

Electronic Collection of Public Revenue in the Light of the Corona Virus Pandemic in Jordanian Governmental Institutes

REEM OQAB AL-KHASAWNEH

Department of Financial and Administrative Sciences
Al-Balqa Applied University -Irbid University College
Irbid
JORDAN

Abstract: This study aims at identifying electronic payment systems used in Jordan as well as their components; the study also illustrates to which extent the use of these systems contributes to the stability of revenue collection processes in the Hashemite Kingdom of Jordan; in addition, it examines the extent of the availability of internal control procedures in electronic payment systems in order to ensure their continued use and cash flow of revenues during the Covid-19 pandemic. Furthermore, the study identifies the risks arising from electronic collection and payment systems affecting revenue collection process in the light of the Covid-19. Moreover, it illustrates the challenges which affect the use of electronic payment systems. To achieve the purposes of the study, the researcher has used inductive method as well as descriptive analytical method which examines accurately the phenomenon in a field side of study. In addition, a questionnaire has been designed in order to find out the responses of study sample composed of the employees of governmental departments which used electronic payment systems; 4 questionnaires have been distributed to employees of each department; they are financial manager, director of collection department, accountants responsible for records and settlements related to electronic payment. Total of 63 questionnaires have been distributed; 55 questionnaires have been retrieved and valid for statistical analysis; statistical package for the social sciences (SPSS) has been used. The study has reached a set of results. Most importantly, using electronic payment and collection systems during the Covid-19 pandemic has contributed to the stability of revenue collection processes; in addition, availability of internal control procedures in electronic collection processes has contributed to the continued use and cash flow of revenues during the Corona virus pandemic. Moreover, the study has illustrated the most important components of electronic payment and collection systems.

Furthermore, the study has concluded that there are various risks arising from electronic collection and payment processes which affect revenue collection process during the Covid-19 pandemic. And the study has illustrated the most important challenges affecting the use of electronic systems of collecting the revenues in Jordan.

Key words:- Corona Virus Pandemic, Electronic Payment Systems, Electronic Collection, Revenues. Jordan

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1 Introduction

The Corona virus pandemic (Covid-19) has created a new reality due to precautionary measures affecting the economies of the countries. In order to achieve the conditions of physical distancing and quarantine, the countries all over the world have been forced to shift towards electronic systems in order to ensure the continuity of business, education, services and production in some cases. In addition, the electronic systems services related to revenue collection and payment of taxes, fees and salaries. Thus, these systems are the most important technical methods which keep the continuity of country's revenue flows. Consequently, the country can pay all expenses including salaries, wages,

health supplies, medicines and a purchase of respiratory care equipment because it can quickly collect the revenues and supply the governmental institutes with the money required. Electronic collection is a set of integrated systems and programs which aim at facilitating the procedures of electronic secure payment processes. In addition, electronic collection service aims to save time and effort, reduce the costs and provide the services the clients need. Furthermore, it accelerates easily the implementation of payment process. The idea of applying the electronic collection contributes to the reduction the costs and facilitation of procedures as well as decrease of crowding and pressure in revenue collection centres compared to the

traditional methods which become unreliable and a waste of time and effort, and overburden the clients and employees. Accordingly, traditional collection methods used in the country usually cause a delay in the collection process.

The study is important because it examines the financial and economic crisis which has accompanied the Covid-19 pandemic; it is considered one of the longest and most influential crises affecting all countries of the world and resulting in the scarcity of the financial resources. In this study, the most prominent payment and collection systems used in Jordan are identified. In addition, it illustrates to which extent these systems are useful and successful in managing the covid-19 pandemic through maintaining the revenue flows during the periods of ban and quarantine; the study also identifies to which extent these systems contribute to the conservation of country resources of revenues; it also illustrates the success of these systems in managing the financial side and providing the liquidity. Furthermore, following topics are discussed in the study: collection and payment systems used in Jordan, their relevant advantages and risks, and their effectiveness of ensuring the stability of profitability of electronic revenues collection despite the Covid-19 pandemic.

1.1 Problem of Study

Electronic systems used in governmental units in the Hashemite Kingdom of Jordan have developed [1]; all transactions have been computerized into electronic government; and electronic payment and collection systems become an important part of the electronic government. In addition, the Covid-19 has accelerated the use and application of electronic payment and collection technology in the governmental units; this technology plays a positive role in achieving the balance and obtaining country's resources in the light of health quarantine and ban. This study answers the following main questions:

To which extent are electronic payment and collection systems used in Jordanian governmental institutes in the light of the Corona Virus pandemic and what is their impact on the revenues?

1.2 Hypotheses of Study

First hypothesis: There is a statistically significant relationship between the use of electronic payment and collection systems in Jordan and stability of governmental revenue collection process during the Corona virus pandemic; or

Second hypothesis: There is a statistically significant relationship between appropriate internal control procedures available in electronic payment and collection systems and assurance of the continued use and cash flow of revenues during the Covid –19 pandemic.

