Customer Satisfaction on Quality of ISO Standard 9126 Services in Electronic Banking in Libya

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Abstract—Despite the availability of some electronic banking (e-banking) services in Libya, these services are still facing difficulties in many ways, they have advantages and disadvantages, and so far, they have not been understood by some customers to get their satisfaction. This research aims to know the extent of customer satisfaction (CS) with e-banking services in Libya through ISO 9126 standards. The research population consisted of all customers of (Al-Wahda) and (Commerce and Development [C and D]) bank in Benghazi city, a random sample of 180 and 207 clients were selected, respectively. Research hypotheses have been tested, and we noticed a relationship between the existence of a strong significant correlation between the quality services of e-banking according to quality standards ISO 9126 software and CS among the banks under study. The value of this research comes from the new scientific results to study the impact of the quality of e-banking services on CS in Libyan banks, and its originality lies because of the lack of this research applied to Libyan banks in general and Benghazi city in particular.

Keywords—Customer satisfaction, Electronic banking, ISO 9126 standard, Libyan banks, Services quality.

I. Introduction

During the past 30 years, the banking sector has changed and expanded a lot in banking systems. Electronic (Internet) banking has been introduced which is completely different from the old banking system.

The client can directly connect to the bank via the Internet and conduct various banking transactions. This means that banking operations are conducted electronically online, and banks virtually establish websites on the Internet to provide the same services as traditional banking, because it helps the customer to get many advantages easily (Gikandi and Bloor, 2010).

Many papers have been published about e-banking which is of wide use nowadays because of its facilities. We will go through what some researchers said about this subject.

Prema (2009) was keen on examining the procedures of the online banking service to encourage customers to use it, and it is important to emphasize the ease and reliability of using this provided banking service. In the same period, Tavishi and Kumar studied the effects of using the internet and mobile banking on customers in India. Those effects were ease of using and the risk of using (Tavishi and Kumar, 2013).

Kahandawa and Wijayanayake (2014); Murugiah and Akgam (2015) concluded that the customers in Libya have a definite correlation with their banks. Furthermore, the relationship between security and CS has a negative impact.

Hakkeem and Sha (2015) observed that the banks should improve their services to cover all the ages group of their customers instead of focusing on a certain age group. Machogu and Okiko (2015) show that some factors affect the CS with e-banking. These factors were security, privacy, speed, fees, charges, and other factors that play an important role in satisfying the customers.

Amin (2016) concluded that four dimensions have a good relationship with internet banking that make the customers satisfied. While Raghavendra and Kumar (2016) focused on educating the customers so that they could deal well with internet banking they concluded that the customer's states such as gender, age, and education level affect the customers' satisfaction.

Sameena and Saroja (2017) mentioned that the banks should know what the customers want and then give them what they would be happy with.

Raji et al. (2021) used a set of attributes of e-banking services (security, reliability, ease of use, speed of

transactions, and response) to their importance to banking customers in Nigeria, and examined their impact on CS. The correlation result for 390 respondents shows that there is a positive correlation between all attributes of e-banking services and CS. Vijayanand and Kumar (2021) conducted an empirical study to analyze the impact of SQ on satisfaction in e-banking services in public sector banks in India, for a simple random sample of (667) clients and concluded that the various e-banking factors (Responsiveness, Convenience, and Security) and demographic variables have a positive correlation on CS.

Khan and Alhumoudi (2022) presented the structural equation model approach, using CS as a mediator to measure the performance of e-banking services for a stratified random sample. As a result, efficiency, reliability, and service quality are a direct influence on CS and retention.

Tahtamouni (2022) used the descriptive analytical approach to discuss the dimensions of e-services quality and CS in three Jordanian banks with 170 participants. The results of the study revealed that the dimensions of quality (ease of use, time, confidentiality, and security) have a high impact on customer satisfaction (CS).

The banks in Libya responded slowly to these new systems and took a long time to shift to e-banking, and the branch in Libya still depends on the old systems in dealing with the banking missions, and only recently they have started using telephone banking for their customers.

The problem here is specifically trying to answer the following main questions:

1. Are the needs of customers in private sector banks being met through e-banking services?
2. Is there a relationship between CS and providing a good level of e-banking services?

II. Literature Review

A. Electronic Banking

Is a means that helps the customers to perform their banking business electronically without visiting the bank, the customers can use their personal computers via the internet to perform their businesses (Al-Salami et al., 2019). There are some advantages of electronic banks:

1. Banks provide electronic access to a wider customer base wherever they are at any time, thereby offering convenience for the customer
2. Customer privacy and confidence increase, as well as providing full banking services. They can monitor their bank assets around the clock, make payments electronically, and transfer funds between different customer accounts.

