

# Analysis the impact of Information technology on Efficient tax Management

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**Abstract**— The purpose of this study was to investigate the influence of information technology on tax administration in the Kurdistan. The impact of information technology on tax productivity as well as the link between information technology on tax implementation and tax planning were especially studied in this study. In this study, a descriptive research approach was adopted, with a questionnaire being used to collect data, which was then analyzed using multiple regression and Pearson product moment correlation. The findings of the study revealed that information technology (online tax filing, online tax registration and online tax remittance) has a positive impact on efficient tax management.

**Keywords**— E-filling, IT, Tax Management, Accounting Management, Taxation.

## I. INTRODUCTION

Tax authorities, as an agency of government, are increasingly turning to e-government led solutions such as electronic tax filing (e-filing) on the grounds that it improves the delivery of public services and fiscal efficiency (Hamza et al. 2021). Sabir et al. (2021) defined e-taxation as "a process in which tax documents or taxes returns are submitted through the internet, usually without the need to submit any paper returns." E-taxation includes the use of internet technology, the Worldwide Web, and software for a wide range of tax administration and compliance purposes, according to the (Aziz et al. 2021). The term "electronic tax filing" was developed in the United States, where the Internal Revenue Service (IRS) began enabling tax return e-filing for tax refunds only in 2003, establishing the precedent (Sorguli et al. 2021). Individual taxpayers are now filing online in greater numbers than ever before, with about one out of every five individuals now

doing so. In reality, this was made possible by various upgrades and features that have been introduced to the software throughout time, as shown below (Ahmed et al. 2021). Other industrialized countries, such as Australia, Canada, and Italy, have now adopted electronic filing as a standard practice (Ismael et al. 2021). The United Kingdom, Chile, Ireland, Germany, France, the Netherlands, Finland, Sweden, Switzerland, Norway, Singapore, Brazil, Mexico, India, China, Thailand, Malaysia, and Turkey are among the countries participating in the competition (Ali et al. 2021). E-filing of tax returns has also been popular in Kurdistan as well as other emerging nations like as Uganda, Rwanda, and Kenya, among others (Gardi, 2021).

Several tax authorities around the world, according to Qader et al. (2021), are implementing electronic tax administration systems to interact with the taxpaying public in tax collection, administration, and compliance settings in order to improve the effectiveness and efficiency of tax

administration and collection (Hamza et al. 2021). Previous studies on the suitability of an information technology-enabled tax system have found that there is a positive relationship between the use of automation systems and the cost of tax administration, as well as a link between automation and the effectiveness of revenue collection (Fatah et al. 2021), as demonstrated by a case study of the customs division (Hamad et al. 2021). Using the comparative case studies of Brazil and Japan, (Ali & Hamad, 2021) focused on the economic development and taxation systems of the two countries' respective economies. Japan's example proved that a nation does not need to wait until it reaches a high degree of development before making significant changes to its tax structure, whereas in Brazil, low-income taxpayers carry the lion's share of the cost of taxation (Hamad, 2018). According to Ali & Anwar, (2021), an automated system improves administration by providing multiple scenarios that allow senior management in a multi-campus university system to generate multiple income scenarios, make well-informed decisions about the operation of their institution, and calculate and allocate resources to academic departments on a time-sensitive basis (Anwar & Shukur, 2015). As evidenced by Anwar & Abdullah, (2021), a macro model outperforms the representative tax system when it comes to variations in funds allocated to counties, and Abdullah & Anwar, (2021) revealed that a system that combines spatial and attribute data management capabilities, such as geographic information systems, is the most effective method of planning for revenue collection. While Anwar & Abd Zebari, (2015) found that an online tax system does have an impact on tax compliance levels among small taxpayers, Anwar & Surarchith, (2015) found that there is a relationship between information systems and revenue collection efficiency and effectiveness, and that there is a particularly significant link between internal controls and revenue collection (Hameed & Anwar, 2018). Abdullah et al. (2017) concluded that the use of modern technology eliminates any opportunity for tax evaders to hide because the system captures all potential taxpayers. However, the use of information and communications technology (ICT) can be catastrophic if it is used carelessly by both tax payers and tax administrators because scammers and hackers of internet facilities can take advantage of the ignorance of the public or the lax security of the system (Anwar & Balcioğlu, 2016). Given the foregoing, no studies have yet been conducted to investigate the impact of information technology, specifically online tax filing, online tax registration (Anwar, 2016), and online tax remittance, on the level of tax administration in terms of tax productivity, planning, and implementation. This demonstrates that there is a gap in the existing literature (Anwar, 2017). It is true