Third hypothesis: There is a statistically significant relationship between the risks of electronic revenue collection and payment processes and assurance of the continued use and cash flow of revenues during the Corona virus pandemic.

Fourth hypothesis: There is a statistically significant relationship between the components of electronic collection and payment systems and the maintenance of the stability of the revenues in during the Covid-19 pandemic; and

Fifth hypothesis: There are various challenges and obstacles which affect the use of electronic revenue collection and payment systems and methods in Jordan.

2 Previous Studies and Theoretical Framework

2.1 Previous Studies

Various studies have discussed electronic collection and payment systems which are considered modern and important topics, particularly since all countries of the world are moving towards financial technology and digital currencies as well as various forms of technology. The most important studies are discussed as follows:

-study [2] identified the nature and risks of electronic payment systems as well as control methods; the study aimed at illustrating the types and methods of electronic payment in addition to their working mechanisms; it also identified to which extent these types are appropriate for the technical developments. This study was important because it drew attention to the foundations of strengthening internal control systems used in electronic payment methods and the programs of managing the operational risks; such programs provided the bank with security and safety and improve its ability to achieve the required goals and ensure its continuity. In addition, the study reached a set of results; most importantly, due to new environment of banking work and strong competition as well as technical application and electronic payment, the banks were forced to find out new mechanisms of the use and

variety of electronic banking services in order to retain the clients and attract new clients. Furthermore, the study recommended that new methods and mechanisms of using and diversifying electronic banking services should be created in order to retain the clients and attract new clients. Study [3] aimed at identifying the role of the electronic receipt of public revenues in enhancing the effectiveness of control in the public sector in Jordan. In order to achieve the purposes of the study, a questionnaire was designed and distributed by hand to all internal auditors, external controls unit officials, and financial supervisors who represented the population of the study. The study reached a set of results; most importantly, there was a positive role of protecting the assets, information and communication in enhancing the effectiveness of control in departments of public sector in Jordan in accordance with electric receipt of public revenues. Finally, the study reached a set of recommendations; most importantly, the systems of electronic receipt of revenue shall be necessarily activated in public sector in Jordan. In addition, the study touched upon the role of electronic receipt of public revenues in enhancing the effectiveness of control in public sector in Jordan. The study [1] aims to show the impact of the application of e-government on government accounting system, as a main source of accounting information in the government unit and to determine the most important effects of e-government on government accounting information systems components. The research has found several important conclusions and recommendations for the development of government accounting information system under e-government system, study [4] touched upon the topic of electronic collection: an entrance to guardianship over public funds. The study illustrated that electronic collection system became important in order to meet the requirements of collection process as well as electronic data in Sudan. In addition, the study showed that this system affected positively the economy. In addition, the study indicated that Sudan has considered an advanced country in a field of information technology infrastructure and it should be independent in the fields of practical life; governmental departments and centers in Sudan has relied on traditional methods in terms of receipts and paper documents. The study found that a national committee including all relevant authorities – Ministry of Finance, Central Bank of Sudan, National Communication Center, illegal collection committee and experts specialized in this filed-should be necessarily formed; and it should have

wide powers in order to be able to plan and supervise the implementation of electronic collection projects; rules shall be issued for all governmental units in order to provide their electronic services and motivate the citizen if he/she pays electronically. The study found that electronic collection has affected positively the economy. [5] Problem of study was that a weakness of accounting information systems and relying on manual methods of tax work have made the provision of information at a right time and lower price difficult; these methods have affected negatively the procedures of settling accounts of tax of the companies which aim at providing accounting information for the purposes of planning and increasing tax proceeds, thereby achieving the streamline of information between the companies and tax management. The study aimed at identifying the concept, importance and purposes of accounting information systems; in addition, it was to illustrate the concept and types of decisions of settling accounts of tax. This study was important because it has measured the extent of the effectiveness of information systems in the process of settling accounts of tax so that tax proceeds which have considered a vital part of country's revenues could be accurately and fairly achieved. For the purposes of the study, inductive and deductive approaches as well as historical and analytical approaches have been used. The study found that there has been a statistically significant relationship between data inputs of accounting information systems and the decisions of settling accounts of tax; in addition, there has been a statistically significant relationship between the process of operating the information systems and decisions of settling accounts of tax. Finally, the study recommended that the process of tax collection shall be necessarily improved according to accounting information systems. Study [6] identified the most important challenges and difficulties the electronic payment methods have faced in Algeria. The study aimed at illustrating the types of electronic payment methods as well as their working mechanisms; in addition, it was to outline the challenges related to electronic banking environment as well as the nature of banking control systems over electronic payment methods; it also identified to which extent these methods have been appropriate for the technical developments; the study has been important because the topic of electronic payment method is new and modern and occupies an important place in our daily life; in addition, this study has examined the methods of eliminating the obstacles which limits the spread

and success of these methods. Furthermore, the study has used descriptive and analytical approach as well as case study approach; it has reached a set of results; most importantly, new environment of banking business and strong competition as well as technical applications of electronic payment tools have forced the banks to find out new mechanisms of using and diversifying electronic banking services in order to retain the current clients and attract new client. Finally, the study has recommended that new mechanisms and methods of using and diversifying electronic banking services shall be found in order to retain the current clients and attract new clients.