Sandhu and Arora (2022) stated that features of the e-banks are reducing costs. Providing services from electronic banking has a low cost compared to traditional banks. Cost and improving quality attract clients to use e-banking.

There are many types of internet banking, some of them are as follows:

Automated Teller Machine (ATM), this is a 7-day 24-h by which the customer can withdraw cash at any day and time without the need to visit the bank or use a cheque, the customer can get many other services by this machine.

Internet banking

Allowing the bank's customers to securely access its website to conduct any necessary financial transactions.

Point of sale (POS)

A software interface managed by the bank that allows the customer to make sales, create, and print the sales receipt.

Mobile banking

The customers can use their mobile phones to perform their banking dealings such as making bill payments, and money other services.

The number of ATMs in Libya is few compared to the number of customers who can communicate with their banks using these personal computers and mobiles. Via internet banking, only in 1998 did the banks in Libya use the internet to help their customers to get the benefits of these services (Al-Sukkar, 2005).

B. Online Banking Quality

Service quality (SQ) can be defined as a multi-element measure for assessing the level of service quality and its conformity with the customer's ongoing expectations (Sawadi and Al-Salami, 2015).

To develop and maintain a long-term relationship between the bank and customers, this is done by providing a diversified set of Online Banking Quality (OBQ) activities; the goal is to continuously provide excellent service to CS and retention (Hoq et al., 2010).

It is of high importance to provide the customer with banking programs in an information and communication technology (ICT) environment with quality content worthy of him, and then the customer has the right to change his actions/or attitude as a result of his dealings with the internet or mobile services provided to him by the bank (Ramdhani et al., 2021).

C. Internet Banking in Libya

The great development witnessed by the banking movement in Libya during the past two decades as a result of the adoption of the technological development of the computer, contributed to the provision of banking services to its customers via the Internet, as the Libyan Commerce and Development (C and D) Bank was the first to provide this service in 2007, with only 1.33% of the total customers of the bank. As for the rest, they continued to use the traditional manual banking approach for several reasons, the most important of which is the lack of confidence in the electronic banking system. In addition, the major banks have faced difficulties in connecting them with their branches spread over vast distances. To solve this problem, to keep pace with the rapid technological progress around the world, all Libyan banks have been subjected to new accounting and training standards, improving banking services, establishing

an effective national system for cash payments and providing alternatives payment is cashless (CBL annual report, 2022; Twati, 2008).

As a result of the above, many government and private commercial banks have provided a variety of e-banking services, including (payment and withdrawal service through mobile applications, sending SMS messages, and providing ATMs). Therefore, we aim in this research to assess the extent of the knowledge and readiness of the Libyan citizen to deal with the new e-banking services via the mobile phone.

D. Software Quality Standard ISO 9126

The International Organization for Standardization (ISO) established the ISO 9126 standard in cooperation with the International Electro-Technical Commission (IEC). These two Organizations introduced a standard dealing with subjects that have to do with the electronic banking quality model (Restuputri et al., 2022), whether internal or external quality through six characteristics: (Functionality, Reliability, Usability, Efficiency, Maintainability, and Portability), which in turn are divided into a set of sub-characteristics as shown in Fig. 1 (Bhatti, 2005; Nofiyati et al., 2022).

Functionality

The electronic bank program can provide functions that met all the specific and implicit needs of the customer under certain considerations.

Reliability

The electronic bank program can maintain an acceptable percentage of performance under certain conditions when using the program.

Usability

It is the ability to understand, learn, and ease the use of electronic banking software when used under certain considerations.

Efficiency

The ability to provide adequate performance and services to the customer, equal to the number of resources used by the e-bank software product under certain considerations.

Maintainability

Ability to modify, improve, and update the electronic bank program in line with any environmental or functional changes in the program's requirements.

Portability

It is the possibility of moving from one software environment for e-bank programs to another software environment.

E. Customer's Satisfaction

The previous studies provided multiple definitions of CS. Oliver (2014) defined it as comparing the customer's level of emotional response or full feeling towards what he gets from the service provider, and comparing it with the customer's previous expectations.

Most banks are sure that they can gain the highest marketing dominance by satisfying their customers, and this will return to them as a result (retention of their customers, revenues, market share, and more sales). Jun et al. (2004) noticed that there is a significant positive impact of some service quality factors among banks on CS, including (ease of use, speed of response, reliability, safety, benefit, and efficiency).

While Kamakodi and Khan (2008) identified a set of important factors that the customer expects from the quality of the banking service, including (confidentiality of information, staff politeness and their method of providing assistance, personal attention, and timely service provision). Massoudi (2020) Linked loyalty to CS.

Quality of service (QoS) and CS are two closely related types. The evaluation of the level of service quality depends mainly on the level of CS. If the service provider cannot assess the quality of the service provided to the customer, the level of satisfaction of that customer cannot be evaluated (Pankwar et al., 2022).

