The effects of the emergence of new information technologies and the efficiency of tax collection

Tahera Mrfakhradini [1&2] and Saeed GhiasiNodooshan[3]*

[1]Department of Public Administration, Yazd science and research branch, Islamic Azad university, Yazd, Iran.

[2]Department of Public Administration, Yazd branch, Islamic Azad university, Yazd, Iran.

[3]Assistant Professor ofAllamehTabataba'i University ,Department of Educational Planning and Management

ARTICLE INFO

ABSTRACT

Objective: These researches are in type of solidarity research. Statistical society of this research is total of employees in administration of tax affairs in Yazd province. **Methodology:** In this research, simple random sampling is used and with using from Morgan table, 150 persons are chosen. For gathering data, two type of questionnaire related to IT performance and efficiency of levy are used. IT questionnaire is included from three components of accessibility, ease of use and usefulness and also efficiency of levy questionnaire is included from three components of affordable, achievement of goals and customer satisfaction. For analyzing the data is used from Pierson correlation test and step by step regression analysis. **Results:** The results showed that there is a significant and positive correlation between IT and ease of use.component of ease of use cannot predict the changes. **Conclusion:** As a result, whatever the amount of usage from IT in administration of tax affairs in Yazd province become more then efficiency of levy will become more, but these changes are affected by new IT methods.

1. Introduction

In the last two decades, using from IT has been dramatically increased in various fields. So the IT development has created many new careers. The emergence of the Internet has accelerated the flow of information around the world. Until the middle of nineteen decade, most social networks had connected to the Internet and computers were out of personal state. Appearance of new connection methods, like Internet, is caused of new social connections and then these borderless connection networks will effect on traditional social relationships (Motorn, 1991). Nowadays new connection-information technologies have influenced and changed to the social that the most stable dimension of human life, meaning culture, is affected and changed (Asadzadeh & Kiani, 2012). Nowadays with spread of new IT, communications, business methods, routine activities, relationship with others, achievement to information and totally the whole of pillars of human life are affected deeply by these mentioned factors. With using from IT, especially in economic field, the circumstances of internet banking, electronic payment, safety of investment and information exchange are accreted. Financial organizations with usage of information and communication technologies present services with higher quality and lower difficulty to the customers (Sano, 2013). In many economic systems of countries, tax is as the most important source of incoming and also is one of the solutions of economic development. Usually tax can be defined in operation as collection of determined imposition of wealth, holding, incomes, transfers, goods and etc. by government for purpose of development of government revenue (Chatama, 2013). Tax collection is one of the important application fields of information and communication technologies. For recognition the capabilities of IT in levy field, is noticed to time and cost frugality meaning efficiency of IT. Purpose of this study is determination the relation between usage of IT and efficiency of levy by tax payers in Yazd province. In this section is discussed about the purpose, hypotheses and definition of variables of this research. In next section is discussed about literature review, methodology and results of the research (Al-Sabbagh, 2004).

One of the most important exclusivity of this century is daily development of information and communication technologies and also using from it to increasing speed and quality of service presenting. This progress impressed the economic system. One of the components of economic system that is impressed by IT promotion is levy system which is caused of main changes in economic field. In simpler words, speed of development in information and communication technologies causes creation of changes in forms of new economic systems and especially in tax collection field and new solutions for taxes payment (Unktad, 2001).

Tax bureau of Yazd province is one the ministrations that is looking for recognition and usage from efficient information and communication technologies in tax collection field. So if there is no relation between used facilities of information and communication technologies and features of people that use from this technology then tax collecting in personal and presence method will be better than electronic way. If the above relation is confirmed, performance of IT in tax collecting will be efficient. The main question or problem in this research is that, is there a significant relation between usage of information and communication technologies and efficiency of tax collection by tax payers in administration of tax affairs in Yazd province?

1.1 Research hypotheses
1.1.1 Main hypothesis
There is a relation between usage of IT and efficiency of tax collection by tax payers in Yazd province.

Secondary hypotheses
1. There is a positive relation between ease of use of IT application and efficiency of levy by tax payers in Yazd province.

