

Accounting Knowledge as One of the most important factors affecting the pricing of E-Banking Services – A field Study in Jordanian banks

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Abstract

The study aimed to examine the effect of accounting knowledge on pricing the E-banking services through studying the accounting system, constituents and role of cost accounting in pricing services. In addition, it aimed at identifying the role of accounting knowledge of information technology risks (the cost and loss of security and protection) in pricing E-banking services. Furthermore, this study sought to identify the most important difficulties facing E-banking service pricing's process.

The study found that accounting knowledge contributes highly to provide the appropriate data for making the decisions of E-banking service pricing in the Jordanian commercial banks through providing data pertaining to the cost of developing and operating E-services. It also showed that accounting knowledge of information technology risks affects greatly the decisions of pricing taken by the Jordanian commercial banks through identifying the losses resulted by information technology risks as well as the cost of providing internal control standards. Jordanian commercial bank face obstacles linked to accounting system; these hinder the pricing of E-banking services on scientific bases.

Key words: Accounting system, pricing E-services, commercial banks, Islamic banks

1 . Introduction

In Hashemite Kingdom of Jordan, banking sector interests greatly in using technologies and electronic means for providing its services. Nowadays, it is seeking to use smart phones in order to provide banking services. This achieves a competitive trait as well as the largest base of clients.

Banking sector witnesses a strong competition between banks in order to get a largest possible number of clients and maintain them as permanent clients. As a result, paying attention and marketing E-banking services and the elements of marketing process (servicing, promoting, distributing and pricing) become necessary because pricing and reputation are of the most important fields of bank's administrations. Here, the price represents the cost paid for E-service. Pricing's decision is made by senior administrations since the price may prevent the client to use services offered. Consequently, the banks will lose the cost of establishing and activating E-services. This study seeks to identify the role of accounting knowledge as one of factors that affect the pricing of E-banking services through specialized accounting methods as well as the risks of banking services and their effect on bank's cost and profit.

The decision of pricing E-banking services is considered one of the most important decisions since it affects to which extent the clients use the services. As a result, there are a set of factor must be taken into consideration while pricing such services. Thus, this study seeks to answer the following questions:

- What are the accounting factors affecting the decisions of pricing E-banking services in Jordanian commercial banks?
- What are the difficulties of pricing E-banking services facing the Jordanian commercial banks?

The importance of study emerges from the importance of banking sector directed to use and apply information technology for providing all E-banking services. This usage is accompanied by the increase of investment cost in information technology; such investment includes the purchasing of appliances as well as devices and electronic programs in addition to the employing of experts. Consequently, the banks need to return the cost and achieve an

appropriate revenue which can be obtained from those services for enabling the bank to maintain the level of its profits.

This study aimed at achieving the following purposes identifying the importance of accounting knowledge which affects the policy of pricing E-banking services in the Jordanian commercial banks and identifying the most important difficulties facing the Jordanian commercial banks while pricing E-banking services.

The study tests the following hypotheses :

- Accounting knowledge contributes to provide the appropriate data for making the decisions of pricing E-banking services in the Jordanian commercial banks.
- Accounting knowledge of E-banking service risks affects the decisions of pricing in the Jordanian commercial banks
- The Jordanian commercial banks face obstacles linked to accounting system which hinder the pricing of E-banking services on scientific bases.
- There are statistically significant differences between the type of bank and the role of accounting knowledge in pricing E-banking services.

The remainder of the paper is organized as follows. Section II describes the methodology of the study. Section III Background and literature review, Section IV presents the case study and Results and recommendations

II The methodology of the study:

2-1 The method of study :

This study relies on analytical descriptive approach in which the initial data has been collected from the population of study , analyzed statistically for obtaining the results on study 's axes. A questionnaire has been the tool used for collecting the initial data designed to measure the factors affecting the decisions of pricing E-banking services in the Jordanian commercial banks.