The customer expects to get the QoS that he envisions and meets his necessary needs; as a result, the QoS can refer to the difference between the level of service provided and the expectations perceived by the customer (Carmignani, 2009; Breja et al., 2011). Some may consider
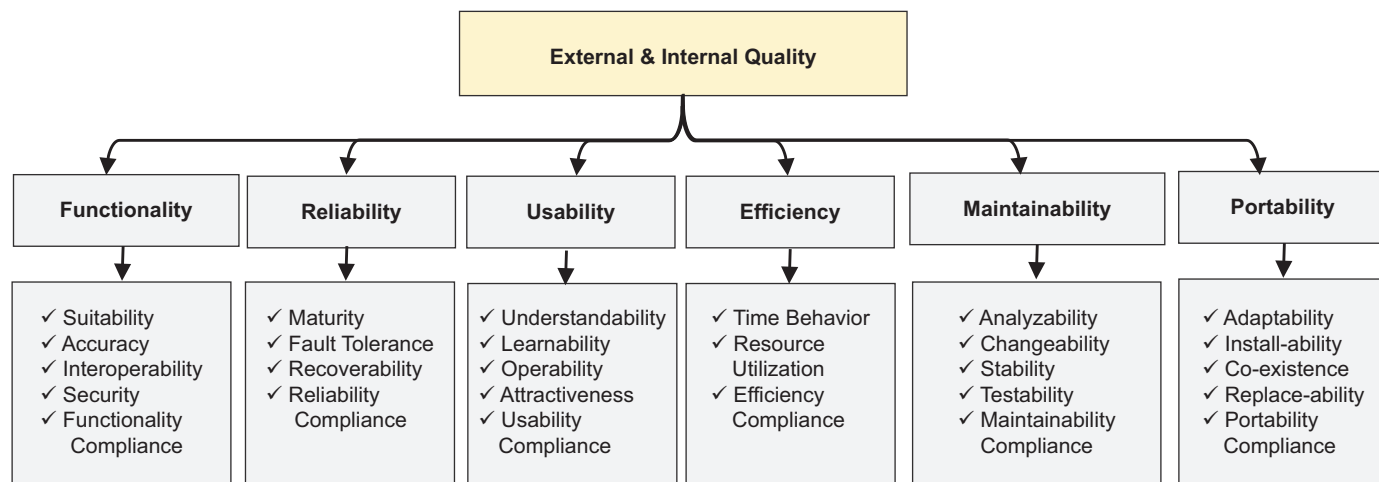

Fig. 1: Software quality ISO 9126 standard.

that the CS with the QoS is a real and tangible matter, while in fact it is an emotional feeling of the customer as a result of receiving a high or at least acceptable level of that service (Al-Salami and Abdalla, 2022). Massoudi and Fatah (2021) indicated that after-sale service will improve CS and customer loyalty.

The main objective of this research is to know the extent of CS with e-banking services through ISO 9126 standards in the bank of C and D and Al-Wahda bank, their complaints about these services, what are the challenges of applying e-banks in Libya, in addition to identifying the factors that have the most important moral impact regarding CS for e-banking services. Where these two banks were chosen as the largest government banks in the country. The following research hypotheses were formulated based on the research problem and objectives, as shown in Fig. 2:

- H1: Efficiency has a positive effect on SQ of the e-banking according to ISO standards between the two banks
- H2: Functionality has a positive effect on SQ of the e-banking according to ISO standards between the two banks
- H3: Reliability has a positive effect on SQ of the e-banking according to ISO standards between the two banks
- H4: Usability has a positive effect on SQ of the e-banking according to ISO standards between the two banks
- H5: Maintainability has a positive effect on SQ of the e-banking according to ISO standards between the two banks
- H6: Portability has a positive effect on SQ of the e-banking according to ISO standards between the two banks
- H7: CS has a significant difference between the two banks
- H8: There is a significant relationship between SQ and CS in the bank of C and D
- H9: There is a significant relationship between SQ and CS in Al-Wahda bank.

III. METHODOLOGY

This research aims to know the extent of CS with the quality and nature of electronic banking services in Libyan banks. For this purpose, we conducted a questionnaire in which users assessed their satisfaction with these services according to ISO/IEC 9126 standards. This research uses an analytical descriptive method and a quantitative approach to fulfill the aims of the study. The collected data were processed and analyzed statistically using SPSS 26. The Likert scale adopted three dimensions and weights (1 = "Agree", 2 = "Neutral", 3 = "Disagree") to measure the level of the answer.