1.2 Literature review
Maleki have done a research with purpose of evaluation impact of effective factors on admission and IT application based on Davice model that the sample of their research is tax payers of administration of tax affairs in south of Tehran province. In their research Davice model of IT admission is used as a tool for gathering and analyzing data. Results of their research showed that there is direct and positive relation between acceptance of electronic tax services by tax payers and with variables of ease of use of internet service, usefulness of usage from internet, accessibility to technology facilities and socialistic features of tax payers and also there is a reverse relation with risk of usage of internet system (Azar & Gholamrezaei, 2006).

Allahyari in a research with title of " E-banking service and its needed executive in comparative of operation costs of various banking service" is evaluated electronic banking methods (internet, intranet and cell phone) and costs of presented services in total type of banking systems in Iran. Based on results of the mentioned research, average of needed time for doing any transaction in internet and intranet banking toward traditional banking significantly reduced (AllahyariFard, 2003). In another study that done in research bureau of Sepah bank with title of " Frugality E-banking application in traditional banking" is evaluated and compared time saving in payment of bills by Automatic Teller Machine (ATM) and traditional type meaning in branches of bank. Based on the obtained results payment of bills by ATM could save time about 894526 hours or 111816 work days or 372 work years (Alachandher & Santha, 2004).

Chang in a research with title of " acceptance indexes of services of electronic government" have presented tax payment system and internet registration with theoretical model. Theoretical Planning Based (TPB) model in this research is developed to evaluating admission of users. Obtained results of TPB showed that when users are confronted with new software package various factors influence on their decisions for how and when using of it (Barati, 2003).

Chatama (2013) have done a research with purpose of evaluation the application of information and communication of IT in modernism the tax management method and levy improvement in tax collection department in Tanzania. Results of his research showed that usage of IT is caused of ease of process, retain and access to registration data, reducing of operator costs and cheating on tax payment; and totally usage of IT is caused of improvement in tax management system.

Beccalli (2006) in a research named IT and economic performance: according to the European banking industry with study about 737 banks in Europe between years of 1994 to 2000 have concluded that investment on IT in forms of hardware and software has negative impact on profitable of bank and investing in form of service has positive impact on profitable of these banks and totally IT created heterogeneous effect.

Some professors of Dubai University for evaluation internet banking have compared Jordan and United States of America banking system and determined main differences between applications of Jordan banking networks and USA banking networks. The mentioned research clearly has shown differences of banking system between developed and developing countries. Results of the research showed that difference between two types of system is in way of presenting services in their websites. American banks in their websites plus presenting banking service, obtain and present other features like investment circumstances, purchasing stocks, payment of finance calculation bills and etc. but in Jordan banks there is main weakness in this regard (Evants et al. 2004).

In other research that is done by communication national institute of France with collaborating Zilina University, is evaluated the role of effective factors in attraction of customers of E-banking. Based on their study, in banking service presentation process recognition of customer behavior and expected factors are effective in increasing the quality of electronic services. For increment the quality of internet banking service, researchers have considered some factors very effective like responding time, service domain, customer relationship, existence of accessible financial information, ease of use, safety, designing a suitable graphic environment are the effective factors for attraction internet customers (Sahut & Kucerova, 2003).

2. Materials and methods

2.1 Research methodology
Because in this research is evaluated the relation of research variables in natural mode and without manipulating so its type is correlation research. Some of statistical theorizers, like Krelinger, any non-experimental research that there is not manipulating, intervention and control in it, classify in description research group.

2.2 Statistical society

Statistical society is a set of people or units that have at least one common attribute. Total employees of tax administration affairs in Yazd province (about 486 persons) that are work between years of 2014-2015 are considered as statistical society of current research.