2-2 The population and Sample of study:

Complete enumeration has been used for achieving the purposes of study; the population of study consists of all Jordanian commercial banks which reach 34 (Statistical bulletin , the Central Bank of Jordan); they are distributed as follows: 14 Jordanian commercial banks, 3 Islamic Banks and 7 Foreign commercial banks which have been excluded because they have branches that are not considered central administrations; the pricing is decided by bank's senior administration. Thus, the sample of study is composed of managers of financial departments and of information technology departments 17 Jordanian commercial banks. This sample has been chosen because this sample's members make the decisions related to pricing and information technology employees are used to do the technical matter related to information technology. A questionnaire has been distributed on the sample 's members; 34 have been returned back; 2 have been excluded because they have not been appropriate for statistical analysis.

2-3 The instrument of study

In order to achieve the purposes of study, analytical descriptive approach have been used for identifying the factors affecting the decisions of pricing E-banking services in Jordanian commercial banks. The primary instrument used for collecting data has been the questionnaire, which designed for identifying the factors affecting the decisions of pricing E-banking services in Jordanian commercial banks. The questionnaire was based on closed questions; the answers available have been (very high degree, high degree, middle degree, low degree and very low degree). These previous answers are analyzed to degrees (5, 4, 3, 2,1), respectively. the element from (1-1.79) has no effect and a low effect from (1.80-2.59)and a middle effect from(2.60- 3.39) whereas it has a high effect from (3.40- 4.19) and very high effect from 4.20-5

Statistical analysis tools Spss has been used and the data has been analyzed by using the program of calculating percentages and Arithmetic mean as well as testing the differences of the views of sample individuals.

III. Background and literature review

There are various studies addressed the pricing and the role of accounting in pricing banking services. However, this study is distinguished because it addresses the accounting knowledge including the information of cost accounting, financial accounting, cost risks of pricing e-services in Jordanian banks; the following are the previous studies:

- Al- Tarawneh 's study (2000) aimed to evaluate the policy of pricing the received interest's rates in commercial banks working in Jordan. It examined the effect of two factors on this policy : bank revenues and the effect of laws imposed by the government and the Central bank such as tax rates and the legal reserve ration of deposits. He used least square method and unreal financial data of sixteen commercial banks from 1996- 2000. The study found that Jordanian banks suffer from an excessive liquidity and what is exploited is 60 % only. Banks load their clients the paid costs of interests as well as administrative expenses through increasing the rates of the received interests. It also indicated that the banks have the ability to reduce the interests through controlling the administrative expenses.

Consequently, the load the clients endure can be reduced. Furthermore, it showed that imposing the tax rates and reserve ration by the government increases the price of interests because the banks load their clients a part of these costs; the effect of other revenues in reducing the rates of interests is low due to the limited activity of banks in terms of trading of stocks and bonds as well as providing banking services other than granting credit facilities. The study recommended that the government must necessarily reduce the rates of tax; this leads to reduce the rates of interest; exempting capital profits of banks from income tax will stimulates the banks to increase their investments related to stocks and bonds. As a result, the banks will be induced to reduce their rates of interest. However, the government shall take into consideration the effect of reserve ration on interests' rates.