Study [7] has touched upon the role of electronic collection and payment system and its impact on settling accounts of tax – a field study on tax debts. The problem of study has been an absence of electronic collection and payment system which can facilitate the procedures of settling accounts of tax, and reduce the complications resulting from a large number of routine procedures associated with the process of settling accounts of tax; this system also can reduce time and effort which may be exerted. In addition, a lack of modern technological and scientific methods and the use of traditional methods in tax work make the procedures complicated and time of process completion longer.. In addition, the study has determined the components which must be provided in order establish electronic payment and collection system; it also has illustrated the advantages of using electronic collection and payment system in the process of settling accounts of tax. Furthermore, the study has reached a set of recommendations related to settling accounts of tax which electronic payment and collection system relies on. To achieve the purposes of the study, descriptive analytical approach has been used. Finally, the study has reached a set of results; most importantly, prevailing legislative and legal structure which provide an appropriate atmosphere for electronic services has contributed to the development of procedures of settling accounts of tax; in addition, government policies which have aimed at spreading electronic services such as digital communication networks have contributed to facilitation of the procedures of settling accounts of tax. Social and cultural environment in Sudan poses a challenge to the institutes which shall convince the client of using the card, thereby entering new payment culture. Study [9] has aimed at identifying the contribution of governmental e-accounting information systems to the management of Covid-19 crisis and the reduction of its impacts of Jordan s economy. He

study has examined the importance of basic components of e -systems and the characteristics of E-Systems quality. The study found that the electronic government accounting system in contributed, through its characteristics and components, to managing and minimizing the effects of the Covid crisis at the beginning of the crisis, and now it contributes to providing information to its management.

2.2 Electronic Revenue Collection

Electronic collection is a system enabling the government to collect automatically the revenues through the means of an electronic collection system; it reduces the required time and effort and achieves the quality of financial performance indicators as well as prevents various risks the financial resources may face. In addition, electronic collection system uses electronic, magnetic and electromagnetic techniques and means in order to exchange and save the information and receive public revenues.

Electronic collection system has been defined as the system which records all payment data related to all types of public funds [9] which are as follows:

- Governmental fund managed by the government,
- Non-governmental fund managed by the government, and
- Non-governmental fund which is not managed by the government.

Jordanian legislator [10] has defined public revenue collection methods as an electronic transfer of the funds received as public revenues and these methods, created by electronic means and an authorization of payer to electronic service provider, include the following:

1. credit card payment using electronic authorization devices,
2. internet payment through the following method :
 - Electronic money transfer from account to account,
 - Credit cards, and
 - Debit cards.
3. Bank or approved financial company payment.

Using electronic revenue collection system in governmental units achieves various advantages. For example, at a level of the individuals, using electronic revenue system reduces congestion and pressure; it also reduces the process of handling the cash, thereby decreasing the transmission of infection of microbes, including the Covid -19. In addition, using electronic system may reduce the

risks of transferring the cash to the individuals or governmental institutes. Consequently, electronic payment channels such as ATMs, cell phone applications, internet and payment companies like Fawaterkom and Dinark, are being used for paying tax obligations and governmental fees; these electronic channels contribute to the reduction of operational costs in governmental units and institutes; the citizens can be quickly provided with various service since cash payment services are available 24/7 (24 hours a day, seven days a week). At a level of financial management, applying electronic revenue collection systems has contributed to the improvement and development of the process of managing public fund. In addition, country's resources can be obtained in a timely manner when electronic revenue collection systems are used. Furthermore, these systems provide an appropriate information which identifies the possibility of covering the expenses from the collected revenues or illustrates the need for borrowing or the application of a certain financial policy.

Accordingly, the importance of electronic collection has greatly appeared during the Covid-19 pandemic because public sector's institutes have obtained their resources in a timely manner and have not imposed burdens on country's general budget in order to cover their expenses and obligations. Furthermore, electronic collection has been a guarantee of the continuity of process of collecting public revenues in an orderly and uncomplicated manner. Moreover, it has contributed to the stability of the general budget because the process of electronic revenue collection is stable and the revenues increase. As a result, laws, legislations and regulations governing electronic collection have been enacted in accordance with the accounting standards.

2.3 Control Over Electronic Collection Processes

Controlling over electronic revenue collection systems provides the minimum level of security of exchanging the data between electronic collection systems, governmental systems and database linked to governmental payment and citizen information. Governmental authorities seek to provide the procedures of controlling data security and safety. As a result, electronic revenue collection systems become reliable and credible especially since the methods of prevention of risks and relevant threats are provided.