2.1.4 Sample size and sampling method

In this research is used from random sampling method. In this type of sampling method every member of population has an equal and dependent chance to choose and being in the sample. Meaning of dependent is that chosen any member of population has no effect on chosen the other member of it. There are various ways to doing the random sampling method. For example if population be small could assigned to each member a number then between codes number of sample size are chosen. In correlation studies estimation of sample is easier. Researcher must determine amount of correlation based on past studies or primary examination and then with using from table of sample size determination, in book of Delavar, the needed sample determined. Because former researches had obtained high correlation (at least 0.70) between different variables, that these variables are used in this research, so for each of variables 10 persons are enough for sample size. But for more assurance the numbers of samples in this research are calculated by Morgan table. So according to the Morgan table, number of 180 persons is chosen as sample of this research. Because statistical society of this research includes two genders of male and female of different career groups so for two reasons, question of share sampling will not create any problem: 1. in simple random sampling the chance of choosing of each member including male or female are equal. 2. Statistical society has internal consistency meaning that there is congruence between different job types. So choosing more number of samples from one type of job and choosing less number of sample from the other types of job will not conclude to significant difference in results of research (Chatama, 2013).

3. Discussion and results

3.1 Statistical analysis

3.1.1 Demographic characteristics

In this section some demographic variables of sample related to the purpose of the research are shown in table 1.

Table 1. Percent of frequently distribution related to gender of sample

total	male	female	Gender
150	68	82	Frequently
100	45	55	Percent

Descriptive information related to the gender of sample's member are presented in table no. 1. As it is shown in this table, between 150 persons of this research, 68 persons are male and 82 persons are female.

Table 2. Percent of frequently distribution related to education

total	Associate Degree	Bachelor science	Master science	education
150	27	51	72	frequently
100	18	34	48	percent

In table no. 2 information related to education frequently of statistic sample are shown. As it is shown between samples of this research 72 persons have master science degree, 51 persons have bachelor science degree and 27 persons have associate degree.

Table 3. Percent of frequently distribution related to work experience

frequently	percent	Work experience (year)
24.66	37	1-5
16	24	6-10
25.33	38	11-15
19.33	29	16-20
14.66	22	More than 20
100	150	sum

In table no. 3 information related to frequently of work experience are shown. As it is shown, between the samples work experience between 11-15 years and 1-5 years has more frequently.

Table 4. Percent of frequently distribution related to job position

percent	frequently	Job position
3.33	5	Chief and tax group chief

| 84.6	127	Expert and master expert of tax
12	18	Office clerk
100	150	total

In table no. 4 information related to frequently of job position of sample are shown. As it is shown between samples of this research tax experts have more frequently with percent of 84.6.

3.2 Descriptive statistic characteristics

Table 5. Statistic descriptive of grades of IT and efficiency of tax collection

number	Standard deviation	average	Variable of statistic characteristic
150	16.90	61.37	Information technology
150	5.89	17.44	accessibility
150	7.17	24.86	usefulness
150	4.56	41.00	Efficiency of tax collection
150	2.00	16.36	economic
150	2.88	11.62	Achievement to goals
150	1.57	13.02	satisfaction

In table number 5 statistics descriptive of grades (average and standard deviation) related to grades of IT and efficiency of tax collection is shown.
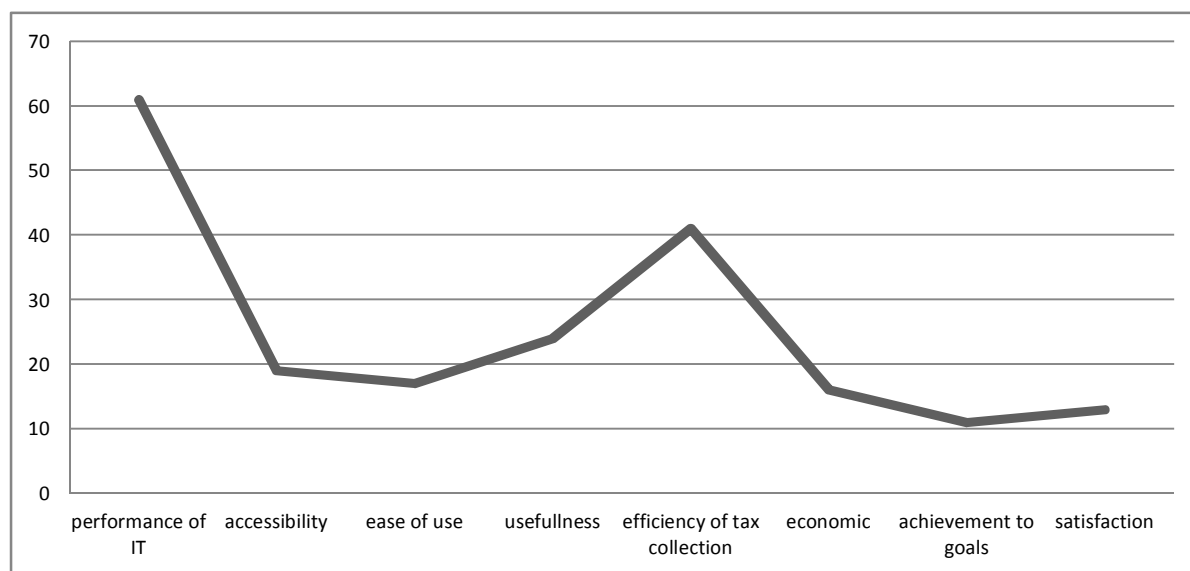
Figure 1. Visual average of components