- Al-Dmur 's study (2002) aimed at identifying the factors affecting the pricing of industrial and chemical products exported in Jordan weather taken combinedly or independently. It also sought to identify to which extent the relative importance of these factors is varied if the companies studied are classified on the basis of employees' number, exported experience, or the ratio of export sales. The population of study has been composed of 52 exported chemical companies. The researcher relied on a questionnaire for collecting data; the study showed that all variables determined in study model: (the purposes of pricing, costs, as well as competition and legislations, laws, the properties of products in addition to market conditions) affect significantly the decision of pricing the exported products if taken combinedly. The most important variables are : governmental legislations and laws, competition, cost. Five independent variables (if taken independently) affect significantly dependent variable ; these variable as follows: (a) costs, (b) competition, (c) risks degree , (d) demand volume (e) governmental legislations and systems as well as other obstacles. Difference of relative importance of factors will affect the decision of pricing exported chemical products if the companies, the subject of study, are classified on the basis of employees' number, exported experience or the percentage of their exported sales.
- Al-Omari 's study (2003) aimed at identifying the role of cost accounting in pricing services provided by Jordanian commercial banks through identifying the most important factors affecting the decisions of pricing as well as recognizing the method of allocating the costs and obstacles that hinder convening of information required for making decision in addition to the costs of risks. The study used a questionnaire for collecting the required data which covered 16 Jordanian banks. It found that 64 % of Jordanian banks face difficulties and obstacles of making an accurate decision of pricing. It also showed that factors are represented a lack of clarity of information submitted by branches and departments in addition to lack of scientific and practical experiences and the costs resulted by applying the system of cost accounting. It also showed that 73 % of Jordanian banks rely on various factors for pricing the services including competition for services provided in terms of quantity and quality, clients' needs and wishes, the cost of service provided. Furthermore, it indicated that 92 % of banks use the allocation in order to handle the costs; the cost allocation is affected by to which extent the banks adopt the cost accounting which linked to good financial system in the bank.
- Lepetit, Nys, Rous and Tarazi 's study (2006) has been conducted in Limoges University in France. It aimed at identifying the effect of variety and expansion of non-credit services and their prices in terms of the percentages of interests resulted by the loans as well as examining the effect of the risks of credit prices. It also explored the effect of bank's revenues emerged from non-credit activity such as providing non-credit services and investment activities related to loan prices. This study used the financial statements of 1996- 2000 of 602 European banks located in 12 countries: Austria, Belgium, Denmark, France, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and Britain. It found that the banks add the risks to the loans and reduce the prices of loans when they depend more on non-credit revenues.
- Marteno, Donald & yi 's study (2006) has been conducted in America; it explored the loan provided by the investment banks in 1996- 2002. This study covered investment banks which their loans reach 2.6 million American dollars. It included 7 investment banks and explored the differences of pricing the loans between the commercial banks and investment ones; the interests and commissions which are added by the investment banks to their loans are greater than those added by the commercial banks. Furthermore, the percentage of cost risks in investment bank is low than one of cost risks in commercial banks. The maturity period , amounts and guarantees of loans provided by investment banks is greater than those of loans provided by commercial banks so that these loans become so similar to bonds for the investment banks. The study showed that the number of the borrowers from the investment banks is less than those borrowing from the commercial banks. the budgets of borrowers from investment banks are larger than those of borrowers from commercial ones. Furthermore, the cash floods of

borrowers from the investment banks are low in comparison with those of borrowers from the commercial ones. The study also indicated that the ratio of market value to book value related to borrowers from investment banks is different from that of borrowers from commercial banks.

Theoretical frame of accounting knowledge and pricing E-banking services

The decision of pricing E-banking services is one of the most important decisions made for identifying banks' revenues. This section of study shows the accounting information contributing to make the decisions of E-banking services. It explains the concept of pricing E-banking services as well as the accounting factors that affect the pricing of E-banking services, they are discussed in details:

E-banking services are defined as a set of activities and process with utilitarian content embedded in the tangible and intangible elements provided by the bank. These are recognized by the beneficiaries through their properties and utilitarian value which meet their current and future financial and credit needs and wishes. At the same time, they constitute a source of bank's profits through a mutual relationship between the two parties (Al-Ajarmah, Tayseer).

The researcher sees that E-banking services are process aimed at providing the clients with such services by using information technology such as ATM, E-banks, E-service through electronic sites and E-phones. Using information and communication technology for providing E-services constitutes a competitive trait in banking sector. However, this process requires a developed electronic devices as well as high efficient software and program protecting data and files from electronic risks. Thus, the process of pricing E-services needs to identify the cost of such services in addition to revenues expected.

The concept of price in banking market indicates to the rate of interests related to deposits, loans as well as fees, currencies and other expenses accrued by the bank in order to provide banking services (Al-Samadi'I, Mahmud, and et al. , 2001, 288). From client's point of view, the price represents the total benefits expected when banking service is used.

The researcher sees that the concept of pricing in information technology environment is the rate of revenue resulted from fees and commissions accrued by the banks for providing E-banking services.