that Anwar & Ghafoor, (2017) investigated how the online tax system affected the filing and remittance of taxes, but their findings were based on tax compliance rather than the use of technology to file taxes online. As a result, the purpose of this study is to investigate the influence of information technology on tax administration, with a particular focus on Kurdistan (Anwar & Qadir, 2017).

## II. LITERATURE REVIEW

In information technology (IT), tools, equipment, and resources are used to interact with one another, as well as with other people, and to produce, manage, and share information (Anwar & Climis, 2017). The term "information technology" refers to a group of technologies that include hardware such as computers and modems, as well as software such as computer programs and mobile phone applications, as well as networks such as wireless communications and the Internet (Anwar & Louis, 2017). They are primarily concerned with the collection, processing, storing, and transmitting relevant information to support the management operations of any organization, including government agencies, and are comprised of hardware such as computers and modems, as well as software such as mobile phone applications (Anwar, 2015). Individuals who are associated with institutions or government systems can benefit from a system that provides accurate history information, current status information, and predicted information, all of which is accurately stated (Anwar & Shukur, 2015). According to Anwar & Abd Zebari, (2015), information technology is advantageous in the area of decision making because it has the ability to monitor and diagnose system disturbances on its own, determine a course of action, and take action in order to bring the system back into balance. The following components are included in the construction of future planning information technology according to Anwar & Surarchith, (2015): people, data processing, data transmission, information system and retrieval, and system planning (Anwar, 2017). The taxation system, according to Anwar & Louis, (2017), is a powerful and possibly financially stabilizing tool that governments of nations may utilize to construct development goals while also maintaining fiscal stability in their countries. The major objective of tax administration across the world is to generate revenue to finance government expenditure on social welfare, which includes defense, law and order, health-care services, and educational opportunities for residents (Anwar, 2015). In addition to funding capital projects, which are also known as consumer spending, tax revenue may also be used to fund consumer spending, which includes the development of social and economic

infrastructure that will improve the quality of people's lives (Hameed & Anwar, 2018). Beyond its primary function, taxation can also be used as a critical instrument in any nation's economy to promote investment through the use of tax breaks, incentives, or other attractive tax exemptions that appeal to both domestic and foreign investors in areas such as manufacturing of consumer products (Abdullah et al. 2017), export processing, and petroleum and natural gas production. It is also standard practice to use taxation as a tool to discourage specific types of antisocial conduct in the community. Use of alcohol, smoking, and pool betting are all instances of anti-social conduct that can be curtailed by the imposition of higher taxes on the manufacturing of these goods in the first place (Anwar & Balcioglu, 2016). According to Anwar, (2016), a sound tax system must be based on the following concepts in order to be effective: In order to guarantee that taxpayers comply with the tax laws and that tax administrators operate efficiently, the effectiveness of a tax system is determined by its capacity to promote the ethical principles of professionalism, openness, accountability for actions, probity, and efficiency in the collecting of taxes. Simplicity (Anwar, 2017): A simple, flexible, and adaptive tax system, as well as the tax legislation, should guarantee that taxpayers comply with the law while tax administrators operate efficiently; neutrality, which suggests that a good tax system should be free of any sort of prejudice; economy, which implies that a good tax system should make the economic situation better rather than worse (Anwar & Ghafoor, 2017); and fairness, which implies that a good tax system should be devoid of any type of bias. also means the absence of any type of bias in a good tax system, which suggests that a good tax system should be devoid of any form of favoritism (Anwar & Qadir, 2017). It is not permitted to have a detrimental influence on the economic contribution of the taxpaying population (Anwar, 2015). It is necessary, in particular, that both the compliance costs to tax payers and the administrative expenses to government have no negative influence on the total amount of taxes collected at the national level (Hamza et al. 2021). In order to be equitable, a sustainable tax system cannot be arbitrary, nor should the amount payable be affected by prejudice or personal sentiments. This concept specifies that the time of payment, the manner of payment, and the amount to be paid must be clear to the tax payer as well as the taxing authorities (Sabir et al. 2021); convenience, on the other hand, requires that a good tax system be capable of generating a subsistence for the tax payer (Aziz et al. 2021). To be successful in implementing electronic filing and payment systems, Sorguli et al. (2021) states that the following conditions must be met: reliable and accessible internet service, cooperative financial institutions, a technologically astute public, and adequate funding to set

