

## Investigating the Relationship between Computer Accounting Information Systems and E-Commerce Requirements in Iranian Service Companies Considering US-Canada Joint Project

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### Info Articles

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### Abstract

Regarding a joint project of the United States and Canada, this study examines the relationship between computer accounting information systems and e-commerce requirements in Iranian service companies. The present study is applied in terms of purpose and descriptive-analytical in terms of method. The study population included service sector companies listed on the Iranian Stock Exchange (n=55). The statistical sample included all employees of accounting departments, including 48 people. Questionnaires were distributed to 48 employees in the accounting department for the study sample and were fully retrieved. To collect data and information, first through the sources, references, books, articles, and scientific journals available in libraries, and in addition to previous studies related to the subject of study, the Internet was used to address all new cases on the subject of study. To collect the initial data, a questionnaire was used based on the measurement tool, which was prepared and designed based on the joint plan of the United States and Canada according to the questions. The study's questionnaire questions were based on a five-point Likert scale and a joint American-Canadian project (Al-Qishi, 2003) and (Mahern, 2009). The reliability of the questionnaire was evaluated and confirmed by Cronbach's test. SPSS software and a one-sample t-test were used to analyze the data. The results show a statistically significant agreement between computer accounting information systems and e-commerce requirements in Jordanian service companies under joint US-Canadian projects.

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## INTRODUCTION

Almost two decades ago, so-called e-commerce emerged, occupying a position in the market that, if not equal to or greater than a traditional commerce site, is at least parallel to it. E-commerce is defined as buying and selling goods and services over the Internet and through other global business networks. As a result of the development that our world is now witnessing in various fields and there is a constant increase in changes in manual accounting systems and their replacement with computer accounting information systems and given the importance of accounting information systems in companies provides crucial information to management that enables them to make rational decisions and control the performance of the company, in addition to facilitating the task of management in many strategic decisions and helps the company and management alike achieve the main goal and the maximum profitability. It is a set of methods and systems for collecting operations based on accounting data extracted from the facility's business operations, where they are computer-generated, classified, processed, and finally reported as a form of information that serves both the internal user and the external user of the facility.

The new e-commerce environment has posed significant challenges for companies in general and their accounting information systems in particular that exist in the means and mechanism in which the connection between accounting information systems and business operations is implemented concerning e-commerce. In this way, communication tools and the Internet replace intermediaries in the transaction and execution of transactions and commercial transactions in this type of trade and given that the purpose of e-commerce is to open new markets that were not previously in the light of traditional trade and crossing the political frontiers, using the tools and methods of contracting and electronic payment, companies must work in the development of their accounting information systems in accordance with the new requirements of e-commerce and create their competence to enter the field of e-commerce and benefit from new markets. By e-commerce, they can ensure their continuity and survival in market competition, increase their market share, and thus maximize their profitability.

This study focuses on the scientific facts that the accounting information systems affect the efforts of many accounting institutions on the environment and are affected by it, and since the advent of e-commerce in the development of policies, procedures, techniques, and principles help to create a balance between accounting information systems for companies and the needs of the unique e-commerce space. In early 2002, the American Certified Public Accountants and the Canadian Association of Certified Public Accountants launched a joint project called Website Trust Services, which identified principles that must be met in accounting information systems to meet e-commerce requirements. Therefore, the purpose of this study is to investigate the relationship between computer accounting information systems and e-commerce requirements in Iranian service companies according to a joint project of the United States and Canada.

### **Theoretical foundations of research**

#### **Accounting information systems**

Consequently, the accounting system as an information system consists of a set of steps and procedures that start from the inputs, go through different treatment methods, and end at the outputs. Accounting information systems seek to achieve a specific goal, i.e., to provide the necessary information (financial and quantitative) to provide stakeholders (internal and external) to assist them in economic decisions. Accounting information system has many features that must be worked on to make this system successful (Al-Dalahma, 2116, 22). Among those characteristics:

**Clarity:** This means that the system is clear and contains explanatory instructions that help to understand the system, and there are no terms that may prevent the system from being understood.

**Ease or simplicity** means the ability to apply and implement system operations easily and without problems.

**Accuracy:** means to implement and execute system operations correctly and without errors during the implementation process.

Speed: means the ability of the system to provide timely information to stakeholders.

Flexibility: means the ability of the system to cope with any changes in the system and the ability to change procedures in accordance with the work of the facility.

Proportionality: means that the system has a reasonable economic cost and is commensurate with the desired cost of the system.