The study population consisted of all the 240381 customers of Al-Wahda bank distributed in 16 branches in Benghazi city. A random sample of 180 customers was selected. In addition, the study population also consisted of 284806 customers' bank of C and D, distributed in five branches in the same city, and 207 clients were selected as random samples. The percentage of Al-Wahda bank stood at 46.5% and 53.5% in the bank of C and D.

Two sources were used to collect data and information: different kinds of references like books, previous studies, and published papers, and depended on the questionnaire as a powerful tool to collect the data, to discover the relationship between the independent variables that may affect the dependent variables.

IV. RESULTS

A. The Demographic Data

Tables I-III shows some of the demographic data for the selected sample, which includes (Gender, Age, and Educational level).

In addition, the researchers have carried out more analyzes similar to the above tables regarding personal data of customers, which space cannot mention all of them, including (occupation, monthly income, the number of banks dealing with it, the beginning of the use of the Internet, rate your access to the Internet, the time that we spend online, the activity you do while using the internet (search), the activity you do while using the internet (shopping), the activity you do while using the Internet (browse), the activity you do while using the internet (watch), the activity you do while using the internet (conversation), the activity you do while using the internet (learn), the activity you do while using the internet (all previous options), the customer shopping process, available electronic services used by the client).
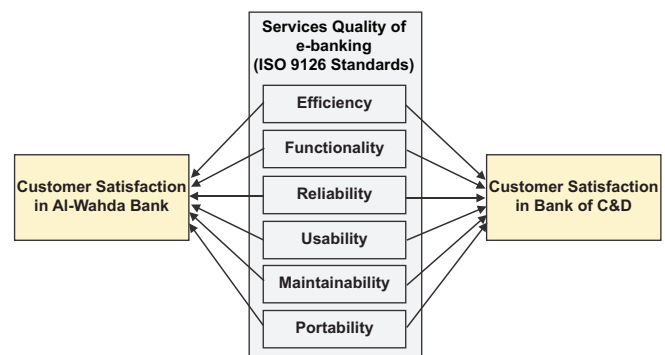
Fig. 2: Research model.

TABLE I
FREQUENCY FOR GENDER

Bank's name	Gender		Total
	Female	Male	
C and D			
Count	69	138	207
Percent	33.30	66.70	100.00
Al-Wahda			
Count	83	97	180
Percent	46.10	53.90	100.00
Total (%)	152	235	387
	39.30	60.70	100.00

TABLE II
FREQUENCY FOR AGE

Bank's name	Age							Total
	<25	From 25 to <30	From 30 to <35	From 35 to <40	From 40 to <45	From 45 to <50	From 50 and above	
C and D								
Count	6	21	54	69	34	16	7	
Percent	2.90	10.10	26.10	33.30	16.40	7.70	3.40	100.00
Al-Wahda								
Count	4	14	46	51	34	15	16	180
Percent	2.20	7.80	25.60	28.30	18.90	8.30	8.90	100.00
Total								
Count	10	35	100	120	68	31	23	387
Percent	2.60	9.00	25.80	31.00	17.60	8.00	5.90	100.00

TABLE III
FREQUENCY FOR EDUCATIONAL LEVEL

Bank's name	Educational level					Total
	Less than secondary	Secondary or equivalent	University or equivalent	Master	Ph.D	
C and D						
Count	6	51	108	27	15	207
Percent	2.90	24.60	52.20	13.00	7.20	100.00
Al-Wahda						
Count	13	42	97	24	4	180
Percent	7.20	23.30	53.90	13.30	2.20	100.00
Total						
Count	19	93	205	205	19	387
Percent	4.90	24.00	53.00	53.00	4.90	100.00

B. Quality Services of e-banking

In this part, we describe some of the quality services of e-banking, according to the ISO standards (Efficiency - Functionality – Reliability - Usability – Maintainability - Portability) in the bank of C and D and Al-Wahda bank, we resorted to using the weighted average and the standard deviations as shown in Tables IV-VI.

As shown in Table IV, the study sample answers on the expressions related to the efficiency were a weighted mean of efficiency in general between 1.7857 and 2.4796 in the bank of C and D, and between 1.8345 and 2.4138 in Al-Wahda bank.

The first question "The bank has a website" obtained the highest average in the two banks under study, and this represents the customer's complete satisfaction with the two banks' websites, while the question "Bank employees seek to achieve customer requirements", ranked last with a weighted average of 1.7857 in the bank of C and D, and this is an indication of the bank's customers' satisfaction with the services they receive from the bank's employees.

On the other hand, the question "The bank has an advanced ICT infrastructure" ranked last with an average of 1.8345 in Al-Wahda bank which represents the customer's acceptance of the bank's services. In general, the level of efficiency in electronic banking services in the two banks under study was acceptable to the customer from the viewpoint of the study sample.

