behavioral intentions. In this regard, Zeithaml et al. (2000, p. 11) define E-SQ as "the extent to which a website facilitates efficient and effective shopping, purchasing, and delivery of products or services." Moreover, Santos (2003, p. 235) defines E-SQ as "the consumers' overall evaluations and judgments of the excellence and the quality of e-service offerings in the virtual marketplace."

The present study aims to evaluate the E-SQ of the academic databases offered in the Jordanian Academic Institutions and its influence on users' behavioral intentions. To do that, the present study aims to achieve the following objectives: (1) To measure the end users' perception of E-SQ of online academic databases by using the Jordanian perspective; (2) to address the impact of E-SQ of online academic databases on end users' satisfaction in the Jordanian setting; (3) to explore the impact of the E-SQ of online academic databases on the end users' behavioral intentions in the Jordanian setting; and (4) to determine whether end users' satisfaction mediates the impact of the E-SQ of online academic databases on end users' behavioral intentions in the Jordanian setting.

2. LITERATURE REVIEW

Several previous empirical studies have addressed the topic of electronic resources and online academic databases. For instance, Rittberger and Rittberger (1997) highlighted five key features of high-quality academic online databases: Scope and coverage of the subject area (content), comprehensiveness, timelines, accuracy, and consistency. Thong et al. (2004) identified nine other important factors that play a significant role in encouraging and increasing users' acceptance of digital libraries. Those factors are terminology, screen design, navigation, relevance, system accessibility, system visibility, computer self-efficacy, computer experience, and domain knowledge. Also, Saracevic (2004) provided an overview for evaluating digital libraries by identifying their most important criteria, including usability, system features, and usage.

In terms of the impact of interface characteristics on digital library usage, Lee et al. (2005) found that interface characteristics have a significant impact on postgraduate students. Vaidyanathan et al. (2005) also tried to understand the users' perception and their acceptance of digital libraries. They used five individual and system components to explore individual user acceptance of a digital library. The results revealed that search function, screen design, navigation, and system reliability have significant effects on perceived ease of use and usefulness, which in turn have a significant effect on individual user acceptance of digital libraries. Liu (2006) explored the extent to which graduate students in a metropolitan university's setting use print and/or electronic resources. Liu's study found that 51.9% of all respondents turn first to online information resources (e.g. e-journals). Liu's findings confirm the idea that the characteristics of electronic resources, such as convenient access and ease in searching are the key factors in selecting the electronic resources.

Kim (2006) conducted a study to determine the factors that affect users' acceptance of web-based subscription databases and had

as a subject undergraduate students who have experience using web-based subscription databases. Kim's findings indicate that terminology clarity and accessibility were the most important determinants for online database usage. In a study conducted by Xie (2006) to find what the most important criteria that users identify for the evaluation of digital libraries, it was found that usability, such as search, navigation, view, output, accessibility, and collection quality (i.e., content in general) were the most important criteria for evaluating digital libraries. By using another perspective, Garibay et al. (2010) proposed a combination of the quality function deployment method and the Kano model as a useful tool to evaluate the service quality of a digital library. This study found that the three top customer requirements for quality in a digital library are coverage, quality of contents, and website organization.

Furthermore, Jeong (2011) explored the understanding of e-library usage and e-library acceptance behaviors by using the Technology Acceptance Model (TAM) as a theoretical framework. The results of his study found three things: First, interface characteristics indirectly influence the perceived usefulness via the perceived ease of e-library system use; second, system characteristics directly influence the perceived usefulness of e-library systems; and third, system quality positively influences both perceived usefulness and the perceived ease of e-library system use. It is interesting to note that apart from the literature specifically about online databases, there are a good amount of relevant papers concerning the users' perceptions of E-SQ, dimensionality of E-SQ, and the impact of these dimensions on customers' behavioral intentions in some other sectors. Ibrahim et al. (2006), for instance, explored the key factors of UK banking customers' perceptions of E-SQ and evaluated customers' perceptions of some identified dimensions of E-SQ. Ibrahim's study revealed some new dimensions on the issue, including the provision of convenient and accurate e-banking operations; the accessibility and reliability of service provision; good queue management; service personalization; the provision of friendly and responsive customer service; and the provision of targeted customer service. Ho and Lee (2007) identified five other components of e-travel service quality, namely information quality, security, website functionality, customer relationships, and responsiveness. The study found that the e-travel quality service scale has a strong predictive capability in relation to online customer satisfaction and loyalty intention.