The components of the accounting information system, according to e-commerce, will include a group of qualified people, computers, software, databases, procedures, and communication technologies (Yahya and Al-Habiti, 2113; 171-181).

### **E-commerce requirements**

E-commerce includes modern technologies in information and communication to conclude transactions and conduct trade exchanges to develop global trade and exchange development (Al-Zaidi, 2114, 4). E-commerce is defined as a new concept that filters the process of buying or selling products, services, and information through computer networks, including the Internet. The subject of e-commerce can be contracted between companies or between companies and individuals or between companies and governments, which shows how useful e-commerce has been in expanding the circle of transactions between all, as the Internet has appreciated. It has been involved in extensive sales operations that have developed the concept of e-commerce. Consequently, the prospects that e-commerce opens for companies, institutions, and individuals do not stop in a certain range, and the reason for its prosperity is the dependence of these companies on advanced technology (Lin, C, Burn, J. 2007).

Some business activities cannot be incorporated into e-commerce, such as perishable food and expensive items such as jewelry and chandeliers, which are not visible enough from a distance, regardless of any technology designed in the future. Many products and services require a significant number of potential buyers to be equipped and ready to shop online, for example, a grocery store that offers delivery services in only a few cities. Before using any technology, businesses calculate the return on capital, and this is difficult to invest in e-commerce because it is difficult to determine the costs and benefits.

There are many benefits to using e-commerce backed by the global information network (Joins et al., 2003), which include: E-commerce allows people to shop easily from home. Reviewing and monitoring electronic information is easier than paying by check, which helps protect against losses from fraud and theft. It provides an opportunity for investors to shop worldwide and allows them to ask each other about the supplier, the product, and its quality.

Companies that sell through the Internet seek to build trust between themselves and their customers and are eager to pursue the customer after the purchase, especially in the shadow of globalization, different cultures, and the disappearance of geographical boundaries. Because it is difficult to prosecute companies through these courses and to prove cases in the courts and the judiciary, especially in the case of deception or fraud, therefore, increasing trust between seller and buyer concerning e-commerce is essential to provide complete security and protection of the IT infrastructure so that the customer can be trusted and he can use his electronic credit card in purchases. The same is true of leading companies in this field, such as bookstores (Amazon), (Dell), and companies (Wal-Mart) (Al-Jadaya, 2119, 135).

Alsharayri (2011) discusses the impact of e-commerce on improving the accounting information system in Jordanian hotels. The most important results of this study showed that Jordanian hotel accountants have a positive attitude towards information technology, safety, and reliability, scalability, and controllability. They also show that they believe that accounting information systems are safer and more reliable than traditional systems and help reduce accounting errors. They also believe that it is possible to change and develop their accounting information systems without the need to replace the systems they already have, and also showed that e-commerce increases companies' market share. This study recommended the need for linking accounting and e-commerce information systems.

Huhtanen (2004) examined important success factors in integrating e-commerce and financial information systems. Because this study was a real case study of a company that runs e-commerce, the

researcher benefited by examining the success factors he recommended for activating the accounting information system for e-commerce operations. The researcher also benefited theoretically from the texts of this study for the independent variable of the current study (e-commerce).

Glover and Ijiri (2000) examine accounting income in the era of e-commerce: a study of its conceptual and analytical frameworks. The results showed major weaknesses in traditional accounting that contradict the requirements of e-commerce, especially in the absence of criteria, principles, or concepts to determine the mechanisms for determining the revenue from e-commerce; these weaknesses are evident. This study recommended establishing a Council for US Financial Accounting Standards and US Securities Law to review the conceptual framework and accounting standards with a focus on the e-commerce mechanism of e-commerce, which has no documentation.

Al-Jabri (2112) examined the adequacy of a theoretical framework for accounting in the light of e-commerce operations. This study aimed to identify the e-commerce environment, compare it with the traditional business environment, know the adequacy of the financial accounting conceptual framework to deal with the e-commerce environment, and identify the problems facing the accounting profession in terms of this environment.

All preceding studies have identified barriers to e-commerce use in general, and none have been based on a joint US-Canadian project. Except for the Matahen (2009) study, which focused on measuring the ability of external auditors to audit e-commerce operations, and the Al-Qashi study (2003), which aimed primarily to provide an accounting system model consistent with US and Canadian joint venture principles. According to the above, the researcher notes that what distinguishes his study from previous studies is that it sought to assess the compatibility between accounting information systems and e-commerce requirements in Jordanian service companies that relied heavily on joint ventures. Based on this, the following model was proposed.