up the necessary infrastructure in tax offices (Ahmed et al. 2021). e-filing and e-payment systems must be incorporated into a complete information technology design, development, and implementation plan, as pointed out by Ismael et al. (2021) in order to be effective. As Ali et al. (2021) pointed out, in order for e-filing to be effective, the following factors are required: skilled personnel, a reliable IT infrastructure, and a good business climate (Gardi, 2021). The documentation of ideas and actions, as well as desired outcomes and time frames for each component, is the first step in the development of a strategic business plan for electronic tax systems. This is done while taking into account the strengths and weaknesses of the tax administration, as well as environmental opportunities and threats (Qader et al. 2021). It is also recommended that the plan contain a description of the implementation strategy, which should include the approach for putting it into effect (Hamad et al. 2021). Many countries have chosen a staged approach to the introduction of optional electronic filing and payment for particular segments of the taxpayer base, such as individuals or companies, as part of a phased plan to allow for live testing of the system in the early stages (Fatah et al. 2021). Taxpayers with specific characteristics, such as companies, are obliged to file returns following the conclusion of testing (Ali & Hamad, 2021). Additionally, a stable electricity supply, periodic seminars for tax payers and tax authorities on the system's usage, a secure, user-friendly, and readily assessable website, as well as a legislative framework, are required for a successful electronic taxation system to be implemented (Hamad, 2018). For example, Ali & Anwar, (2021) identified the following as benefits of utilizing information technology to manage the operations and delivery of services by public sector institutions: increased administrative efficiency, effectiveness, and productivity, improved service delivery quality (Anwar & Shukur, 2015), and a reduction in the administration, operational, and transactional costs of public institutions (Anwar & Abdullah, 2021). They also spoke on the need of providing knowledge at a reduced cost. There are no words to adequately express how important IT is in the field of taxation (Abdullah & Anwar, 2021), with some examples being: a reduction in the overhead costs of managing the government agencies responsible for tax administration, instant computation of tax liability through the use of online tax calculators, reduced cost of registering tax payers and instant generation of tax identification number, a reduction in staff-taxpayers collusion as it relates to tax liability (Anwar & Shukur, 2015), a reduction in the number of tax returns filed, a reduction in the number of tax returns filed by individuals (Anwar & Abd Zebari, 2015). It is expected that building an information technology system will result in greater productivity, improved profit

performance, as well as a higher degree of accuracy in information, according to the research of (Anwar & Surarchith, 2015). Most firms that embrace information technology see increased productivity, but there may be some productivity loss during the "learning curve" period (Anwar, 2017). Using information technology in tax administration can result in a high level of ill will toward tax payment, garbage-in garbage-out, which is the imputation of incorrect figures that will result in incorrect calculation of tax liability by online tax calculator (Hameed & Anwar, 2018), poor internet access, inadequate electricity to power host servers, high costs of maintaining ICT facilities, a lack of technical know-how by tax administration agencies, and a high level of indifference toward tax payment (Abdullah et al. 2017).