Yen and Lu (2008) discussed the E-SQ concept and factors influencing an individual's loyalty intention towards online auctions. Their findings showed that E-SQ, including efficiency, privacy protection, contact, fulfillment, and responsiveness, has statistically significant influences on buyer's disconfirmation. In the Jordanian banking setting, Al-Tarawneh (2012) identified reliability, responsiveness, ease of use, personalization, security, and website design as core dimensions of customers' perceptions of E-SQ. Al-Nasser et al. (2013) also used a quantitative research design to determine E-SQ and its effect on consumers' perceptions of trust in the online shopping context. His study found that E-SQ strongly and positively affected consumer trust in online shopping.

In summary, it is clear from the preceding discussions that the relevant literature focused on understanding the technical characteristics of digital libraries, acceptance, usage, and perception of online databases. Moreover, the previous literature tackled the impact of E-SQ and users' satisfaction and behavioral intentions in several different industries (e.g., retail, banking, and travel). However, it is obvious that no empirical study (according to the authors' knowledge) has explored the relationship between E-SQ and its generic dimensions and users' behavioral intentions in the domain of online academic databases. In other words, although the relationship between E-SQ and users' behavioral intentions was addressed and examined in the other online service domains (e.g., online shopping, online banking), more work was still needed to address this area of research in this unique setting. This study provides a new approach to evaluating the online academic databases by using the E-SQ dimensions as a theoretical model and base. Accordingly, the ultimate objective of this study is to identify the impact of the E-SQ dimensions of online databases on users' satisfaction and behavioral intentions and to understand how these dimensions can influence users' satisfaction and behavioral intentions in the Jordanian setting. For this reason, this study aims to answer the following questions: (1) What are the users' perceptions of the E-SQ dimensions? (2) What is the impact of E-SQ on users' satisfaction and behavioral intentions? And (3) is there any direct or indirect impact of E-SQ on users' intentions?

2.1. Research Model and Hypothesis Development

This study employs the E-SQ dimensions identified by Ladhari (2010) as a research model to visualize the relationship between E-SQ, users' satisfaction, and behavioral intentions as shown in Figure 1.

In order to explain the above research model, this paper developed some hypotheses that illustrate the following linkages between the study's variables:

2.2. The Link between E-SQ and Users' Satisfaction

The link between E-SQ and customers' satisfaction is a well-established research topic. Several previous studies have examined the impact and relationship between these two concepts in online contexts; for instance, Lee and Lin (2005) found that the dimensions of E-SQ affect customers' satisfaction. Moreover, Herington and Weaven (2009) identified a positive link and impact between the E-SQ and customers' satisfaction. In addition, other research confirmed that the E-SQ influences satisfaction (Lee and

Lin, 2005; Collier and Bienstock, 2006; Cristobal et al., 2007; Ho and Lee, 2007; Wang et al., 2007; Saha et al., 2010; Goh et al., 2012; Moon, 2013). Accordingly, the current study assumes:

Hypothesis 1: There is a positive impact of E-SQ on users' satisfaction.

2.3. The Link between E-SQ and Users' Behavioral Intentions

The relationship between E-SQ and users' behavioral intentions has also been examined in numerous studies (e.g. Zeithaml, 2000; Santos, 2003; Keum and Cho, 2003; Collier and Bienstock, 2006; Carlson and O'Cass, 2010; Gounaris et al., 2010, Lien et al., 2011; Gera, 2013). These studies have indicated that high E-SQ increases consumers' behavioral intentions, such as to revisit the website, purchase products or services from the website, and provide positive word-of-mouth recommendations, and reduces the likelihood of consumers switching to a competitor website. Based on this argument, the second hypothesis addresses the link and impact of E-SQ and users' behavioral intentions:

Hypothesis 2: There is a positive impact of E-SQ on users' behavioral intentions.