Internal control over data safety and security has an ability to know all failed access attempts and reveal their reasons and sources. In addition, it protects the

data from unauthorized access; it also has an ability to restore any missing procedure through backup copies. These systems are flexible and able for amending security procedures. A clear policy of data security and safety shall be available while exchanging electronic collection processes; and data security and safety process shall be organized through using an administrative system ensuring the application of the policies and the presence of procedures of human security and control in order to reduce human risks. Furthermore, the procedures of insurance of information systems and energy resources shall be available; detailed procedures of managing and controlling system access process shall be developed; moreover, the system shall continuously be developed and maintained in order to keep pace with the development of financial systems and data protection systems; in addition, an availability of security requirements shall be ensured in order to protect the system from penetration processes. Furthermore, continuity plans of electronic collection systems and processes shall be updated and developed through preventing or reducing the cases of unemployment and work stoppage resulting from the accidents; such cases may harm data security and electronic collection systems. The most important control methods of electronic collection systems include the following:

- Encryption which aims at protecting data confidentiality and safety,
- Anti-virus programs which perform a periodic check of technological system,
- Backup copies which confront the risks of data loss,
- Firewalls: The presence of firewalls become necessary because electronic government and electronic sites are being used for performing governmental transactions and services as well as electronic collection processes; firewall is a network security system which monitors and filters incoming and outgoing network traffic based on predetermined security criteria, and
- User identification methods which protect data system from the risks and impersonation; these methods include identification words, passwords or biological characteristics such as voice, picture or fingerprint.

2.4 Risks of Electronic Revenue Collection System

Electronic payment and collection systems face a set of risks; an integrated plan, therefore, must be developed in order to confront these risks which must seriously be taken into account; in addition, risks which may occur in present or future shall be

remedied in order to achieve the goals of electronic collection programs [11][13] [3]; these risks are as follows:

- Regulatory risks: institutes of public sector shall change the regulatory aspects of their works when electronic payment and collection systems are used. In other words, if the regulatory aspects are well designed and managed and continuously updated, they will provide the departments of public sector with the support and ability to adapt effectively. On the contrary, if these aspects are old and based on the bureaucracy, the level of efficiency decreases and administrative corruption spreads, the process of change will be negatively affected and the regulatory aspects will turn into the risks which prevent the achievement of change goals.
- Risks of security and protection system penetration: electronic collection systems may face penetration processes performed by hackers in order to tamper or steal these systems.
- Operational Risks: these risks arise from a lack of adequate insurance of this system, a failure of designing these systems, an error of operation software or wrong information.
- Exposure risks: they result from a failure of some system to achieve the control over all the stages of electronic collection process, to ensure that no modifications have been made to clients' messages while transmitting through electronic channels and to ensure that transaction confidentiality is maintained.
- Digital gap and ignorance of using electronic payment systems: training and learning on the importance and use of electronic payment and collection are not available to the citizens. Digital gap due a lack of information of these systems, therefore, occurs.
- Legal risks: Transforming the departments of public sector into the use of electronic payment systems requires a new legal environment. However, a change of approved legal system is a complicated matter which depends on a set of steps and an approval of parliament. Accordingly, accomplishing this change takes time and it also creates various political and organizational conflict among the departments of public sector; in addition,

data protection shall be taken into account while developing the legal framework.

2.5 Components of Electronic Payment and Collection System

Based on the previous risks, the researcher believes that a set of components contributing to the success of electronic payment and collection and achievement of relevant goals shall necessarily be provided; these component may include the following:

- Providing legislative and legal infrastructure which is appropriate for supporting the trust of people in the use of these systems,
- Providing the infrastructure which is appropriate for electronic services serving all regions,
- Providing the devices and televised training courses or workplaces in order to demonstrate the advantages of these services and encourage their use through the discounts on the collected amounts through electronic channels; in addition, a great attention shall be paid to security and protection system; the best electronic systems and means shall be used.

2.6 Challenges or Limitations Facing the Application of Electronic Revenue Collection Systems

- Electronic payment and collection systems face a set of challenges hindering the processes of fully using them; these challenges are summarized as follows:
- Low level of knowledge (a lack of adequate experience) of electronic systems, especially electronic collection systems among governmental services' recipients,
- Weakness of prevailed legislative and legal structure which provides an appropriate environment for the processes of electronic revenue collection,
- low level of communication networks which may not be available in some areas,
- A lack of trust among some the users of electronic systems in general and the users of electronic collection in particular due to penetration fears, and
- high prices of devices required for implementing electronic payment processes.

In addition, Risks of payment conflict may occur if the server is under pressure or the program is disabled. As a result, problems of electronic payments will emerge, and the amount sent or received may, therefore, be different from the amount agreed upon between the two parties.

3 Field Study

3.1 Methodology of Study

In order to test the hypotheses of study, inductive method have been used; previous studies of accounting information systems and financial payment systems have been examined; in addition, relevant scientific researches and articles including foreign, regional and local articles have been revised. Furthermore, descriptive analytical method has been used in order to study accurately the phenomenon in the field part of study. Questionnaire tool has been used to figure out the responses of sample study which includes the employees of governmental departments using the electronic payment systems.