The role of accounting knowledge in providing an appropriate information for pricing E-banking services

Previous studies have showed that accounting plays an important role in pricing accounting services and the researcher outlines the role of accounting knowledge in pricing E-banking services as follows:

First: Cost accounting is a method aims at achieving the purposes of facilities' administrations since it helps them in various field such as planning, controlling and decision making. This system contributes to make decision through providing data required for choosing between the alternatives available and suitable for achieving administration's purposes (Dhbian , Abdullatif, 2002, 36). The cost is the critical variable of pricing decisions due to providing relatively the data in comparison with other variables. Furthermore, it is important to cover at least the long term costs in order to maintain facility 's activity; there are various equations of pricing taken the cost as a basis for identifying services ' price:

- Pricing on the basis of total cost: this entry means that the price of sale is enough to cover all fixed and changing costs of production and that it must cover profit or surplus margin added to the cost of selling , administrative expenses as well as tax and what is required to achieve a level of acceptable and satisfied profit for the facility. Here, it is necessary to ensure that those expenses are covered for achieving the targeted profit when identifying the ratio of added surplus.
- Pricing on the changing cost: it is necessary to cover the long term total costs in order to maintain facility 's activity. In short term costs, it is best to buy one of products at a price which less than the cost in some cases however it must be higher than the changing cost. As a result, it contributes to cover the fixed costs.
- Pricing on revenue emerged from investment : pricing entry on revenue emerged from investment aims at linking between the extra amount and the costs and the invested in order to identify the price of selling .

Second: calculating the revenue on investment: one of the most common purposes in the modern establishments is to achieve a profitable revenue on money used or invested. Regarding banks, the purpose of pricing is to achieve revenue ratio of revenue on the level of money invested in the bank.

Third : studying cash flow: achieving the purposes of cash flow at determined levels is an effective method for restoring the possible largest part of costs which the banks pledge to pay to their client within a period agreed upon (abedat, Mohammad, p. 24). In banks, when some of banking services are characterized by their short time or cycle due to the development of information technology, the focus is on cash flow emerged from such services in order to cover the costs spent on services provided at the beginning. Here, cash flow is the main purpose of pricing.

Fourth: calculating the profit: achieving profit is one of main purposes the banks seek to achieve for ensuring their survival and implementing their obligations. The level of profit required is varied from one bank to another; it is relied on the priority of the purposes. Thus, the banks calculate the expected profit of development E-service through using break-even analysis and contribution margin analysis.

The role of accounting knowledge of information technology risks in pricing E-banking services:

The quick development and usages of information technology accompanied by the development of banking services provided have resulted various risks which are considered challenges facing the banks. In this section, the role of accounting information in pricing E-banking services can be outlined as follows:

- Accounting knowledge contributes to identify the risks related to banking services through studying historical data and recognize if the bank incurs repeatedly losses while establishing and developing such service. It also helps to identify the possibility of using the data for preventing these risks.
- Accounting knowledge provides the information of security and protection costs which is a part of banking services' costs. These costs may be linked to the technical application which is necessary for banking service; it is accompanied by the costs of programs which prevents the penetration of electronic sites as well as the costs of programs which protect ATMs. Here, accounting knowledge system provides all data pertaining to the costs of protection and security at bank and branch levels through a set of accounts that illustrate these expanses and the mechanism of their distributions and maturity; the costs of security and protection are varied according to the variety of nature of banking services as well as their risk on bank's accounts.
- Accounting knowledge of banking service risks through historical data contributes to price accurately banking services through adding these costs on fees and commissions of banking services consequently, pricing process is more realistic and relies on scientific basis.
- Accounting knowledge of banking service risks contributes to form allocation of possible losses resulted from E-banking applications as well as evaluate the expected losses of establishing and developing e-banking services.