2.4. The Link between Users' Satisfaction and Users' Behavioral Intentions

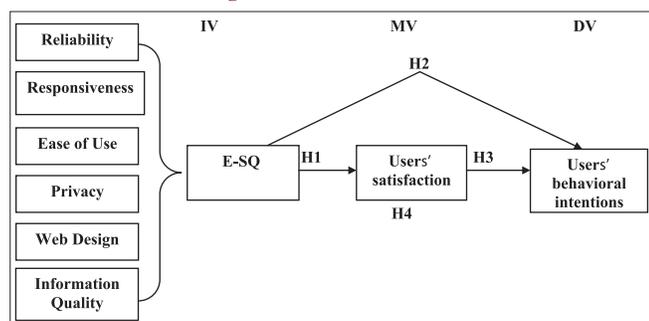
Several previous studies indicate that customer satisfaction plays a significant role in decision-making in the online environment (i.e. Oliver, 1999; Wolfigbarger and Gilly, 2003; Bansal, 2004; Osman, 2006; Liaw, 2008; Saha and Theingi, 2009; Gupta and Kim, 2010; Carlson and O'Cass, 2010; Lee, 2010). As a result, users' satisfaction is considered an antecedent of behavioral intentions and actual behavior (i.e. Oliver, 1999; Wolfigbarger and Gilly, 2003; Bansal, 2004; Osman, 2006; Liaw, 2008; Saha and Theingi, 2009; Gupta and Kim, 2010; Carlson and O'Cass, 2010; Lee, 2010). In addition, Liang and Zhang (2012) assumed that if customers are satisfied with a product or service, they are more likely to continue to purchase it, and are more willing to spread positive word-of-mouth recommendations. Furthermore, Saha and Theingi (2009) stated that high satisfaction ensures positive behavioral intentions. This study also examines the potential influence of users' satisfaction on the behavioral intentions as following:

Hypothesis 3: There is a positive impact of users' satisfaction on users' behavioral intentions.

2.5. Fourth Users' Satisfaction Mediates the Impact of E-SQ on Users' Behavioral Intentions

Customer satisfaction is considered a vital construct in marketing research (Luo and Hombur, 2007) and is widely mentioned in services marketing (Noone et al., 2009). As a result, significant importance and influence are attributed to this construct. In this regard, many previous studies indicate that the satisfaction variable plays a mediator role in the impact of E-SQ on behavioral intentions (e.g. Zarei et al., 2014; Aliman and Mohamad, 2013; Carlson and O'Cass, 2010; Cronin et al, 2000; Yu et al, 2006). Accordingly, the present study assumes the following:

Figure 1: Research model



Hypothesis 4: User satisfaction mediates the impact of E-SQ on behavioral intention.

3. RESEARCH METHODOLOGY

This section describes methods and techniques used to conduct this study. Since the objective of this study is to identify the impact of the E-SQ of online databases on users' behavioral intentions, the current study utilized the quantitative survey methodology to test hypotheses and answer the research questions mentioned earlier.

3.1. Sampling Design Selected

The current research implemented the convenience sampling method to select a representative sample of postgraduate students in Jordanian public and private universities. Previous studies investigating E-SQ effectiveness have shown that a convenience sampling approach is an efficient and acceptable sampling method to adopt (e.g. Loiacono et al., 2002; Cai and Jun, 2003; Gummerus et al., 2004; Long and McMellon, 2004; Lee and Lin, 2005). As mentioned earlier, the convenience sampling is used when a large number of completed questionnaires need to be gathered quickly and economically or when obtaining a sample through other means is impractical (Zikmund et al., 2010).

3.2. Study Population

The study population in this research is the postgraduate students (i.e., master's and PhD students), as shown in Table 1, at Jordanian public and private universities. The selection was based on the

Table 1: Distribution of graduate students enrolled in Jordanian Public and Private Universities for the year 2012-2013*

Universities	Number of MA students	Number of PhD students
University of Jordan	3164	1212
Yarmouk University	3123	834
Mutah University	1242	174
Jordan University of Science and Technology	1159	0
Hashemite University	860	0
Al al-Bayt University	683	0
Al-Balqa' Applied University	706	0
Al-Hussein Bin Talal University	20	0
German-Jordanian University	353	0
Amman Arab University	583	129
Middle East University	730	0
Jadara University	352	0
Amman Private University	159	0
Applied Science Private University	69	0
Philadelphia University	52	0
Al-Isra University	20	0
Petra University	126	0
Al-Zaytoonah University	36	0
Jerash Private University	192	0
Princess Sumaya University for Technology	147	0
Arab Open University	79	0
Zarqa Private University	109	0
Irbid National University	24	0
Total	13,988	2349

*Source: Ministry of Higher Education in Jordan website

assumption that postgraduate students are the potential users of the online academic databases and, therefore, are able to answer the questionnaire survey items with more accuracy and confidence.