Table V shows the response of the study sample on the expressions of functionality, where a weighted mean ranged

TABLE IV
DESCRIPTIVE STATISTICS OF EFFICIENCY FACTOR

Questions	Bank	Mean	SD	Attitude
The bank has a website	C and D	2.4796	0.62806	Agree
	Al-Wahda	2.4138	0.69308	Agree
You can get help by using the online banking service	C and D	2.1378	0.64562	Neutral
	Al-Wahda	2.0138	0.75449	Neutral
The website of the bank does not take a lot of time during loading	C and D	1.9388	0.63756	Neutral
	Al-Wahda	1.9586	0.65485	Neutral
The information system in the bank depends entirely on the computer	C and D	2.0867	0.72156	Neutral
	Al-Wahda	2.1517	0.76677	Neutral
The bank has an advanced ICT infrastructure	C and D	1.9133	0.69254	Neutral
	Al-Wahda	1.8345	0.69735	Neutral
The bank keeps abreast of developments in the world of technology to provide better services to the client	C and D	1.8673	0.71809	Neutral
	Al-Wahda	1.8552	0.73578	Neutral
Bank staff have tactful and good treatment and decent appearance that attracts customers	C and D	2.0204	0.67146	Neutral
	Al-Wahda	1.9724	0.6449	Neutral
Bank staff have high skill and accuracy in accomplishing their duties to customers	C and D	1.9184	0.68946	Neutral
	Al-Wahda	1.9172	0.66147	Neutral
Bank employees seek to achieve customers' requirements	C and D	1.7857	0.68313	Neutral
	Al-Wahda	1.9103	0.7352	Neutral
The bank's overall appearance is in line with the services it provides to customers	C and D	1.8112	0.71617	Neutral
	Al-Wahda	1.8621	0.76939	Neutral

between 1.7755 and 2.0612 in the bank of C and D, and between 1.8069 and 2.0897 in Al-Wahda bank. In general,

the functionality level of e-banking services in the two banks under study was acceptable to the customer from the viewpoint of the study sample.

The response of the study sample on the expressions of reliability, where a weighted mean ranged between 1.6531 and 1.9439 in the bank of C and D and between 1.7448 and 1.9517 in Al-Wahda bank. The "The e-banking service provides high protection for my personal information about my banking transactions" at the highest average in the two banks under study, and this represents the customer's acceptance of the security and protection of his personal information provided by electronic banking services. In general, the reliability level in e-banking services in the two banks under study was acceptable to the customer from the viewpoint of the study sample.

Furthermore, the response of the study sample on the expressions of usability, where a weighted mean ranged between 1.7806 and 2.1480 in the bank of C and D, and between 1.8276 and 2.1517 in Al-Wahda bank. In general, the usability level of e-banking services in the two banks under study was acceptable to the customer from the viewpoint of the study sample.

As shown in Table VI, the response of the study sample on the expressions of maintainability is between 1.5612 and 2.0918 in the bank of C and D, while it's between 1.6207 and 2.1379 in Al-Wahda bank. The question "There are failures

to the bank's website" in Al-Wahda bank got a weighted mean of 2.1379, it represents the customer's agreement to the existence of malfunctions in the website, while the question "e-service is available even in the event of interruption of the internet" obtained the less average in the two banks under study, and this represents customer dissatisfaction with the electronic banking services of the two banks under study in the event of an internet failure.

The response of the study sample on the expressions of portability, where a weighted mean ranged between 2.0357 and 2.0765 in the bank of C and D and between 1.9310 and 2.2276 in Al-Wahda bank. In general, the portability level in e-banking services in the two banks under study was acceptable to the customer from the viewpoint of the study sample.

C. CS

Table VII shows the study sample answers for CS, where the weighted mean ranged between 1.4439 and 2.0204 in the bank of C and D, and between 1.6276 and 2.0828 in Al-Wahda bank.

The first question "Everyone should deal with electronic banking" obtained the highest average in the two banks under study, this represents the acceptance of customers to deal with e-banking services in the two banks under study,

TABLE V
DESCRIPTIVE STATISTICS OF FUNCTIONALITY FACTOR

Questions	Bank	Mean	SD	Attitude
The bank's electronic banking services are of quality	C and D	1.9235	0.65575	Neutral
	Al-Wahda	1.8089	0.64868	Neutral
Through electronic banking, you can accomplish all the tasks	C and D	1.7755	0.68733	Neutral
	Al-Wahda	1.8069	0.68004	Neutral
The use of e-banking provides permanent contact with the bank	C and D	2.0612	0.62947	Neutral
	Al-Wahda	1.8207	0.76982	Neutral
The bank has an inquiry about electronic services by telephone and internet	C and D	1.9133	0.7072	Neutral
	Al-Wahda	2.0414	0.7253	Neutral
The bank provides customers with clear and accurate bank statements	C and D	1.9643	0.75362	Neutral
	Al-Wahda	2.0897	0.68635	Neutral
The behavior of bank employees reflects the customers' sense of security	C and D	1.8929	0.67463	Neutral
	Al-Wahda	2.0138	0.72635	Neutral
All the services you need are available on the bank's website	C and D	1.8418	0.65671	Neutral
	Al-Wahda	1.9655	0.68123	Neutral