Accounting knowledge contributes to price accurately banking services however, there are obstacles the hinder the pricing of E-banking services on the scientific basis; they can be outlined by the following points:

- Rapid and successive progress of information and communication technology is one of the most prominent obstacles the pricing process of E-banking services faces; the development of providing e-banking services is accompanied by the development of internal control systems. Thus, the banks face a shortage of cognitive and specialized capabilities of identifying the risks of e-services as well as the possible losses. As a result, evaluating or recognizing the realized losses becomes difficult.
- Lack of experience of bank's administration regarding the risks of e-banking services. Consequently, the realized losses are not recognized separately and are not disclosed.
- Lack of specialized scientific basis which helps the accountants in terms of distributing the costs of e-security and protection as well as the costs of internal control systems related to e-services; more than one service may share the same cost
- In order to use accounting knowledge, the banks must have a specialized department of costs which has scientific and practical knowledge of systems and distribution of cost as well as information technology, its risks and the mechanism of distributing of security and protection costs.

III. case study

4-1 Reliability of the instrument of study

For ensuring the reliability of study instrument, internal consistency variable, Cronbach Alpha, has been measured; it has ranged from (0.77- 0.92) . Table (1) shows these treatments. Furthermore, these percentages have been considered suitable for the purposes of this study.

Table (1)
Internal Consistency Variable, Cronbach Alpha

Field	Internal consistency
The role of accounting knowledge in pricing E-banking services	0.87
The role of accounting knowledge in providing the data related to information technology risks and its role in pricing E-services	0.83
The accounting difficulties which face the pricing of E-banking services	0.83

3. 1 The sample of study

Table (2)
Frequencies and percentage according to study variables

	Classes	Frequency	Percentage
Age	Less than 40	20	63
	More than 40	12	37
Education	Bachelor	24	75
	Master	19	6
	Phd	6	2
Designation	Manager of financial departments	15	45
	Manager or official of information technology	14	43
	Other	3	12
Experience	From 5 to less than 10 years	10	31
	From 10 to less than 15 years	7	38
	15 years and more than	10	31
E-banking services provided	From 5 to less than 10 years	8	25
	More than 10	24	75
Bank's type	Islamic bank	6	2
	Commercial bank	26	98

In table above, demographic characteristics of study's sample are outlined, and we notice the following:

- Age: from the table above, we notice that the age of the higher percentage of sample 's study has reached more than 30 year old where the percentage has been 63 % meaning that the sample of study consists of those persons with knowledge and experience in terms of answering the questionnaire
- Education : from the table above, we notice that the education of the higher percentage of study's sample hold bachelor degree ; it reached 75 %.
- Designation : from the table above, we notice that the designation of the highest percentage of study sample is either managers of financial supervision authorities or of departments of finance; they are the nearest department for consulting in terms of the costs of banking services and the mechanism of reducing and developing them; the percentage reached 45 % .
- Experience: From the table, we notice that the experience of most individuals of the sample exceeds 10 years and less than 15 years. Their percentage reached 38 % meaning that an enough experience is available in the sample of study.
- Banking service provided : the table showed that the higher percentage is the banks that provide more than 10 banking services. It reached 75%. As a results, the banks have an experience and knowledge of calculating and pricing E-banking services.
- Type of bank : from Table above, we noticed that the highest percentage was for commercial banks; there are 14 working commercial banks in Jordan in comparison with 3 Islamic banks. The previous table indicated that Islamic banks answered study 's questions

4-2 Hypotheses testing

First hypothesis : accounting knowledge contributes to provide appropriate data required for making the decision of pricing E-banking services in the Jordanian commercial banks.

To check validity of this hypothesis, arithmetic means and standard deviations of items related to the first hypothesis have been extracted. They are outlined in Table below.

Table (3)

Arithmetic means, standard deviations and orientation of items related to the first hypothesis