The nine public universities and fourteen private universities in Jordan are listed in Table 1. The grand total of postgraduate students for both Master's and PhD programs for the year 2012-2013 was 16,377 students, according to the statistics of the Ministry of Higher Education in Jordan.

3.3. Study Sample

The study sample of this research consists of a convenience sample of postgraduate (master's and PhD) students in Jordanian universities as listed in Table 2.

The authors of this study decided to select 10 universities to participate in this study, as shown in Table 2, resulting in the participation of 12,575 postgraduate students. This number of students represents approximately 77% of the total number of postgraduate students enrolled in Jordanian public and private universities for the year 2012-2013. The 10 selected universities are considered the largest universities in Jordan in terms of students and faculty members and cover the various geographical locations from North to South in Jordan.

3.4. Sample Size

The sample size needed for multiple regression can be identified using the well-known formula $n \geq 50 + 8m$, where n is the sample size and m is the number of predictor or explanatory variables (Tabachnick and Fidell, 2007). There are eight total explanatory variables in this study. Thus, according to Tabachnick and Fidell's formula (2007), the minimum sample size for multiple regression analysis in this study is $114 (50 + [8 \times 8] = 114)$.

3.5. Data Collection Method

This study used a personally administered questionnaire to collect data from the 10 selected universities under investigation. The main advantage of personally administered questionnaires is that researchers can collect all the completed responses within a short period. Moreover, researchers can have more opportunity to introduce the research topic and motivate the respondents to offer their frank answers (Sekaran, 2003).

Table 2: Distribution of graduate study students in the selected sample

Universities	Number of MA students	Number of PhD students
University of Jordan	3164	1212
Yarmouk University	3123	834
Mutah University	1242	174
Hashemite University	860	0
Al al-Bayt University	683	0
Al-Balqa' Applied University	706	0
German-Jordanian University	353	0
Amman Arab University	79	0
Al-Zaytoonah University	36	0
Zarqa Private University	109	0
Total	10,355	2220

The data collection process in this study started in the beginning of November 2014 and lasted for 6 weeks. The researchers visited the selected universities after making arrangements with administrators of online databases at the 10 universities in order to distribute the questionnaires to postgraduate students who use the library to conduct research. Around 25 questionnaires were distributed for every single university except the University of Jordan, where 50 questionnaires were distributed twice as many questionnaires were distributed at the University of Jordan because it is the largest university in Jordan and has various majors in different fields; therefore, it was appropriate to collect more questionnaires from its students. In total, 280 questionnaires were distributed, and 230 questionnaires were completed properly; 50 questionnaires were excluded due to incomplete answers.

3.6. Development of the Research Questionnaire

The questionnaire used in this study starts by asking the participant if he or she has used any online academic database during the current academic year. If the answer is "yes," the participant has to state the name of the database that he or she used. If the answer is "no," the participant has to stop answering the survey. The next part of the questionnaire consists of two parts: The first one gathers general information about the participant, such as age, gender, educational level (master's or PhD), study program (major), current job, and university. The second part of the questionnaire asks about the participant's perception of the E-SQ of the online databases and his or her satisfaction and behavioral intentions concerning databases such as EBSCO, ProQuest, ScienceDirect, and Emerald.

The five-point Likert-type scale was used to measure all dimensions and constructs. This scale ranged from 1 (strongly disagree) to 5 (strongly agree). The E-SQ construct was measured by using six different dimensions: Ease of use (4 items), information quality (4 items), reliability (4 items), responsiveness (4 items), security (3 items), and website design (4 items) as supported and validated by Ladhari's study (2010). Items used to measure variables were taken from different sources to be compatible and suitable with the online academic database context. Users' satisfaction was measured by the satisfaction scale developed by Collier and Bienstock (2006). This scale consisted of three items. Users'

behavioral intentions were measured by using three items adapted from Collier and Bienstock (2006).

4. FINDINGS

This section sheds some light on the data gathered in this study. Table 3 shows the key characteristics of the sample that participated in this study.