3.2 Population and Sample of Study

The population of study includes all governmental units and independent bodies; the sample of study is composed of the institutes which have frequently used electronic collection systems during the Corona virus pandemic; they are as follows: Ministries of finance, industry and commerce,

directorates of income tax, sales tax and customs (the main source of revenues) and governmental universities, where they have been chosen from the independent bodies since they have obtained independently the revenues through applying electronic revenue collection systems and the government has fully relied upon them during the period of the Corona virus pandemic.

4 questionnaires have been distributed to employees of each department; they are financial manager, director of collection department, accountants responsible for records and settlements related to electronic payment. Total of 63 questionnaires have been distributed; 55 questionnaires have been retrieved and valid for statistical analysis; statistical package for the social sciences (SPSS) has been used.

Five-point Likert scale has been used in order to find out the responses of study sample's respondents regarding the questions of questionnaire's axes as follows:

Table 1. Illustrates these coefficients; and there ratios have been considered appropriate for the purposes of this study.

Classification	Disagree	Strongly disagree	Neutral	Agree	Strongly agree
Degree	1	2	3	4	5
Weighted average	1 – 1.8	1.81 – 2.6	2.61 – 3.4	3.41 – 4.20	4.20 - 5
Response orientation	Very low	Low	Moderate	High	Very high

3.3 Reliability of Study Tool

In order to ensure reliability of study's tool, internal consistency (Cronbach's alpha) coefficient has been calculated; and it has ranged from 0.84 to 0.92.

Table 2. Internal Consistency Cronbach's alpha) Coefficients of Study Fields

Field	Internal Consistency
Electronic payment and collection systems and their role in the stability of collection processes during the Covid-19 pandemic	0.88
Providing control systems in payment and collection systems contributes to the continued	0.89

used and cash flow during the Corona virus pandemic.	
There are risks accompanying the processes of payment and collection of governmental revenues.	0.95
Main components of electronic payment and collection systems	0.89
There are challenges (obstacles) which limit the use (handle) of payment and collection systems	0.89

3.4 Data Analysis and Hypotheses Testing

3.4.1 First Hypothesis

First hypothesis has touched upon the relationship between the use of electronic revenue payment and collection systems in Jordan during the Corona virus pandemic and the stability of revenue collection process. In addition, it has touched upon the types of electronic payment used in the process of electronic collection in Jordan and the advantages of using

electronic collection systems which the governmental institutes, units and authorities as well as the role of these system in the continuity and stability of cash flows.

To test the validity of this hypothesis, arithmetic means and standard deviations of performing of study's sample regarding first hypothesis have been extracted; table 2 outlines them.

Table 3. Arithmetic means and standard deviations of responses of study's sample regarding first hypothesis touching upon the relationship between electronic revenue payment and collection system and the continuity of cash flow

Statements	Arithmetic mean	Standard deviation	Response orientation
The following electronic payment and collection systems have been used to collect the revenues in the governmental units during the Corona Virus pandemic			
Electronic money	1.18	.98	Very low
Electronic applications such as Mahfazti application or Vapulus payments application and Zain cash Jordan	4	.98	High
Bank applications	4.14	.88	High
Through (eFAWATEERcom)	4.16	.78	High
By Cell phone	4.19	.78	High
Credit card and prepaid cards	4.88	.89	Very high
The following statements relate to the advantages of the use of electronic payment and collection systems and their role in the continuity of revenue flow during the Corona virus pandemic			
Using electronic payment and collection systems has contributed to the continuity of cash flow during the periods of quarantine and ban	4.44	.88	Very high
Using electronic payment and collection systems has contributed to the collection of the revenues in a timely manner	4.5	.77	Very high
Diversifying the electronic collection methods which suits all segments of the citizens has contributed to the continuity of revenue collection process during the Corona virus pandemic.	4.20	.67	High
Electronic payment and collection systems have contributed to the reduction of operation cost in the units	4.18	.88	High
Electronic revenue payment and collection systems have contributed to the improvement and development of managing public money .	4.60	.94	Very high
Electronic revenue payment and collection systems have contributed to the improvement and development of controlling the public money.	4.89	.98	Very high
Because of using electronic payment and collection systems, collecting the amounts can be performed any time and during holidays without commitment to work hours.	4.90	.98	Very high
Electronic payment and collection systems have contributed to the reduction of pressure and congestion, thereby limiting the spread of the Corona virus	4.5	.77	Very high

Electronic payment and collection systems have contributed to the provision of information appropriate for identifying the possibility of expense control.	4.56	.77	Very high
Electronic payment and collection systems have contributed to the reduction of the expenses of revenue collection	4.60	.79	Very high
Total	4.5	.91	Very high

Table 3 shows the following:

Regarding the electronic payment and collection systems, the results of analysing respondents' responses illustrate the following:

- There is a diversity of using the electronic payment and collection systems; and the most used electronic payment and collection system is credit cards; an arithmetic mean reaches 4.88 and response orientation is very high.
- The unused electronic payment and collection system is electronic money and the arithmetic mean reaches 1.1; response orientation is very low.
- Regarding the rest of electronic payment and collection systems, the arithmetic means range between 4.14 – 4.19 and response orientation is high.