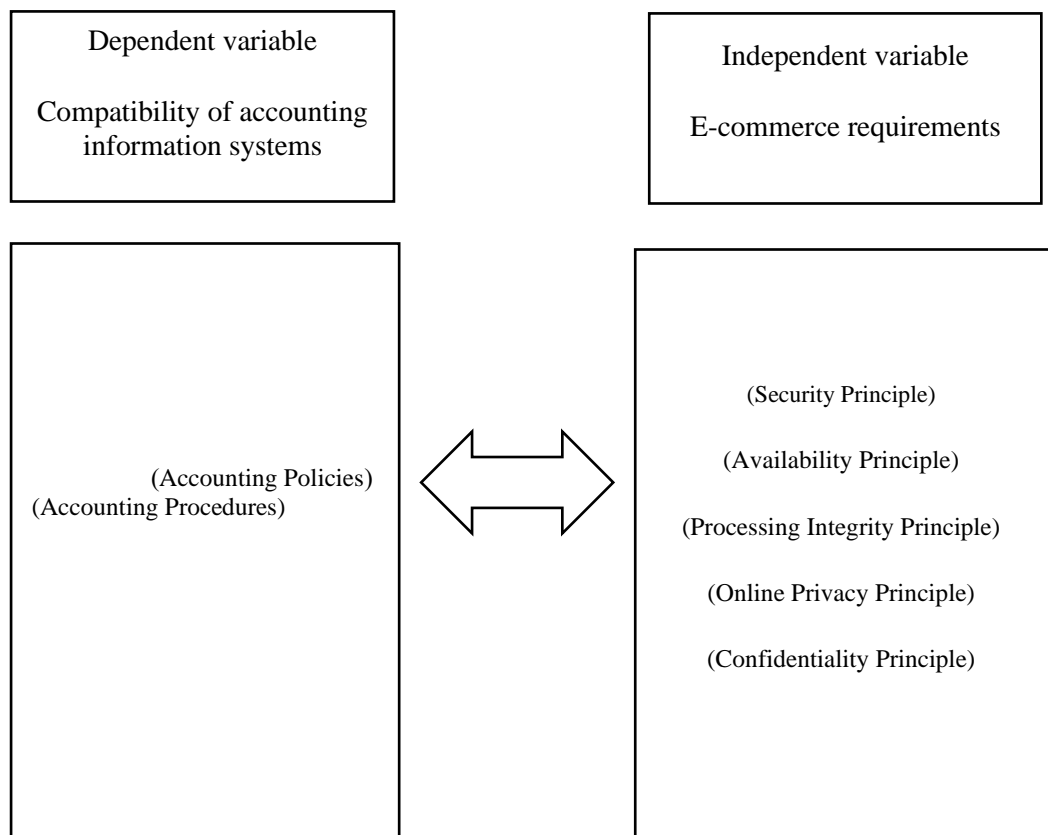


Figure 1. Conceptual model of research

## METHOD

The current study is applied in terms of purpose and descriptive-analytical in terms of method. The study population included service sector companies whose shares are listed on the Iranian Stock Exchange, and their number is fifty-five companies. The statistical sample included all employees of accounting departments, including (48) people. Questionnaires were distributed to 48 employees in the accounting department for the study sample and were fully retrieved. In order to collect data and information, first through the sources, references, books, articles, and scientific journals available in libraries, and in addition to previous studies related to the subject of study, the Internet was used to investigate all new cases on the subject of study. The researcher relied on a questionnaire based on a joint US-Canadian plan to collect the initial data through a measurement tool.

The study's questionnaire questions were based on a five-point Likert scale and a joint American-Canadian project (Al-Qishi, 2003) and (Mahern, 2009). The questionnaire was presented to several specialized and experienced professors and specialists in accounting sciences to judge its face and logical validity. The reliability of the questionnaire was assessed and confirmed by Cronbach's test. SPSS software was used to analyze the data. A one-sample t-test was used to measure the acceptance or rejection of the study hypotheses.

### Study Hypotheses

**Main Hypothesis:** According to the US-Canada Joint Project, there is no statistically significant agreement between computer accounting information systems and e-commerce requirements in Iranian service companies.

**Sub-Hypothesis 1:** According to the US-Canada Joint Project, there is no statistically significant agreement between computer accounting information systems and the need for a security principle.