Table 3 presents the frequency distribution of the respondents based on their gender. Out of the 230 respondents, the sample consisted of 120 (52.2%) males and 110 (47.8%) females. This gender distribution is reasonable when we consider the percentage of postgraduate male students (55.8%) and female students (44.2%) at Jordanian public and private universities according to statistics from the Ministry of Higher Education for the year 2012-2013. Table 3 also provides the frequency distribution of the respondents based on their educational level. Out of the 230 respondents, the sample consisted of 199 (86.5%) master students and 31 (13.5%) PhD students. This result is consistent with the fact that most postgraduate students are in master programs at Jordanian universities. Finally, Table 3 shows the most frequently used database by respondents. The majority of respondents had used the EBSCO database (56.1%), followed by ScienceDirect (22.2%) and ProQuest (7.8%). The smallest percentage of respondents had used the Al Manhal database (0.9%). This result reveals that the EBSCO database is the most familiar and popular database among postgraduate students in Jordan. In this regard, the EBSCO database is one of the largest databases in the world and provides a large amount and wide range of contents (e.g. journals, articles, books, etc.) in different fields and disciplines.

4.1. Hypothesis Testing

The multiple regressions technique was used to test the developed hypotheses as follows:

Hypothesis 1: There is a positive impact of E-SQ on users' satisfaction.

This hypothesis examines the impact of E-SQ measured by six dimensions (ease of use, information quality, reliability, responsiveness, security, and website design) on the dependent variable of user satisfaction.

As shown in Table 4, the F value (38.514) for the overall regression was significant ($P < 0.000$). The R^2 value was 0.509. Thus, the E-SQ constructs explains 50.9% of the variation in user satisfaction. However, only four dimensions of E-SQ explain users' satisfaction (i.e., ease of use, reliability, security, and website design).

Hypothesis 2: There is a positive impact of E-SQ on users' behavioral intentions.

This hypothesis examines the impact of E-SQ measured by six dimensions (ease of use, information quality, reliability, responsiveness, security, and website design) on the dependent variable of user's behavioral intention.

Table 3: Key demographic characteristics of respondents

Characteristic	Category	N (%)
Gender	Male	120 (52.2)
	Female	110 (47.8)
	Total	230 (100.0)
Educational level	MSc	199 (86.5)
	PhD	31 (13.5)
	Total	230 (100.0)
Database used	EBSCO	129 (56.1)
	ProQuest	18 (7.8)
	ScienceDirect	51 (22.2)
	Emerald	14 (6.1)
	Dar Almanduma	8 (3.5)
	Al Manhal	2 (0.9)
	Not available	8 (3.5)
	Total	230 (100.0)

Table 5 shows that the F value (21.063) for the overall regression was significant ($P < 0.000$). The R^2 value was 0.362. This indicates that 36.2% in the variation of user's behavioral intention was explained by the E-SQ. Five dimensions only of the E-SQ explain the users' behavioral intentions (i.e., ease of use, security, reliability, website design, and responsiveness).

Hypothesis 3: There is a positive impact of users' satisfaction on users' behavioral intentions.

This hypothesis examines the impact of user satisfaction on the dependent variable of user's behavioral intention.

Table 6 shows that the F value (173.622) for the overall regression was significant ($P < 0.000$). The R^2 value was 0.432. This indicates that 43.2% in the variation of user's behavioral intention was explained by the model. Thus, Hypothesis 3 was supported since the independent variable was a significant predictor.

Hypothesis 4: User satisfaction mediates the impact of E-SQ on behavioral intention.

Baron and Kenny's (1986) steps and methodology were used in the current study for assessing the presence of mediator effects as displayed in Figure 2. Three equations were used: First, behavioral intention was regressed on the E-SQ to establish that there was a significant effect; second, user satisfaction was regressed on the E-SQ to establish a significant effect. In the third equation, behavioral intention was regressed on both the E-SQ and user satisfaction. This test explores whether user satisfaction fully or partially mediates the relationship between E-SQ and behavioral intentions as shown in the following analysis.

According to the steps outlined above for testing mediation, the study first examined whether the independent variable (E-SQ) had a significant impact on the dependent variable (behavioral intention) by regressing behavioral intention on E-SQ (Step 1). Findings indicate that E-SQ significantly influences behavioral intention ($\beta = 0.54, R^2 = 0.292, P < 0.00$). Hence, Path C was significant for mediation conditions required for Step 1.