No.	Items	Arithmetic means	Standard deviation	The effect of accounting knowledge
1	The outputs of E-cost system is essential in pricing E-services	4.45	.605	Very high
2	Accounting knowledge helps to calculate the cost of e-service	4.25	.550	Very high
3	The bank has basis and standards for distributing the costs of e-banking services and its revenues on cost centers	4.35	.587	Very high
4	Accounting knowledge helps to add the profitable e-banking services through using the appropriate data of costs	4.45	.605	Very high
5	Accounting knowledge helps to provide the appropriate data of costs which cancelling one of e-banking services	4.50	.607	Very high
6	Accounting knowledge helps to calculate the extra cost emerged from the developed e-service; it is represented by the minimum cost of service	4.35	.587	Very high
7	Accounting knowledge in banks helps to calculate the price which cover the total costs in addition to the profit margin desired	4.30	.571	Very high
8	Accounting knowledge in banks contributes to provide appropriate data which help the bank to adopt the price covering the changing cost	4.55	.605	Very high
9	Accounting knowledge in banks contributes to provide appropriate data which help the bank to adopt the price achieving a revenue on the invested capital	4.40	.598	Very high
10	Accounting knowledge in banks contributes to provide appropriate data which help the bank to study break-even point related to e-banking services	4.25	.550	Very high
11	Accounting knowledge in banks contributes to provide appropriate data which help the bank to analysis the demand of e-banking services while pricing banking services.	4.65	.587	Very high
12	Accounting knowledge helps to analyze and evaluate the revenues expected from e-services	4.35	.587	Very high
	Accounting knowledge and its role in providing the appropriate data required for pricing e-services	4.40	.38	

Table (3) shows arithmetical means, standard deviations and the orientation of items' responses related to the first hypothesis; arithmetical means have ranged from (4.40 – 4.65); item No. (11), stating that Accounting knowledge in banks contributes to provide appropriate data which help the bank to analysis the demand of e-banking services while pricing banking services, has been at first rank; its mean has reached (4.65) whereas item No. (2), stating that Accounting knowledge helps to calculate the cost of e-service, has been at final rank; its

mean has reached (4.25). The total mean of accounting knowledge contribution has been (4.40); the orientation of responses has been very high.

Furthermore, total arithmetic mean of items composing first hypothesis has been compared with the standard mark (3)- the acceptance standard of the hypothesis- by using (t) test as shown in Table (4).

Table (4)

Arithmetical means, standard deviations and "T" test of items composing first hypothesis in comparison with the standard mark (3)

E-accounting knowledge and its role in pricing e-services in Jordanian banks	No.	Arithmetical mean	Standard deviation	T value	Degrees of freedom	Statistical Significance level
	32	4.40	.380	16.536	19	.000

Table above illustrates that there are statistically significant differences ($0.05=$) between the arithmetic mean and the standard marks (3) where T-value has reached 10.967; the statistic significance has reached 0.000. As a result, this hypothesis, stating that accounting knowledge contributes to provide appropriate data required for making the decision of pricing E-banking services in the Jordanian commercial banks, has been accepted.

Second hypothesis:

Accounting knowledge of e-banking service risks affects the decisions of pricing in the Jordanian commercial banks.

To check validity of this hypothesis, arithmetic means and standard deviations of items related to the second hypothesis have been extracted. They are outlined in Table below.

Table (5) shows arithmetical means, standard deviations and the orientation of items' responses related to the second hypothesis; arithmetical means have ranged from (4.15-4.50); item No. (1), stating that Accounting knowledge helps bank 's administration to identify the risks related to E-banking services, has been at the first rank; its mean has reached (4.50) whereas item No. (2), stating that accounting knowledge helps bank's administration to allocate amount for the possible losses of information technology, has been at the last rank; its mean has reached (4.15) which is high. The total mean of accounting knowledge contribution has been (4.36); the orientation of responses has been very high.

Furthermore, total arithmetic mean of items composing first hypothesis has been compared with the standard mark (3)- the acceptance standard of the hypothesis- by using (t) test as shown in Table (6).