TABLE VI
DESCRIPTIVE STATISTICS OF MAINTAINABILITY FACTOR

Questions	Bank	Mean	SD	Attitude
There are failures in the bank's website	C and D	2.0051	0.59483	Neutral
	Al-Wahda	2.1379	0.6731	Neutral
The bank provides electronic banking services continuously	C and D	2.0918	0.64984	Neutral
	Al-Wahda	1.8828	0.69225	Neutral
E-service is available even in the event of interruption of the Internet	C and D	1.5612	0.73821	Disagree
	Al-Wahda	1.6207	0.73663	Disagree

TABLE VII
DESCRIPTIVE STATISTICS OF THE PORTABILITY FACTOR

Questions	Bank	Mean	SD	Level of importance
Everyone should deal with electronic banking	C and D	2.0204	0.65601	Neutral
	Al-Wahda	2.0828	0.69225	Neutral
I will use electronic banking services regularly	C and D	1.9694	0.65561	Neutral
	Al-Wahda	1.9931	0.70215	Neutral
The website of the bank saves you a lot of time and effort	C and D	1.8827	0.688	Neutral
	Al-Wahda	2.0069	0.67182	Neutral
I think I did the right thing using the bank's website	C and D	1.9235	0.67881	Neutral
	Al-Wahda	1.9655	0.68123	Neutral
The website has increased my association with the bank	C and D	1.7755	0.74463	Neutral
	Al-Wahda	1.8552	0.73578	Neutral
I am satisfied with my banker and I consider it the best	C and D	1.7245	0.72012	Neutral
	Al-Wahda	1.8552	0.74516	Neutral
The bank has a bank spokesman service to provide facilities for customers	C and D	1.4439	0.6883	Disagree
	Al-Wahda	1.6276	0.71633	Disagree
The bank's website provides all banking services to customers	C and D	1.7245	0.67605	Neutral
	Al-Wahda	1.8483	0.68039	Neutral
Through the bank's website, all the facilities can be made immediately to customers	C and D	1.7398	0.70066	Neutral
	Al-Wahda	1.9034	0.71028	Neutral
E-banking is easy to use for customers	C and D	1.7653	0.72041	Neutral
	Al-Wahda	1.9517	0.69052	Neutral
An immediate Responsiveness to customer demand is available	C and D	1.6684	0.69224	Disagree
	Al-Wahda	1.7931	0.75366	Neutral
I feel satisfaction and comfort when I deal with this bank	C and D	1.7296	0.73264	Neutral
	Al-Wahda	1.9517	0.72006	Neutral

TABLE VIII
T-TEST AND POTENTIAL VALUE FOR THE ISO QUALITY STANDARDS

Bank	Mean	SD	Standard error mean	t	P-value
Efficiency					
C and D	1.9715	0.4034	0.02881	0.165	0.869
Al-Wahda	1.9592	0.38696	0.03214		
Functionality					
C and D	1.91	0.58308	0.04165	−0.496	0.62
Al-Wahda	1.93	0.57977	0.04815		
Reliability					
C and D	1.806	0.48502	0.03464	0.519	0.604
Al-Wahda	1.843	0.48324	0.04013		
Usability					
C and D	1.9473	0.49513	0.03537	0.385	0.701
Al-Wahda	2.0069	0.51668	0.04291		
Maintainability					
C and D	1.886	0.50869	0.03634	−1.409	0.16
Al-Wahda	1.88	0.49587	0.04118		
Portability					
C and D	2.0561	0.5632	0.04023	−0.353	0.724
Al-Wahda	2.0793	0.56157	0.04664		
Quality of banking services					
C and D	1.928	0.39747	0.02839	−0.224	0.823
Al-Wahda	1.949	0.40884	0.03395		

TABLE IX
T-TEST AND POTENTIAL VALUE TO DESCRIBE CS WITH SQ OF E-BANKING

Bank	Mean	SD	Standard error mean	t	P-value
CS					
C and D	1.7786	0.49237	0.49237	−2.276	0.023
Al-Wahda	1.9019	0.49658	0.49658		

while the question "The bank has a bank spokesman service to provide facilities for customers" obtained the less average in the two banks under study, this represents a lack of CS of e-banking services in the two banks under study. In general, the CS level in the two banks under study was acceptable for the study sample. Depending on the mean value, the level of importance for each question can be determined.