In figure 1, average of each component is shown as visual.

3.3 Inferential characteristics
3.3.1 Main hypothesis
There is a relation between IT and efficiency of tax collecting from tax payers in Yazd province.

Table 6. Results of Pierson correlation test between IT and efficiency of tax collection

Statistic characteristics			
Significant level	Correlation coefficient	number	variables
0.01	0.489	150	IT and efficiency of levy
0.01	0.375	150	IT and economic

0.01	0.381	150	IT and achievement to goals
0.01	0.239	150	IT and satisfaction

In table 6. Results of Pierson correlation test for examination the relation between IT and efficiency of tax collection from tax payers are shown. Based on shown results in table 6, amount of correlation coefficient between two variables of IT and efficiency of levy is equal with 0.489 and amount of correlation coefficient between IT and components of levy in α level of 0.01 is significant. Based on this there is a significant and positive relation between IT and each component of levy from tax payers.

1. There is a relation between efficiency of levy and accessibility to tax payers.

Table 7. Results of Pierson correlation test between efficiency of levy and accessibility

Statistic characteristic			
Significance level	Correlation coefficient	number	variable
0. 01	0. 565	150	Efficiency of levy and accessibility

In table 7 results of Pierson correlation test for examination the relation between efficiency of levy and accessibility to tax payers are shown. Based on shown results in the table, amount of correlation coefficient between these two variables are equal with 0.565 that in α level of 0.01 is significance. Based on this could conclude that there is a significant and positive relation between efficiency of levy and accessibility to tax payers.

2. There is a relation between efficiency of levy and ease of use of tax payers

Table 8. Results of Pierson correlation test between efficiency of levy and ease of use.

Statistic characteristic			
Significance level	Correlation coefficient	number	variable
0. 05	0. 145	150	Efficiency of levy and usefulness

In table 8 results of Pierson correlation test for examination the relation between efficiency of levy and ease of use of tax payers are shown. Based on shown results in table 8, amount of correlation coefficient between these two variables are equal with 0.401 that in α level of 0.05 is significant. Based on this could conclude that there is a significant and positive relation between efficiency of levy and ease of use to tax payers.

3. There is a relation between efficiency of levy and usefulness of tax payers.

Table 9. Results of Pierson correlation test between levy and usefulness

Statistic characteristic			
Significance level	Correlation coefficient	number	variable
0. 01	0. 583	150	Efficiency of levy and usefulness

In table 9 results of Pierson correlation test for examination relation between efficiency of levy and usefulness of tax payers are shown. Based on shown results in table 9, amount of correlation coefficient between these two variables are equal with 0.583 that in α level of 0.01 is significant. Based on this could conclude that there is a significant and positive relation efficiency of levy and usefulness of tax payers.