### III. RESEARCH METHODOLOGY

The research was conducted out in the Kurdistan, which included the states of Erbil, Duhok, and Sulaimaniah. According to the descriptive survey design, the study population included all members of staff in government agencies responsible for tax administration in Kurdistan, while the sample included members of staff excluding

unprofessional cadre, and the sample was purposively selected from the population.

The questionnaire was employed as the study instrument, and the face and content validity tests, as well as the test-retest procedure, were used to assess its validity and reliability. Following that, it was administered to a total of eighty-nine members of staff from the aforementioned organizations. Several types of inferential statistics, including regression and Pearson and correlation, were employed in the analysis of the data gathered.

In order to examine the influence of information technology on efficient tax management, the study used

Online tax filing, Online tax registration, as independent variables and efficient tax management as dependent variable. For this reason, the study developed the followings research hypotheses:

H1: Online tax filing has a positive and significant influence on efficient tax management.

H2: Online tax registration has a positive and significant and efficient tax management.

H3: Online tax remittance has a positive and significant influence on and efficient tax management.

### IV. FINDINGS AND ANALYSIS

Table 1: Reliability Analysis

Variables	N	Cronbach's Alpha
Online tax registration	7	.829
Online tax filing	7	.770
Online tax remittance	7	.741
Efficient tax management	10	.773

The researcher implemented reliability analysis to (as seen in table-1) the values of Cronbach's Alpha for online tax registration as independent factor, found to be  $.829 > .6$  this indicates that the items used to measure online tax registration factor were reliable for the current study, the values of Cronbach's Alpha for online tax filing as independent factor, found to be  $.770 > .6$  this indicates that

the items used to measure online tax filing factor were reliable for the current study, the values of Cronbach's Alpha for online tax remittance as independent factor, found to be  $.741 > .6$  this indicates that the items used to measure online tax remittance factor were reliable for the current study.

Table.2: Correlation Analysis

	Pearson	Online tax filing	Online tax registration	Online tax remittance	Efficient tax management
	Correlation	1			
	Sig. (2-tailed)				
	N	89			

Online tax filing	Pearson	.399**	1		
	Correlation				
	Sig. (2-tailed)	.000			
	N	89	89		
Online tax registration	Pearson	.576**	.470**	1	
	Correlation				
	Sig. (2-tailed)	.000	.000		
	N	89	89	89	
Online tax remittance	Pearson	.347**	.389**	.365**	1
	Correlation				
	Sig. (2-tailed)	.000	.000	.000	
	N	89	89	89	89
Efficient tax management	Pearson	.632**	.696**	.615**	.611**
	Correlation				
	Sig. (2-tailed)	.000	.000	.000	.000
**, Correlation is significant at the 0.01 level (2-tailed).					

The researcher attempted to find the correlation between nine independent variables and a dependent variable, therefore the correlation analysis was implemented (as seen in table-2). It was found that the value of Pearson correlation for online tax filing = .632\*\* > .01 therefore there is a positive and significant correlation between online tax filing and efficient tax management, in terms of the strength it was found to be a moderate correlation, the value of Pearson correlation for personal influence = .696\*\* >

.01 therefore there is a positive and significant correlation between online tax registration and efficient tax management, in terms of the strength it was found to be a strong correlation, the value of Pearson correlation for online tax remittance = .615\*\* > .01 therefore there is a positive and significant correlation between online tax remittance and efficient tax management, in terms of the strength it was found to be a weak correlation.

Table.3: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.736a	.542	.538	.33447

a. Predictors: (Constant), online tax filing, online tax registration and online tax remittance

It was found that the value of R square = .542 (as seen in table-3) this indicates that 54% of the variables have been explained.