**Sub-Hypothesis 2:** There is no statistically significant agreement between accounting computer information systems and the principle of availability required under the US-Canada Joint Project

**Sub-Hypothesis 3:** According to the US-Canada Joint Project, there is no statistically significant agreement between accounting computer information systems and the need for the principle of processing integrity.

**Sub-Hypothesis 4:** According to the US-Canada Joint Project, there is no statistically significant agreement between accounting computer information systems and the need for the principle of online privacy.

**Sub-Hypothesis 5:** According to the US-Canada Joint Project, there is no statistically significant agreement between accounting computer information systems and the need for the principle of confidentiality.

## FINDINGS

Then, the acceptance or rejection of research hypotheses was evaluated using a t-test, and the results were expressed as follows.

**Main Hypothesis:** There is no statistically significant agreement at the significant level ( $\alpha = 0.05$ ) between computer accounting information systems and e-commerce requirements in Iranian service companies according to the joint US-Canadian project.

**Table 1.** Results of (T) test to identify between computer accounting information systems and e-commerce requirements in Iranian service companies, according to a joint US-Canadian project

Row	Accounting information systems	Arithmetic mean	SD	t value	t importance
1	The principle of protection	3.92	0.50	19.612	0.000
2	The principle of system readiness	3.90	0.65	14.712	0.000
3	The principle of process integration	3.71	0.58	14.426	0.000
4	The principle of privacy in the network	3.75	0.56	15.549	0.000
5	The principle of confidentiality	3.86	0.60	15.633	0.000
-	Overall arithmetic mean	3.83	0.54	17.076	0.000

The results of Table (1) reveal that at the significance level of ( $\alpha = 0.05$ ), there is a statistically significant agreement between computer accounting information systems and e-commerce requirements in Jordanian service companies according to joint US-Canadian projects. Where the average of the total responses of the respondents (3.83) with standard deviation (0.54) is higher than the hypothetical average (test value = 3.00) and also, the calculated t value (17.076) is statistically significant at the significant level ( $\alpha \leq 0.000$ ) so it is significant at the significant level ( $\alpha = 0.05$ ).

The results of the table also showed that all (t) values calculated for the sub-variables (accounting information systems) were statistically significant ( $\alpha \leq 0.05$ ), and the values of arithmetic means shown were more than hypothetical means (test value = 3.00).

**Sub-hypothesis 1: There is no statistically significant agreement at the significance level ( $\alpha = 0.05$ ) between computer accounting information systems and the requirements of the security principle concerning the US-Canadian joint project.**

**Table 2.** Test results (t) to identify the compatibility of computer accounting information systems and the requirements of the security principle

Row	Items	arithmetic mean	Standard deviation	t value	t importance
1	Documenting definition of warranty, security, and protection policies.	3.04	1.82	2.060	0.045
2	Liaise and communicate system protection policies with responsible authorities and authorized users.	4.21	0.45	25.767	0.000
3	Develop practical methods to achieve the goal of system protection.	4.19	0.70	16.600	0.000
4	Monitor the system and take action to maintain and adhere to system protection policies.	4.06	0.75	14.332	0.000
5	Preset and disclosed protection policies.	3.88	0.95	9.931	0.000
6	Document protection requirements for users.	4.10	0.75	14.807	0.000
7	Clarity and detail of commitments to the system protection process for users.	4.10	0.92	11.976	0.000
8	Existence of mechanisms and procedures that prevent the entry of viruses and unauthorized programs.	4.29	0.87	14.200	0.000
9	Monitoring technological changes that occur in the environment of the protection system	3.67	0.95	8.483	0.000

	and their continuous monitoring.				
10	Evaluate the periodic protection system and ensure that it complies with established policies.	3.71	0.79	10.493	0.000
-	Overall arithmetic mean	3.92	0.50	19.612	0.000

The results of Table (2) indicate that at the significance level of ( $\alpha = 0.05$ ), there is a statistically significant relationship between computer accounting information systems and the requirements of the security principle concerning the US-Canadian joint project that the calculated values of (t) are statistically significant at the significant level of ( $\alpha \leq 0.05$ ). Likewise, the arithmetic means calculated in the table are more than the hypothetical average (test value = 3.00).