Regarding the role of electronic payment and collection systems in the stability of revenue collection during the Corona virus pandemic, arithmetic means have ranged between 4.18 – 4.90; ;

the statement stated that electronic payment and collection systems have contributed to the reduction of operation cost in the units has reached the lowest arithmetic mean because the cost can be reduced if the number of employees and accountants decreases. The statement stated that because of using electronic payment and collection systems, collecting the amounts can be performed any time and during holidays without commitment to work hours, has reached the highest arithmetic mean which is 4.90; and total arithmetic mean has reached 4.5. Sample study's responses agree highly that the electronic collection systems have contributed to the stability and continuity of revenue flow during the Corona Pandemic, especially during the periods of health quarantine and ban.

In addition, arithmetic mean of the statements which has formed first hypothesis has been compared with standard mark 3 - hypothesis acceptance standard- by using t-test as stated in table 3

Table 4. Arithmetic Means, Standard Deviations and T-test of Statements which has formed first hypothesis in comparison with Standard Mark 3

The role of electronic revenue collection systems in the continuity of cash flow	Arithmetic Mean	Standard Deviation	T-Value	Statistical Significance
	4.5	.91	9.755	000.

Table 4 indicates that there are statistical differences at ($\alpha \geq 0.05$) between arithmetic mean and standard mark 3; T-value has been 9.755; statistical significance has been 0.000. Thus, this hypothesis stipulating that there is a statistically significant relationship between the use of electronic payment and collection systems in Jordan and stability of governmental revenue collection process during the Corona virus pandemic;

3.4.2 Second Hypothesis Testing

Second hypothesis has touched upon the relationship between internal controls of electronic revenue collection and payment systems used during the Corona pandemic and the stability of revenue collection process.

To test the validity of this hypothesis, arithmetic means and standard deviations of performing of study's sample regarding second hypothesis have been extracted; table 4 outlines them.

Table 5. Arithmetic means and standard deviations of responses of study's sample regarding second hypothesis touching upon the relationship between internal controls of electronic revenue payment and collection systems and the continuity of cash flow

Statements	Arithmetic mean	Standard deviation	Response orientation
Providing the following internal controls of electronic payment and collection systems has contributed to the			

encouragement of handling these systems, thereby continuing the revenue flow during the Corona virus pandemic			
Encryption which aims at protecting the information and maintain its confidentiality and integrity	4.30	0.67	Very high
Virus protection	4.4	0.77	Very high
Using user identification methods protects the data and information system from the dangers and impersonation; these methods may include password or biological characteristics such as voice, picture or fingerprint.	4.45	0.87	Very high
Governmental authorities pay attention to provide the procedures and tools of control over data security and safety in order to add credibility and reliability of collection system through identifying the methods of preventing the risks and relevant threats.	4.35	0.70	Very high
Electronic link between the governmental units and electronic payment institutes has contributed to the provision of the information related to collection processes when they occur without a need for referring to the user.	4.39	0.89	Very high
Governmental units must keep backup copies in order to face the risk of data loss.	4.38	0.88	Very high
The trend towards using electronic government and sites of governmental units in order to perform governmental transactions and service as well as implement electronic collection processes through these sites makes the provision of firewall necessary.	4.63	0.90	Very high
Providing internal controls of electronic payment and collection systems has added the trust in these systems, thereby achieving the continued use.	4.55	0.89	Very high
Internal controls have contributed to the reduction of tax evasion.	4.56	0.88	Very high
Providing internal control systems has limited the errors and frauds.	4.35	0.78	Very high
Total	4.43	0.82	Very high

Table 5 shows arithmetic means and standard deviations of statements of the hypothesis; Arithmetic means have ranged between 4.30 – 4.63; the statement stated that the trend towards using electronic government and sites of governmental units in order to perform governmental transactions and service as well as implement electronic collection processes through these sites makes the provision of firewall necessary, has reached the

highest arithmetic mean which is 4.63; and total arithmetic mean has reached 4.43. Sample study's responses agree highly that providing internal controls has contributed to the continuity of revenue flow during the Corona Virus pandemic.

In addition, arithmetic mean of the statements which has formed second hypothesis has been compared with standard mark 3 - hypothesis acceptance standard- by using t-test as stated in table 5.

Table 6. Arithmetic Means, Standard Deviations and T-test of Statements which has formed second hypothesis in comparison with Standard Mark 3

Role of internal control systems in electronic payment and collection systems and the continuity of cash flow during the Corona virus pandemic.	Arithmetic Mean	Standard Deviation	T-Value	Statistical Significance
	4.43	82.	8.689	000.

Table 6 indicates that there are statistical differences at ($\alpha \geq 0.05$) between arithmetic mean and standard mark 3; T-value has been 8.689; statistical significance has been 0.000. Thus, this hypothesis stipulating that, there is a statistically significant relationship between appropriate internal control procedures available in electronic payment and collection systems and assurance of the continued use and cash flow of revenues during the Covid –19 pandemic, has been accepted.