Next, to establish whether E-SQ has a significant impact on the hypothesized mediator (user satisfaction), this study regressed user satisfaction on E-SQ (Step 2). E-SQ also significantly influences user satisfaction ($\beta = 0.68, R^2 = 0.458, P < 0.00$), thus the condition for Step 2 was met for mediation impact of user satisfaction (Path A was significant).

According to Step 3, the behavioral intention simultaneously regressed on both E-SQ and user satisfaction. User satisfaction significantly influences behavioral intention ($\beta = 0.66, R^2 = 0.432, P < 0.000$). Moreover, the third regression (Step 3 – Path B) indicates that the impact of E-SQ on behavioral intention after controlling the influence of user satisfaction was also significant ($\beta = 0.18, R^2 = 0.449, P < 0.009$), which implies a partial mediation role of user satisfaction, as we can see in Table 7.

Figure 2: Model of paths and impacts

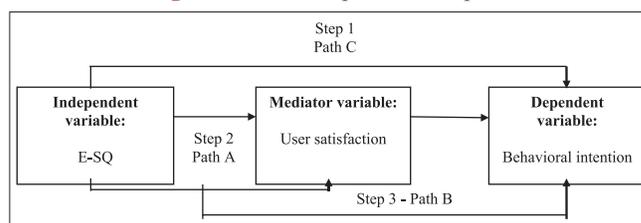


Table 4: Multiple regression of E-SQ for user satisfaction

Independent variable	Dimensions	Dependent variable	R ²	Beta	Significant	Results
E-SQ	Ease of use	User satisfaction	0.509	0.300	0.000	Significant impact
	Information quality			0.026	0.704	Insignificant impact
	Reliability			0.159	0.017	Significant impact
	Responsiveness			-0.045	0.451	Insignificant impact
	Security			0.175	0.002	Significant impact
	Website design			0.294	0.000	Significant impact

N=230, F=38.514, P=0.000. E-SQ: E-service quality

Table 5: Multiple regression of E-SQ for user's behavioral intention

Independent variable	Dimensions	Dependent variable	R ²	Beta	Significant	Results
E-SQ	Ease of use	User's behavioral intention	0.362	0.217	0.002	Significant impact
	Information quality			0.150	0.053	Insignificant impact
	Reliability			0.174	0.021	Significant impact
	Responsiveness			-0.169	0.014	Significant impact
	Security			0.210	0.001	Significant impact
	Website design			0.148	0.044	Significant impact

N=230, F=21.063, P=0.000. E-SQ: E-service quality

Table 6: Simple regression of user satisfaction on user's behavioral intention

Independent variable	Dependent variable	R ²	Beta	Significant	Results
User satisfaction	User's behavioral intention	0.432	0.657	0.000	Significant impact

N=230, F=173.622, P=0.000

Table 7: Testing for user satisfaction as a mediator using multiple regression

Independent/ mediating variables	Step 1 (Path C)		Step 2 (Path A)		Step 3 (Path B and C)	
			Dependent variables			
	Behavioral intention		User satisfaction		Behavioral intention	
	Beta	R ²	Beta	R ²	Beta	R ²
E-SQ	0.54	0.292	0.68	0.458	0.18	0.449
User satisfaction	-	-	-	-	0.66	0.432
Significance	P=0.000		P=0.000		P=0.009	

P<0.05. E-SQ: E-service quality

As shown in Table 7, when the behavioral intention was regressed on E-SQ (Step 1), the R² value was 0.292. Moreover, when user satisfaction was regressed on E-SQ (Step 2), the R² value was 0.458. Then, when the behavioral intention was regressed simultaneously on both E-SQ and user satisfaction (Step 3), the R² value became 0.449. This increase in the R² value indicates that user satisfaction mediates the impact of E-SQ on behavioral intention. However, since the impact of the predictor (E-SQ) on the dependent variable (behavioral intention) is still significant, as mentioned in Step 3, this suggests only a partial mediator role of user satisfaction.

5. DISCUSSION

The present study aimed to evaluate the impact of E-SQ on end users' behavioral intentions in Jordanian academic institutions. To do that, the study sought to answer the following questions: (1) What are the users' perceptions of the E-SQ dimensions? (2) What is the impact of E-SQ on users' satisfaction and behavioral intentions? (3) Which dimension of E-SQ contributes more than others to behavioral intentions? And (4) is the impact of E-SQ on behavioral intentions direct or indirect?