D. Hypothesis Test

To describe the quality of e-banking services using the ISO 9126 software quality standard in general at C and D and Al-Wahda bank by their various branches, we used weighted means, standard deviations, calculated t value, and probability values.

As we see in Table VIII, the potential value ($P = 0.869$) for the efficiency between the two banks under study is greater than ($\alpha = 0.05$) the level of significance. So, efficiency has no significant difference in SQ of the e-banking according to ISO standards between the two banks, and we reject hypothesis H1.

In addition to that, we can see the same effect for all other factors, where the potential values for all factors are also greater than ($\alpha = 0.05$). Hence, there is no significant difference in these factors between the two banks under study at a level of significance ($\alpha \leq 0.05$), and we reject all other hypotheses (H2, H3., H6).

To describe CS in general at the two banks through their various branches, the researcher used weighted means, standard deviations, calculated t values, and probability values as in Table IX. Note that the potential value in CS ($P = 0.023$) is <0.05, so there is a significant difference, and

TABLE X
QS OF E-BANKING USING ISO 9126 SOFTWARE STANDARD AND THEIR RELATIONSHIP WITH THE BANK OF C AND D CS

Bank's name	Efficiency	Functionality	Reliability	Usability	Maintainability	Portability	QFS	Customer satisfaction
Efficiency								
Pearson correlation	1	0.536**	0.663**	0.618**	0.549**	0.422**	0.821**	0.576**
Sig. (2-tailed)		0.000	0.000	0.000	0.000	0.000	0.000	0.000
Functionality								
Pearson correlation	0.536**	1	0.688**	0.607**	0.561**	0.614**	0.777**	0.541**
Sig. (2-tailed)	0.000		0.000	0.000	0.000	0.000	0.000	0.000
Reliability								
Pearson correlation	0.663**	0.688**	1	0.662**	0.705**	0.589**	0.893**	0.682**
Sig. (2-tailed)	0.000	0.000		0.000	0.000	0.000	0.000	0.000
Usability								
Pearson correlation	0.618**	0.607**	0.662**	1	0.643**	0.520**	0.818**	0.590**
Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.000	0.000	0.000
Maintainability								
Pearson correlation	0.549**	0.561**	0.705**	0.643**	1	0.569**	0.841**	0.692**
Sig. (2-tailed)	0.000	0.000	0.000	0.000		0.000	0.000	0.000
Portability								
Pearson correlation	0.422**	0.614**	0.589**	0.520**	0.569**	1	0.705**	0.562**
Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000		0.000	0.000
QFS								
Pearson correlation	0.821**	0.777**	0.893**	0.818**	0.841**	0.705**	1	0.752**
Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000		0.000
Customer Satisfaction								
Pearson correlation	0.576**	0.541**	0.682**	0.590**	0.692**	0.562**	0.752**	1
Sig. (2-tailed)	00.000	0.000	0.000	0.000	0.000	0.000	0.000	

**Correlation is significant at the 0.01 level (2-tailed)
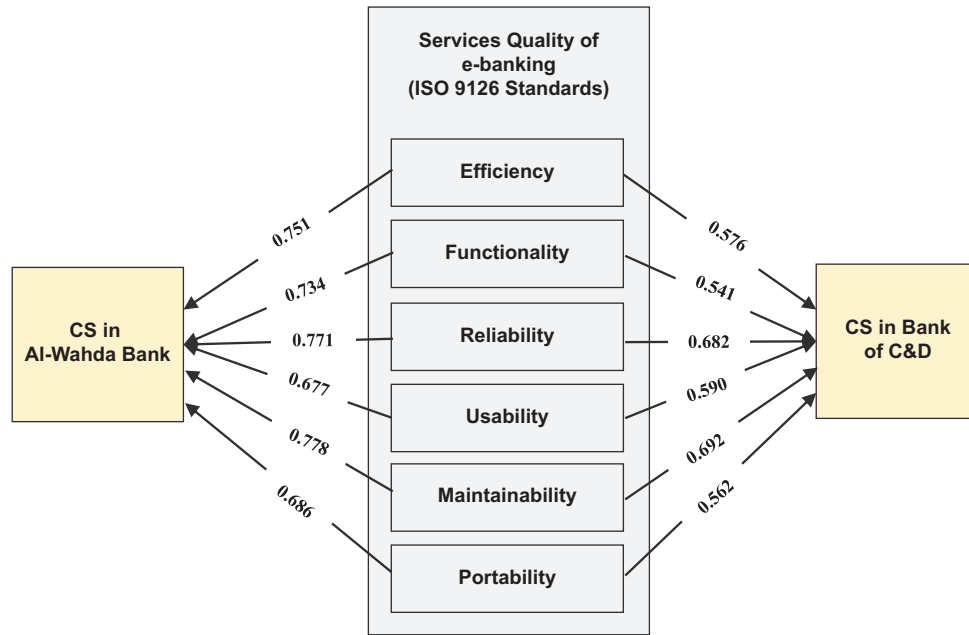
Fig. 3: The influence coefficients between CS and the factors of two the banks.