3.4.3 Third Hypothesis Testing

Third hypothesis has touched upon the relationship between the risks of electronic revenue payment and collection processes and the maintenance of the stability of revenues. To test the validity of this hypothesis, arithmetic means and standard deviations of performing of study’s sample regarding third hypothesis have been extracted; table 6 outlines them.

Table 7. Arithmetic means and standard deviations of responses of study’s sample regarding third hypothesis touching upon the risks of processes of electronic revenue collection processes

Statements	Arithmetic mean	Standard deviation	Response orientation
Electronic collection processes are accompanied by the risks as all electronic systems; these risks can affect revenue flow as follows:			
Risks of penetration of security and protection systems	4.38	.88	Very high
Risks of tampering and stealing the systems	4.66	.90	Very high
Operations risks resulting from a lack of adequate insurance and design of systems	4.55	.89	Very high
Operation risks including error of software operation	4.56	.88	Very high
Failure of some systems to achieve the control over all the stages	4.35	.78	Very high
Failure to maintain transaction confidentiality	4.38	.88	Very high
Ensuring that customer messages are not amended while transmitting via electronic channels	4.49	.88	Very high
Total	4.49	.88	Very high

Table 7 shows arithmetic means and standard deviations of statements of third hypothesis; Arithmetic means have ranged between 4.38 – 4.66; the statement stated that Risks of tampering and stealing the systems, has reached the highest arithmetic mean which is 4.66; and total arithmetic mean has reached 4.49. Sample study’s responses

agree very highly that the risks accompanying the processes of electronic revenue payment and collection affect the collection process during the Corona virus pandemic .

In addition, arithmetic mean of the statements which has formed third hypothesis has been compared with standard mark 3 - hypothesis acceptance standard- by using t-test as stated in table 7.

Table 8. Arithmetic Means, Standard Deviations and T-test of Statements which has formed third hypothesis in comparison with Standard Mark 3

Risks of electronic payment and collection processes	Arithmetic Mean	Standard Deviation	T-Value	Statistical Significance
	3.89	1.19	7.685	000.

Table 8 indicates that there are statistical differences at ($\alpha \geq 0.05$) between arithmetic mean and standard mark 3; T-value has been 7.685; statistical significance has been 0.000. Thus, third hypothesis stipulating that there is a statistically significant relationship between the risks of electronic revenue collection and payment processes and assurance of the continued use and cash flow of revenues during the Corona virus pandemic, has been accepted.

3.4.4 Fourth Hypothesis Testing

Fourth hypothesis has touched upon the relationship between the components of electronic revenue payment and collection processes and the maintenance of the stability of revenues during the Corona virus pandemic. To test the validity of this hypothesis, arithmetic means and standard deviations of performing of study’s sample regarding fourth hypothesis have been extracted; table 8 outlines them.

Table 9. Arithmetic means and standard deviations of responses of study’s sample regarding fourth hypothesis touching upon the components of electronic payment and collection system and the maintenance of stability of revenue during the Corona virus pandemic

Statements	Arithmetic mean	Standard deviation	Response orientation
Components of electronic revenue payment and collection systems have contributed to the stability of revenues during the Corona Virus pandemic			
Legislative and legal infrastructure appropriate for electronic services is provided.	4.24	.98	Very high
The government develops governmental policies supporting the spread of electronic services and transactions	4.22	.98	Very high
Adequate protection and security means of electronic payment systems are provide when designing and operating the system in order not to be penetrated as well as detect any problems which may occur	4.25	.88	Very high
The components of security system shall be followed up and checked and data integrity shall be ensured.	4.23	.78	Very high
Encrypted electronic signatures are used.	4.34	.88	Very high
High competencies and expertise are provided in order to perform electronic processes .	4.40	.89	
The users shall be informed by the procedures of preventive insurance.	4.42	.89	Very high
Total	4.3	.89	Very high

Table 9 shows arithmetic means and standard deviations of statements of fourth hypothesis; Arithmetic means have ranged between 4.22 – 4.42 ; the statement stated that the users shall be informed by the procedures of preventive insurance, has reached the highest arithmetic mean which is 4.42; and total arithmetic mean has reached 4.30. Sample study’s responses agree very highly that the

components of electronic payment and collection system have contributed to the maintenance of stability of revenues during the Corona virus pandemic.

In addition, arithmetic mean of the statements which has formed fourth hypothesis has been compared with standard mark 3 - hypothesis acceptance standard- by using t-test as stated in table 9.

Table 10. Arithmetic Means, Standard Deviations and T-test of Statements which has formed fourth hypothesis in comparison with Standard Mark 3

Relationship between the components of electronic payment and collection system and the maintenance of stability of revenues during the Corona virus pandemic	Arithmetic Mean	Standard Deviation	T-Value	Statistical Significance
	4.3	.89	7.685	000.

Table 10 indicates that there are statistical differences at ($\alpha \geq 0.05$) between arithmetic mean and standard mark 3; T-value has been 7.685; statistical significance has been 0.000. Thus, fourth hypothesis stipulating that, there is a statistically significant relationship between the components of

electronic collection and payment systems and the maintenance of the stability of the revenues during the Covid-19 pandemic , has been accepted.