**Sub-hypothesis 2: There is no statistically significant agreement at the significance level ( $\alpha = 0.05$ ) between computer accounting information systems and the principle requirements of availability under the US-Canada Joint Project.**

**Table 3.** Test results (t) to identify compatibility between computer accounting information systems and system readiness requirements

Number	Items	arithmetic mean	Standard deviation	t value	t importance
11	Documenting and defining system readiness policies.	4.04	0.71	14.973	0.000
12	Linking system readiness policies to responsible authorities and authorized users.	4.25	0.78	15.435	0.000
13	Develop practical methods to achieve the goal of system readiness.	4.00	0.74	13.973	0.000
14	Monitor the system and maintain and adhere to system readiness policies.	4.10	0.77	14.278	0.000
15	Policies that define system readiness and are periodically approved and evaluated by specific individuals or groups.	3.92	0.94	10.424	0.000
16	Appoint system readiness officers and replace them periodically.	3.63	1.12	6.942	0.000
17	Clarity and details of commitments related to the preparation process and related to system protection policies for users.	3.69	0.68	11.941	0.000
18	This system includes technological techniques that help prepare the system for use.	4.25	0.75	15.997	0.000
19	Monitoring technological changes in the system environment and their impact on its readiness and continuous monitoring.	3.46	1.05	6.317	0.000
20	System readiness assessment course and its compliance with policies.	3.83	0.90	10.185	0.000
-	Overall arithmetic mean	3.90	0.65	14.702	0.000

The results of Table (3) show that at a significance level of ( $\alpha = 0.05$ ), there is a statistically significant relationship between computer accounting information systems and the requirements of the

principle of system availability according to the joint US-Canadian project, which the calculated values of (t) are statistically significant at the significant level ( $\alpha \leq 0.05$ ). Furthermore, the arithmetic mean values shown in the table are higher than the hypothetical mean (test value = 3.00).

**Sub-hypothesis 3: There is no statistically significant agreement at the significance level ( $\alpha = 0.05$ ) between computer accounting information systems and the requirements of the principle of processing integrity under the US-Canada Joint Project.**

**Table 4.** Test results (t) to identify compatibility between computer accounting information systems and requirements of the principle of processing integrity

Number	Items	arithmetic mean	Standard deviation	t value	t importance
21	Document and define policies to ensure system processing integrity.	3.88	0.64	14.885	0.000
22	Linking and communicating system processing integration policies with responsible authorities and authorized users.	3.81	0.64	14.186	0.000
23	Develop practical methods to achieve the goal of system processing integration.	3.94	0.63	15.742	0.000
24	Monitor the system and take measures to maintain and adhere to system processing integrity policies.	4.04	0.65	16.408	0.000
25	Policies that determine the integrity of a system's processing are periodically approved and evaluated by specific individuals or groups.	3.77	0.90	9.731	0.000
26	Appoint those responsible for policy-making to maintain the integrity and integrity of system operations and replace them periodically.	3.35	0.86	6.860	0.000
27	Transparency and detail of commitments to processing the integrity and integrity of operations, accompanied by clear and precise system protection policies for users.	3.44	0.71	9.125	0.000
28	Ensuring the completeness, accuracy, and safety of operations performed through the company's e-commerce system	3.58	0.71	10.577	0.000
29	Monitoring technological changes that occur in the system environment and their impact on operations' safety and completeness and continuous monitoring.	3.50	1.01	6.856	0.000
30	Period of safety assessment and completeness of operations and methods of protection of the system and their compliance with established policies	3.85	0.94	9.927	0.000
-	Overall arithmetic mean	3.71	0.58	14.426	0.000

The results of Table (4) indicate that at a significance level of ( $\alpha = 0.05$ ), there is a statistically significant between computer accounting information systems and the requirements of the principle of



processing integrity according to the joint Canadian-US project, where the calculated values (T) are a function statistically at the significance level ( $\alpha \leq 0.05$ ). Likewise, the arithmetic mean values obtained in the table are more than the hypothetical average (test value = 3.00).

**Sub-Hypothesis 4: There is no statistically significant agreement at the significance level ( $\alpha = 0.05$ ) between computer accounting information systems and online privacy requirements under the US-Canada Joint Project.**

**Table 5.** Test results (t) to identify compatibility between computer accounting information systems and requirements of the online privacy principle