The results show that four dimensions of E-SQ (ease of use, website design, security, and reliability) have a positive impact on users' satisfaction. Firstly, the ease-of-use dimension was the most important dimension in terms of influencing users' satisfaction in the online academic databases. The reason behind that is that the ease-of-use dimension influences to what extent users can browse and search easily within the database without obstacles. In other words, when the end users can interact with the online databases smoothly, this facilitates the process of getting the required results and thus satisfying users' needs. At the same time, when the end users cannot deal with the online databases or when they find it difficult to search and browse, and are thus prevented from completing the search process, they will feel dissatisfied regarding the service.

Secondly, the website design dimension is related to the degree to which an online database can get users' attention and convince them that the database has what they are looking for. When an online database has an attractive website and a well-organized interface, it likely signals to users that it is easy to follow and can satisfy their expectations.

Thirdly, the study findings indicate that the security dimension is crucial since it is related to users' trust and feelings of safety

in using the online environment. Respondents in this study claim that when the online database protects their search privacy and doesn't misuse their personal information, they are encouraged to use it and they feel more comfortable when searching. In addition, many online databases provide a document delivery service, which requests the user's financial information, such as a credit card number, to purchase articles; therefore, ensuring security will enhance the satisfaction of potential users.

Fourthly, the reliability dimension refers to the uninterrupted availability of the online database service, and to the database being free of errors. When the online database searches properly upon the users' first attempt and limits their wasted efforts to getting their required results, this will reflect on users' satisfaction and encourage them to continue using the online database.

The result of the current research is consistent with the study conducted by Cristobal et al. (2007), who found that perceived E-SQ influences satisfaction and that satisfaction in turn influences consumer loyalty and intentions. In addition, Collier and Bienstock (2006) supposed that there is a significant positive influence of E-SQ on satisfaction. Further, Vaidyanathan et al. (2005) indicated that dimensions and attributes such as search function, screen design, navigation, and system reliability have significant effects on perceived ease of use and perceived usefulness, which in turn have a significant effect on the individual user's acceptance of digital libraries.

Lee and Lin (2005) also claimed that website design and reliability affect overall customer satisfaction. Moreover, Wolfingbarger and Gilly (2003) suggested that website design, reliability, and security are significant predictors of customer judgments of quality and satisfaction. However, in this study, information quality and responsiveness did not have an obvious significant and positive influence on users' satisfaction. The reason for this is that researchers are not concerned with nor do they check the quality of information acquired by academic databases as long as they trust the databases. Thus, information quality will not be questioned by researchers, which in turn will not influence the satisfaction level of users. Moreover, since the end users do not often interact with the support team of the online academic databases when they encounter technical problems during the search process, respondents in this study indicate that responsiveness does not necessarily affect their satisfaction.

In terms of the impact of E-SQ on behavioral intention, results show that E-SQ dimensions (ease of use, security, reliability, website design, and responsiveness variables) have a positive

impact on users' behavioral intentions. First, the preceding empirical analysis indicates that the ease-of-use dimension has made the strongest contribution to explaining users' behavioral intentions. Thus, the current study considered ease of use as one of the most significant dimensions that influence users' satisfaction and behavior. Second, the empirical analysis indicates that the security dimension has a strong impact on users' behavioral intentions. This result is consistent with users' perceptions toward the importance of confidence and trust level for using the electronic services in the online environment. Third, the empirical analysis finds that the reliability dimension has a significant impact on users' behavioral intentions. This result confirms that reliability is one of the most important factors that should be emphasized in ensuring the high quality of online academic databases. Fourth, empirical analysis shows that website design has a positive impact on users' behavioral intentions. This result reflects the importance of such a dimension in influencing users' satisfaction and behavior in the e-service setting in general and in the online academic databases in particular as the online setting provides an interface to connect the users and the organization. Finally, the empirical analysis revealed that responsiveness was a significant predictor of users' behavioral intentions. This result provides an important insight that being available to solve users' problems and answer their questions and requests at all times of the day will influence their intentions.