3.4.5 Fifth Hypothesis Testing

Fifth hypothesis has touched upon the challenges (the obstacles) which limit the use of electronic revenue payment and collection systems. To test the validity of this hypothesis, arithmetic means and

standard deviations of performing of study's sample regarding fifth hypothesis have been extracted; table 10 outlines them.

Table 11. Arithmetic means and standard deviations of responses of study's sample regarding fifth hypothesis touching upon the challenges (the obstacles) of the use of electronic payment and collection systems

Statements	Arithmetic mean	Standard deviation	Response orientation
Electronic collection processes are still limited and are not widely applied due to the presence of the challenges including the following			
Low communication networks which may not be available in some areas	4.36	.88	Very high
A weakness of the prevailed legislative and legal structure which provides appropriate atmosphere of electronic revenue collection processes	4.68	.90	Very high
A lack of trust among some the users in electronic systems in general and electronic collection systems in particularly due to penetration fears	4.54	.89	Very high
high prices of devices required for implementing electronic payment processes	4.60	.88	Very high
Low level of knowledge (a lack of adequate experience) of electronic systems, especially electronic collection systems among governmental services' recipients	4.68	.78	Very high
Fraud risks	4.39	.88	Very high
Risks of payment conflict may occur if the server is under pressure or the program is disabled. As a result, problems of electronic payments will emerge, and the amount sent or received may, therefore, be different from the amount agreed upon between the two parties	4.63	.90	Very high
Total	4.53	.88	Very high

Table 11 shows arithmetic means and standard deviations of statements of **fifth hypothesis**; **Arithmetic means have ranged between 4.36 – 4.68** ; the statement stated that **a weakness of the prevailed legislative and legal structure which provides appropriate atmosphere of electronic revenue collection processes**, has reached the highest arithmetic mean which is 4.68; and total arithmetic mean has reached 4.53. Sample

study's responses agree very highly that there are challenges (obstacles) which limit the use of electronic revenue payment and collection systems during the Corona virus pandemic.

In addition, arithmetic mean of the statements which has formed fifth hypothesis has been compared with standard mark 3 - hypothesis acceptance standard- by using t-test as stated in table 11.

Table 12. Arithmetic Means, Standard Deviations and T-test of Statements which has formed fifth hypothesis in comparison with Standard Mark 3

Challenges which face the electronic payment and collection systems	Arithmetic Mean	Standard Deviation	T-Value	Statistical Significance
	4.53	.88	8.885	000.

Table 12 indicates that there are statistical differences at ($\alpha \geq 0.05$) between arithmetic mean and standard mark 3; T-value has been 8.885; statistical significance has been 0.000. Thus, fourth hypothesis stipulating that, there are various

challenges and obstacles which affect the use of electronic revenue collection and payment systems and methods in Jordan , has been accepted.

4 Results and Recommendation

4.1 The Study Reached a Set of Results as the Following

- The use of electronic payment and collection systems during the Coronavirus pandemic in Jordan Contributed to the stability of the government revenue collection process
- The availability of internal control procedures and means in the electronic payment and collection systems contributed to ensuring the sustainability of the use of electronic payment methods in government units and the continuation of the cash flow of revenues during the Covid-19 pandemic
- There is a relationship between the risks of collecting revenues through electronic payment methods and ensuring the continued use and cash flow of revenues during the Corona virus pandemic.
- The availability of the components or infrastructure of electronic collection and payment systems that contribute to maintaining the stability of government revenues during the Covid-19 pandemic;
- The use of electronic revenue payment systems in Jordan faces a number of challenges, such as the lack of knowledge of the use of electronic systems and fear of them and the risks associated with them (distrust), and the lack of appropriate equipment for service

4.2 Recommendations

The study reached a set of recommendations as the following:

1. A great effort shall be exerted in order to achieve the optimal application of this project; all parties shall unanimously agree on this project particularly in the light of the economic globalization and the spread of global crises, including the economic Corona crisis.
2. Using electronic payment and collection systems in all governmental institutes shall be disseminated and encouraged through applying supporting policies such as offering collection discounts .
3. Attention shall be paid to provide internal controls over the systems in order to prevent the risks which may occur while using these systems; and relevant policies and procedures shall regularly be reviewed.
4. Required support shall be provided for establishing the infrastructure appropriate for communication networks; in addition, communication systems shall be improved

in order to reach quickly all areas without interruption.

5. Employees and stuffs shall be rehabilitated to use the latest systems through conducting training courses, thereby raising employee efficiency.
6. Payment procedures shall be simplified in order to be usable as many citizens as possible. Videos explaining payment steps or photo publications illustrating payment steps, therefore, shall be published.
7. Procedures of collection, information systems connection and check shall be simplified; tax base shall be defined using fair and objective accounting bases.
8. An integrated and comprehensive base of tax community shall be provide; revenue interests shall be linked to each other; and models of the data shall be developed in order to get a benefit from their work mechanisms.

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