Table (5)

Arithmetic means, standard deviations and orientation of items related to the first hypothesis

No.	Items	Arithmetic means	Standard deviation	The effect of accounting knowledge of risks
1	Accounting knowledge helps bank 's administration to identify the risks related to E-banking services	4.50	.607	Very high
2	Accounting knowledge helps bank's administration to allocate amount for the possible losses of information technology	.489	4.15	High
3	Accounting knowledge of pricing e-banking services helps to provide the data related to restore the costs of security and protection pertaining to information technology	4.50	.607	Very high
4	Accounting knowledge helps bank 's administration to evaluate and identify the losses related to the risks of information technology and bank's expected losses	4.35	.587	Very high
5	Accounting knowledge contributes to identify the costs of security and protection according to the difference of e-service nature	4.40	.598	Very high
6	Accounting knowledge contributes to identify the level of commissions and expenses of e-services according to the difference of e-service risks' nature	4.30	.571	Very high
7	Accounting knowledge contributes to use break-even point analysis between the expected revenues of e-services and the costs of preventing these risks and the expected losses of pricing accurately banking services.	4.30	.571	Very high
8	Accounting knowledge contributes to provide specialized accounting records illustrating the losses of risks related to information technology and the costs of preventing them in the field of pricing accurately e-banking services	4.36	.39	Very high
	Accounting knowledge of banking service's risks and its role in pricing e-services	4.36	.39	Very high

Table (6)

Arithmetical means, standard deviations and "T" test of items composing the second hypothesis in comparison with the standard mark (3)

E-accounting knowledge of e-service risks and its role in pricing e-banking services	No.	Arithmetical mean	Standard deviation	T value	Degrees of freedom	Statistical Significance level
	32	4.36	.392	15.485	19	.000

Table above illustrates that there are statistically significant differences ($0.05 = \alpha$) between the arithmetic mean and the standard marks (3) where T-value has reached 10.967; the statistic significance has reached 0.000. As a

result, this hypothesis, stating that Accounting knowledge of e-banking service risks affects the decisions of pricing in the Jordanian commercial banks, has been accepted.

Third hypothesis:

Jordanian commercial banks face obstacles related to accounting systems hindering the pricing of e-banking services on the scientific basis.

To check validity of this hypothesis, arithmetic means and standard deviations of items related to the third hypothesis have been extracted. They are outlined in Table below.

Table (7)

Arithmetic means, standard deviations and orientation of items related to the third hypothesis

No.	Items	Arithmetic means	Standard deviation	The difficulties that face the pricing of services
1	Lack of an integrated cost system in the bank which helps it to provide the data required for calculating the cost and pricing accurately e-services	4.80	.410	Very high
2	Lack of specialized scientific bases of distributing the costs of e-banking services is one of the difficulties facing the pricing process of banking services	4.15	.489	High
3	Lack of administratively and practically qualified employees for calculating the cost of e-service risks	4.55	.510	Very high
4	Developing information technology means is one the difficulties facing the banks in terms of pricing e-services	4.15	.489	High
5	Lack of accurate accounting data related to the revenues of e-banking services, because it is connected with other commissions, is one of the difficulties that hinder the process of pricing accurately e-services	4.55	.605	Very high
6	Accounting system does not provide information separated from the costs of security and protection of e-banking services and other services for enabling the administration to price the service.	4.15	.489	high
7	Lack of experts required for establishing specialized units of pricing in the bank which have a knowledge of e-systems' risks and costs related to prevent or avoid their risks is one of difficulties facing the pricing process	4.65	.587	Very high
8	Competition between banks in terms of using and applying information technology for providing e-banking services is one of the difficulties facing the pricing process	4.05	.394	High
9	The age of e-services is one of the difficulties facing the pricing process due to the short age and the ongoing development of such services according to the development of information technology	4.65	.587	Very high
	pricing's difficulties	4.41	.34	

Table (7) shows arithmetical means, standard deviations and the orientation of items' responses related to the third hypothesis; arithmetical means have ranged from (4.15-4.65); item No. (1), stating that Lack of an integrated cost system in the bank which helps it to provide the data required for calculating the cost and pricing accurately e-services, has been at the first rank; its mean has reached (4.65) whereas item No. (8), stating that

Competition between banks in terms of using and applying information technology for providing e-banking services is one of the difficulties facing the pricing process, has been at the last rank; its mean has reached (4.05); The total arithmetical mean has been (4.41); the orientation of responses has been very high.

Furthermore, total arithmetic mean of items composing third hypothesis has been compared with the standard mark (3)- the acceptance standard of the hypothesis- by using (t) test as shown in Table (8).