The above results are consistent with the previous studies conducted by Carlson and O'Cass (2010) who claim that high E-SQ can potentially increase consumers' behavioral intentions. In other words, high E-SQ can lead to an increased likelihood of users revisiting the website, purchasing products or services from the website, providing positive word-of-mouth recommendations, and reducing the likelihood to switch to other competitor websites. Further, Gounaris et al. (2010) revealed that E-SQ has a positive effect on e-satisfaction, while it also influences consumers' behavioral intentions. Santos (2003) explained that E-SQ cannot only provide organizations competitive advantages in the online environment, but also involve clients in the product process through customer feedback, and improve clients' relationships and satisfaction.

In terms of the impact of satisfaction on behavioral intention, results demonstrate that users' satisfaction has a positive impact on users' behavioral intentions. This finding is consistent with prior studies and indicates that customer satisfaction is a significant player in decision-making in the online environment (e.g. Gupta and Kim, 2010; Oliver, 1999). In addition, Liang and Zhang (2012) assume that if customers are satisfied with a product or service, they are more likely to continue purchasing it, and are more willing to spread positive word-of-mouth recommendations. Saha and Theingi (2009) also stated that high satisfaction ensures positive behavioral intentions.

In terms of considering satisfaction as mediator between E-SQ and behavioral intention, this study indicates that users' satisfaction has a partial mediating role for the impact of E-SQ on behavioral intentions. Baron and Kenny's (1986) findings were consistent with the findings of Zarei et al. (2014) that indicated that overall

satisfaction was a mediator between service quality and behavioral intentions in the hospital industry. Further, Aliman and Mohamad (2013) indicate that satisfaction partially mediates the relationship between perceived service quality and behavioral intentions. Carlson and O'Cass (2010) find that customer satisfaction plays a mediating role for the relationship between behavioral intentions and the E-SQ model.

6. LIMITATIONS AND FUTURE RESEARCH

The current study has some limitations that should be considered when interpreting its findings and when conducting future research. First, this study used a convenience sampling technique; second, the study population included only postgraduate students as potential users of the online academic databases and didn't include perspectives of other users in the digital content industry (e.g., undergraduate students and academic staff); and third, this study used a subjective approach for measuring service quality, satisfaction, and behavioral intentions.

Accordingly, this study suggests some new directions for further research. First, future research should be conducted by using a larger and more random sample in order to reduce sample biases. Second, future research should seek to replicate the study in new settings, to assess whether the dimensions and linkages identified in this study remain relevant and consistent with new and more variables. Third, future researchers are invited to reapply the research model in the Arab Online Databases to explore the key criteria in evaluating online databases. Fourth, future research should use some hard measures for evaluating E-SQ and all other variables.

7. CONCLUSIONS AND IMPLICATIONS

It was mentioned earlier in this study that most of the previous literature addressed the area of electronic resources and online academic databases by using the TAM as a theoretical framework. This study used an alternative theoretical approach to evaluate the E-SQ of online academic databases. This theoretical approach adopts and adapts the perspectives and dimensions of E-SQ and users' satisfaction and intentions developed and used in the marketing research area.

The current study also gave attention to the mediating role of user satisfaction on the impact of E-SQ on behavioral intention. Findings of this study support the adopted conceptual framework in which user satisfaction partially mediates the impact of the E-SQ model on behavioral intention. This study suggests that in order to enhance end users' behavioral intentions, providers of online academic databases need to consider their users' perspectives and expectations. Providers have to develop strategies to enhance E-SQ dimensions (ease of use, security, reliability, website design, and responsiveness) in their digital library services. Obviously, in order to provide a high level of overall service quality, providers have to give more attention to all five dimensions identified earlier in this study. Moreover, the present study developed a set of criteria by using users' opinions to evaluate academic online databases.

In other words, administrators at online databases should use and consider the dimensions of E-SQ identified in this study when they need to decide to subscribe to or renew any online databases in their academic institutions.

This study tries to benefit academics and practitioners in two ways: First, by providing valid dimensions of E-SQ by testing Ladhari's model (2010) of E-SQ in the context of academic online databases—this can help providers and managers of online academic databases in creating a better fit between their systems and their users' personal characteristics, preferences, and needs; second, by identifying the most important E-SQ dimensions that affect users' satisfaction and behavioral intentions in the online academic database setting. As a result, this will encourage vendors to continue to provide digital services that are accessible and user-friendly for existing and future users.

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