TABLE XI
QS OF E-BANKING USING ISO 9126 SOFTWARE STANDARD AND THEIR RELATIONSHIP WITH AL-WAHDA BANK CS

Bank's name	Efficiency	Functionality	Reliability	Usability	Maintainability	Portability	QFS	Customer satisfaction
Efficiency								
Pearson correlation	1	0.565**	0.813**	0.673**	0.745**	0.547**	0.898**	0.751**
Sig. (2-tailed)		0.000	0.000	0.000	0.000	0.000	0.000	0.000
Functionality								
Pearson correlation	0.565**	1	0.657**	0.556**	0.607**	0.542**	0.743**	0.734**
Sig. (2-tailed)	0.000		0.000	0.000	0.000	0.000	0.000	0.000
Reliability								
Pearson correlation	0.813**	0.657**	1	0.668**	0.757**	0.605**	0.911**	0.771**
Sig. (2-tailed)	0.000	0.000		0.000	0.000	0.000	0.000	0.000
Usability								
Pearson correlation	0.673**	0.556**	0.668**	1	0.705**	0.572**	0.821**	0.677**
Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.000	0.000	0.000
Maintainability								
Pearson correlation	0.745**	0.607**	0.757**	0.705**	1	0.630**	0.898**	0.778**
Sig. (2-tailed)	0.000	0.000	0.000	0.000		0.000	0.000	0.000
Portability								
Pearson correlation	0.547**	0.542**	0.605**	0.572**	0.630**	1	0.732**	0.686**
Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000		0.000	0.000
QFS								
Pearson correlation	0.898**	0.743**	0.911**	0.821**	0.898**	0.732**	1	0.867**
Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000		0.000
Customer satisfaction								
Pearson correlation	0.751**	0.734**	0.771**	0.677**	0.778**	0.686**	0.867**	1
Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

**Correlation is significant at the 0.01 level (2-tailed)

we accept hypothesis H7, this low satisfaction comes in favor of Al-Wahda bank at a level of significance ($\alpha \leq 0.05$).

To test hypotheses H8 and H9, Pearson Correlation was used to verify the ISO 9126 standards, to measure the QS of e-banking factors (Efficiency - Functionality - Reliability - Usability - Maintainability – Portability), and its relationship to CS in the two banks under study.

Table X shows the quality of e-banking services using the ISO 9126 software quality standard and their relationship

with CS in the bank of C and D. The correlation coefficient results showed that there was a strong correlation between CS and QS of e-banking, where the Pearson correlation value was ($\alpha = 0.752$), and the probability value was <0.01. Hence, it is clear that the relationship between CS and QS of e-banking in the bank of C and D is a strong significant at a level of significance ($\alpha \leq 0.01$), and in this case, we accept hypothesis H8, as shown in Fig. 3. The same decision can be made with Hypothesis H9. The Pearson correlation

coefficient results (α = 0.867) showed that there was a strong correlation between CS and QS of e-banking in Al-Wahda bank, and the $P < 0.01$. Hence, we **accept** hypothesis H9, as shown in Table XI and Fig. 3.

V. Conclusions

Depending on the empirical results of the descriptive analysis that was presented in the previous tables of the study variables and test hypotheses, we show that the level of QS of e-banking through the ISO 9126 software quality standard (efficiency – functionality - reliability - usability – maintainability - portability) at Al-Wahda bank and bank of C and D was somewhat acceptable.

As well as, there is a strong relationship significance between the quality of e-banking services and CS in the two banks at a level of significance ($\alpha \leq 0.01$).

The first six hypotheses were rejected, where there is no significant difference in QS of e-banking according to the ISO 9126 software quality standard between the two banks, while we accepted hypothesis H7, with low satisfaction comes in favor of Al-Wahda bank. In addition to that, H8 and H9 were accepted, that is means, there is a significant relationship between SQ and CS in the bank of C and D and Al-Wahda bank.

Therefore, the two banks must know the difficulties that customers face in using the electronic banking service and try to find solutions for them, by owning a permanent tool for measuring CS and working to develop, and update the website and communication systems for banks through developing or adding new channels, measuring the effectiveness of e-banking services by conducting periodic studies, applying service quality dimensions, spreading the culture, importance, and advantages of e-banking services among customers, selecting skilled personnel to provide appropriate service.

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