4. IT could predict efficiency of levy of tax payers in Yazd province.

Table 10. Correlation matrix between components of IT and efficiency of levy

4	3	2	1	
		1	0.359[**]	Ease of use .2

*significant in level of 0.05** significant in level of 0.01

In table 10 results of Pierson correlation between components of IT and efficiency of levy are shown. As it is shown in the table between presented correlations, those that marked with * sign in α level of 0.05 and those that marked with ** sign in α level of 0.01 are significant.

For calculating efficiency of levy of tax payers from components of IT is used from step by step regression analysis. Results are shown as following.

Table 11. Step by step regression analysis for prediction of levy from components of IT

Rsquare	R	Significane level	t	standard coefficient		Non-standard coefficient	
				Beta	Standard error	B	
		0.01	1.781	0.145	0.090	0.161	Ease of use

In table 11 results of step by step regression analysis for prediction of levy from components of IT are shown. According to the table, components of IT (except ease of use) significantly predict levy. In final model, amount of standard regression coefficient (beta) for variable of accessibility is equal with 0.565 and variable of usefulness is equal with 0.583. According to amount of obtained t-tests for each variables of accessibility and usefulness that in α level of 0.01 is significant, we conclude that these variables could significantly determine tax collection from students. According to results of table, multiple correlation coefficients between sum of components of IT and levy are equal with 0.583. Also amount of determination coefficient (R square) is equal with 0.239 that showing amount of variance and changes in efficiency of levy by components of IT.

4. Conclusion

4.1 Suggestions

1. Doing a research related to predictability of ease of use and efficiency of levy for tax payers and then results of it compare with results of this research.

2. This research's topic done for different geographic area meaning area with different level of IT (accessibility) and efficiency of levy.

3. that is better to future works, some different methods or synthetic of qualitative and quantitative methods are used for gathering data related to efficiency of levy and IT.

4. that is better to doing a research about reasons of non-usage or non-appropriate usage from IT in fields of economic, levy and banking works in administration of tax in Yazd province.

4.2 Application suggestion

1. Easily can use from results of the current research in organization that related to finance and economic administration.

2. The results of this research could have significant and important information for planners and managers of different divisions of finance and economic administration

REFERENCES

AllahyariFard, M. 2003. E-banking services and the performance requirements of the comparative operating costs, banking services, Tehran, Institute for Monetary and Banking; printing.

Al-Sabbagh, I .2004. Adoption and use of Internet Banking in theSultanate of oman; An Exploratory study; www. Arravdev.com/commerce/jibc/0406-07 asn

Alachandher, K., Santha, V. 2004. Electronic Banking in Malaysia: A Note on Evalution on Evalaution of services and consumer Reactions. www. Arravdev.com/commerce/jibc/0001-07 html.

Asadzadeh, A., Kiani, H. 2012. Influence of ATMs, terminal sales and the profitability of branches of Iranian banks. Journal of Economics and modern business, numbers 29 and 30, summer and autumn 1391, 181 -206

Azar, A., & Gholamrezaei, D. 2006. Rating provinces with data envelopment analysis. Journal of economic research.

Barati, S. 2003. Outlook on History, concepts and aspects of privatization, Journal of Economics and Cooperation, No. 157, pp. 23-21.

Beccalli, E. 2006. Information technology and economic performance: some evidence from the EU banking industry. Elena Beccalli London School of Economics and Università di Macerata.

Chatama, Y. 2013. The impact of ICT on Taxation: the case of Large Taxpayer Department of Tanzania Revenue Authority, Developing Country Studies. 3 (2), 91-100.

Evants, J., Awamleh, R., Mahate, A. 2004. Internet Banking in Emergency Market (the case of jordon-ANote; www.arravdev.com/commerce/jibc/0306-03)

Motorn, S. 1991. The corporation of the 1990s: information technology and organizational transformation, New York, NY: Oxford university ress.

Sahut, J., Kucerova, Z. 2003. Enhance Banking Service Quality with Quality Function Deployment Approwch.

Unktad, U. 2001. Electronic Commerce and Development Report 2001. Unctadnations publication.

How to Cite this Article:

Mrfakhradini T., GhiasiNodooshan S., The effects of the emergence of new information technologies and the efficiency of tax collection, Uct Journal of Management and Accounting Studies 01 (2014) 39–44.