Table (8)

Arithmetical means, standard deviations and "T" test of items composing the third hypothesis in comparison with the standard mark (3)

Pricing's difficulties	No.	Arithmetical mean	Standard deviation	T value	Degrees of freedom	Statistical Significance level
	32	4.41	.336	18.757	19	.000

Table above illustrates that there are statistically significant differences ($0.05=$) between the arithmetic mean and the standard marks (3) where T-value has reached 10.967; the statistic significance has reached 0.000. As a result, this hypothesis, stating that Jordanian commercial banks face obstacles related to accounting systems hindering the pricing of e-banking services on the scientific basis, has been accepted.

Fourth hypothesis

There are statistically significant differences between the type of bank and the role of accounting knowledge in pricing e-banking services.

To check validity of this hypothesis, Manwitny test was used in order to find the significant differences between means' rank of responses of both, the commercial banks and the Islamic banks. They are outlined in Table below.

Table (9)

Manwitny test's results indicating to the significant differences between means' ranks of responses of both, the commercial banks and the Islamic banks

Dimensions	Group	No.	Means' ranks	Total of ranks	Manwitny test	Z-calculated value	Significance level
Accounting knowledge	Commercial	17	11.38	193.50	10.500	-1.650	.099
	Islamic	3	5.50	16.50			
Risks	Commercial	17	11.32	192.50	11.500	-1.556	.120
	Islamic	3	5.83	17.50			
The difficulties of pricing	Commercial	17	10.59	180.00	24.000	-.180	.857
	Islamic	3	10.00	30.00			

Table above illustrates the following :

- There are no statistically significant differences ($0.05=$) between the means of sample study 's responses of commercial banks and Islamic ones regarding the role of accounting knowledge in providing the appropriate data for pricing processes; Z value calculated has been - 1.650 and its statistical significance has been .099. this indicates that there is no effect of the difference of bank's type whether commercial or Islamic in the role of accounting knowledge required for providing information for pricing banking services.
- There are no statistically significant differences ($0.05=$) between means' ranks of sample study 's responses between commercial banks and Islamic ones regarding the role of accounting knowledge in providing information pertaining to the risks of banking services; Z value calculated has been – 1.556

and its statistical significance has been .120 . This indicates that there is no effect of the difference of bank's type whether commercial or Islamic in the role of accounting knowledge in providing information of E-banking services.

IV Results and Recommendations

5.1 Results

The study has reached the following results:

- Accounting knowledge contributes highly to provide the data necessary for making the decisions of pricing e-banking services in Jordanian commercial banks through providing information pertaining to the cost of developing and operating e-services.
- Accounting knowledge of e-banking services affect much highly the decisions of pricing made in Jordanian commercial banks, through identifying the losses resulted from the risks of information technology and the cost of providing security and protection standards as well as internal controls.
- Jordanian banks face difficulties which hinder the pricing of e-banking services on scientific basis; they include a lack of cost systems which enable the bank to calculate the cost of e-banking services, their risks and control standards required for reducing their risks in addition to a lack of accounting data of e-service revenues.

5.2 Recommendations

Based on the previous results, the researcher has recommended the following:

1. Jordanian banks shall adopt scientific bases for pricing their e-banking services.
2. The Central bank shall encourage Jordanian commercial banks to adopt scientific bases for pricing e-banking services.
3. Jordanian banks shall develop accounting information system in order to get information required for pricing accurately e-banking services.
4. Jordanian banks needs to prepare researches and studies on the cost of e-banking services in light of increasing investment of information technology to be a good ground for establishing e-banking services provided.
5. Jordanian banks shall announce their prices of e-banking services in their branches' halls in order to inform the clients with the costs of service. We expect that this announcement becomes one of motives of establishing competitive prices. Consequently, this will induce to conduct studies in field of identifying the optimal price of service.
6. Pricing banking service is one of fields addressing rarely whether in academic researches or studies conducted in the banks. therefore, the researcher has recommended to carry out further future studies pertaining to this field.

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