Row	Items	arithmetic mean	Standard deviation	t value	t importance
31	Document and define its policies to ensure network privacy.	4.19	0.70	16.600	0.000
32	Linking and communicating the network privacy policy to the system with responsible authorities and authorized users.	3.96	0.61	16.364	0.000
33	Develop practical methods to achieve the goal of network privacy.	3.90	0.62	15.423	0.000
34	Monitor the system and take measures to maintain and comply with network privacy policies.	3.79	0.77	11.611	0.000
35	Adopt policies that define the privacy of dealing with the protection system and evaluate them periodically by specific individuals or groups.	3.79	0.82	10.860	0.000
36	Appointing officials to develop policies to protect the privacy of transactions and their periodic replacement.	3.58	0.82	9.144	0.000
37	Clarity of the network mechanism that connects the e-commerce system.	3.69	0.87	9.360	0.000
38	This system includes methods for determining the responsibilities of those responsible for the privacy system.	3.69	0.68	11.941	0.000
39	Monitoring technological changes that occur in the system environment and their impact on the issue of privacy and their continuous monitoring.	3.44	0.89	7.241	0.000
40	Periodically evaluate the steps of the privacy mechanism and the system and their compliance with the set policies.	3.48	0.71	9.497	0.000
-	Overall arithmetic mean	3.75	0.56	15.549	0.000

The results of Table (5) show that there is a significant agreement at the significance level ( $\alpha = 0.05$ ) between computer accounting information systems and the requirements of the principle of online privacy, according to the joint Canadian-US project, which values are calculated and (t) is a function at the statistically significant level ( $\alpha \leq 0.05$ ). Likewise, the arithmetic mean values shown in the table are higher than the hypothetical mean (test value = 3.00).

**Sub-hypothesis 5: There is no statistically significant agreement at the significance level ( $\alpha = 0.05$ ) between computer accounting information systems and the requirements of the principle of confidentiality under the US-Canada Joint Project.**

**Table 6.** Test results (t) to identify the compatibility of computer accounting information systems and the requirements of the principle of confidentiality (principle of confidentiality)

Row	Items	arithmetic mean	Standard deviation	Value t	t importance
41	Document and define its policies to ensure the confidentiality of the system.	4.15	0.74	15,337	0.000
42	Communicate the confidentiality policies of the system with the responsible authorities and authorized users.	3.94	0.48	20,764	0.000
43	Develop practical methods to achieve the goal of system confidentiality.	4.02	0.66	15,771	0.000
44	Monitor the system and maintain and adhere to the confidential policies of the system.	4.17	0.72	15,939	0.000
45	Adopt policies that define the mechanism for protecting the confidentiality of the information and periodically evaluate it by specific individuals or groups.	3.71	0.79	10,493	0.000
46	Appoint those responsible for developing policies to maintain information confidentiality and replace them periodically.	3.69	0.77	10,600	0.000
47	Clarity of the network link system mechanism to protect the confidentiality of information.	3.94	0.95	10,435	0.000
48	The system includes procedures that determine who is authorized to review and record changes to the information confidentiality protection mechanism.	3.79	0.74	12,051	0.000
49	Monitoring technological changes that have occurred in the system environment and their impact on the issue of confidentiality of the information and their continuous monitoring.	3.54	0.87	8,256	0.000
50	Evaluating mechanisms for maintaining information confidentiality and system protection regularly and their compliance with established policies.	3.71	0.84	9,855	0.000
-	Overall arithmetic mean	3.86	0.60	15,633	0.000

The results of Table (6) express that there is a statistically significant level of significance ( $\alpha = 0.05$ ) between computer accounting information systems and the requirements of the principle of confidentiality according to the joint US-Canadian project that computer values (T) are statistically significant when the significance level is ( $\alpha \leq 0.05$ ). Likewise, the arithmetic means calculated in the table are more than the hypothetical average (test value = 3.00).

## CONCLUSION

This study investigates the relationship between computer accounting information systems and e-commerce requirements in Iranian service companies according to a joint project of the United States and Canada. The results showed that there is a statistically significant agreement between computer accounting information systems and e-commerce requirements in Iranian service companies according to joint projects of the United States and Canada. The results revealed a statistically significant agreement between computer accounting information systems and the requirements of the security principle according to the joint American-Canadian project. The results indicated a statistically significant agreement in the level of significance ( $\alpha = 0.05$ ) between computer accounting information systems and the requirements of the principle of system availability according to the joint project of the United States and Canada. This result clarifies that considering the provision of accounting information systems for readiness means that the standby system is in accordance with the policies set in the service companies under review; this enables it to operate in accordance with the requirements of e-commerce.

The results reveal a statistically significant agreement between computer accounting information systems and the requirements of the principle of processing integrity according to the joint Canadian-US project. According to the joint project of Canada and the United States, the results disclosed that there is a significant agreement between computer accounting information systems and the requirements of the principle of online privacy. The results showed a statistically significant agreement in the level of significance ( $\alpha = 0.05$ ) between computer accounting information systems and the requirements of the principle of confidentiality according to the joint American-Canadian project.

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