Table 4: ANOVA

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	129.814	9	14.424	128.933	.000b
	Residual	109.745	981	.112		
	Total	239.559	990			
a. Dependent Variable: efficient tax management						
b. Predictors: (Constant), online tax filing, online tax registration and online tax remittance						



It was found the value  $F = 128.933$  and since the value is greater than .001, this indicates that there is a positive association between variables used to test research hypotheses.

Table.5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
1		B	Std. Error	Beta		
	(Constant)	.687	.104		6.617	.000
	Online tax filing	.448	.023	.521	19.213	.000
	Online tax registration	.584	.023	.630	25.509	.000
	Online tax remittance	.671	.024	.662	27.796	.000

a. Dependent variable: Efficient tax management

The researcher utilized multiple regression analysis to find the most effective and suitable factors increasing level of efficient tax management in private companies in Kurdistan. It was found that the value of B for online tax filing = .448 > .001 and P-value = .000, this indicated that there is positive relationship between online tax filing and efficient tax management, accordingly the first research hypothesis was supported which stated that "Online tax filing has a positive and significant influence on efficient tax management", moreover the value of B for personal influence = .584 > .001 and P-value = .000, this indicated that there is positive relationship between online tax registration and efficient tax management, accordingly the second research hypothesis was supported which stated that "online tax registration has a positive and significant and efficient tax management", and the value of B for Online tax remittance = .674 > .001 and P-value = .000, this indicated that there is positive relationship between Online tax remittance and efficient tax management, accordingly the third research hypothesis was supported which stated that "Online tax remittance has a positive and significant influence on and efficient tax management.

## V. CONCLUSION

Tax authorities, as an agency of government, are increasingly turning to e-government led solutions such as electronic tax filing on the grounds that it improves the delivery of public services and fiscal efficiency. Several tax authorities around the world, they are implementing electronic tax administration systems to interact with the taxpaying public in tax collection, administration, and compliance settings in order to improve the effectiveness

and efficiency of tax administration and collection. It is revealed that a system that combines spatial and attribute data management capabilities, such as geographic information systems, is the most effective method of planning for revenue collection. However, the use of information and communications technology (ICT) can be catastrophic if it is used carelessly by both tax payers and tax administrators because scammers and hackers of internet facilities can take advantage of the ignorance of the public or the lax security of the system. The taxation system is a powerful and possibly financially stabilizing tool that governments of nations may utilize to construct development goals while also maintaining fiscal stability in their countries. The major objective of tax administration across the world is to generate revenue to finance government expenditure on social welfare, which includes defense, law and order, health-care services, and educational opportunities for residents. In addition to funding capital projects, which are also known as consumer spending, tax revenue may also be used to fund consumer spending, which includes the development of social and economic infrastructure that will improve the quality of people's lives. Beyond its primary function, taxation can also be used as a critical instrument in any nation's economy to promote investment through the use of tax breaks, incentives, or other attractive tax exemptions that appeal to both domestic and foreign investors in areas such as manufacturing of consumer products, export processing, and petroleum and natural gas production. It is also standard practice to use taxation as a tool to discourage specific types of antisocial conduct in the community. Use of alcohol, smoking, and pool betting are all instances of anti-social conduct that can be curtailed by the imposition of higher

taxes on the manufacturing of these goods in the first place. The documentation of ideas and actions, as well as desired outcomes and time frames for each component, is the first step in the development of a strategic business plan for electronic tax systems. This is done while taking into account the strengths and weaknesses of the tax administration, as well as environmental opportunities and threats. It is also recommended that the plan contain a description of the implementation strategy, which should include the approach for putting it into effect. Many countries have chosen a staged approach to the introduction of optional electronic filing and payment for particular segments of the taxpayer base, such as individuals or companies, as part of a phased plan to allow for live testing of the system in the early stages. Taxpayers with specific characteristics, such as companies, are obliged to file returns following the conclusion of testing.

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