

Cost Saving in Tax revenue Administration through ICT in Nepal

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Abstract:- ICT as a crucial tool for digitalizing and improving the operating system, transparent and prompt service delivery of tax revenue administration. The main objective of the research was to examine the cost efficiency in tax administration through ICT. The secondary data was collected from Ministry of Finance, GON, Economic survey and various years' annual report of IRD. Similarly, primary data was gathered through the questionnaire survey from the business organization registered in VAT at Inland Revenue offices New road conducted during November 2021 to April 2022. The sample size was 140 purposive judgmentally in which 89.29% (125) respondents respond. The collected data was administered through SPSS version 18.0. Descriptive and inferential analysis had been made for the research design approach. The revenue collection cost per thousand was decreasing subsequently after the application of ICT. Similarly, almost respondents agree that ICT based service delivery (E-VAT) save both time and cost. Service recipient's major dissatisfaction regarding ICT reduced the time and cost in E-VAT was respondent's faced the web log in and hang problem while e-filing. By descriptive analysis, almost respondents agree regarding the time saving, increased operating system through ICT and all of the variables were significant at 5% significance level.

Keyword:- ICT, IRD, VAT, Time and Cost saving, operating system, Availability and speedy.

I. INTRODUCTION

ICTs with new technologies such as computers and the internet or deal with computers and internet connectivity alone when discussing ICTs (Langmia, 2005; Polikanov and Abramova, 2003). ICT was not only creating entirely new products, services, network infrastructures, and leading-edge industries, but also affecting directly or indirectly almost every other sector of the economy, from industrial, commercial and public service applications (Batchelor and Scott, 2005, 19).

Many countries have separate organizations for taxes and customs. In Nepal, custom and tax revenue administration are separated into department of Custom and Inland Revenue department for tax administration. Tax

Administration carried out its responsibilities with the highest degree of public confidence in the organization's effectiveness, efficiency, integrity and fairness. It should be involved in determining the effectiveness, efficiency and feasibility of proposed provisions of the tax law (Koirala, 2019, 167). Reducing the cost and increasing the efficiency of communication about public services through ICT (Rodden, 2018). The application of ICT enhanced internal efficiency in the decision making process (Jamil & Dhakal, 2013). The main reasons for digitalization and e-services were 24x7 availability, respond to rising popularity of internet in society, raises efficiency, speed and reliability of operations and services, reduced cost and failures rate (Llywodraeth, 2011, 49). The successful implementation of ICT based service delivery is to improve customer service while minimizing risk to service continuity and reducing the service cost.

Tax administration also focused on staff training and staff satisfaction for the efficient ICT based service delivery. The first aimed at improving taxpayer services such as e-registration, e-filing and other support modules leading up to e-payments, the second phase implemented core modules such as audit, compliance, refunds etc (Kenya Revenue Authority, 2015,53). Tax Administration should be trained both in the taxpayer's right and the rules of conduct to which they are expected to adhere. The main reasons for digitalization and e-services for tax revenue were 24x7 availability; respond to rising popularity of internet in society, raises efficiency, speed and reliability of operations and services, reduced cost and failures rate (Llywodraeth, 2011, 49).

Developed countries are investing huge amounts in digital technologies like robotics, artificial intelligence, big data analytics and 3D printing, developing countries are still struggling to build their ICT infrastructure and improve their internet penetration. The systems for taxation should be flexible and dynamic to ensure the technological and commercial development (OECD, 2019).

ICT based service delivery used to improve access, privacy, and security of information; establish networks across levels of government; provide online, mobile service delivery; and create opportunities for interactive democracy—at all levels of government.

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➤ *Research Objective*

The main objective of the research is to examine the cost efficiency in tax administration through ICT.

II. RESEARCH METHODOLOGY

The secondary data has collected from Ministry of Finance, Government of Nepal, Economic survey and various years' annual report of Inland Revenue Department, related policies, plan and program. Similarly, primary data is also conducted from the questionnaire survey from the business organization registered in VAT at New road area Inland Revenue offices new road conducted during November 2021 to April 2022. The sample size is 140 in which 89.29% (125) respondents respond. Among respondents, 20% (25) of them also asked for the further queries i.e. in depth informal interview. Purposive judgmental sampling technique was used for collecting the data. The collected data was administered through the SPSS version 18.0. Both quantitative and qualitative approach was used to analyze the data. Descriptive and inferential analysis had made for the research design approach.

III. LITERATURE REVIEW

Ibid (2007) the used of ICT as e-government information portal by electronic filling of government documents, processing of online permits, electronic tax payment and online submission of public employment application as example of highly minimize wasting time in long queues and reducing unnecessary cost. Web based systems improved the service delivery of citizens by providing connectivity and online thereof. Electronic filing of tax returns has reduced the taxpayer's compliance cost and effective government administration. Many countries began experimenting with electronic filing of tax returns, for example, as early as 10 to 15 years ago (OECD, 2006; Deloitte, 2013). Similarly, electronic taxation (E-taxation) and its automated processes are gradually phasing out manual tax administration globally. With e-taxation, taxpayers can conveniently pay their taxes electronically from the comfort of their homes, offices, shops and even while travelling and can save the time and cost (Umenweke & Ifediora, 2016).

Parasuraman et al.(2005) ; World bank (2001, 2016) depicted that almost government around the world introducing ICT tool (e-government) as a means of saving time and cost, improving service delivery, strengthen accountability and transparency. ICT decreased the cost, time and enhanced the communication henceforth delivered the prompt service quality (UN,2010). Prichard (2014) also depicted that ICT as a crucial and effective way of paying taxes becomes faster and thereby reducing compliance cost. Egesa (2017,7) ICT emphasized on low-cost, security, convenience, predictability, and transparency the assurance that intermediaries will preserve the confidentiality of information. Among the various segments of IT application services, the greatest opportunities lie in traditional services (about \$100 billion), system integration (\$50 billion), application development and maintenance (\$43 billion), and

consulting (\$6 billion). For IT engineering services, opportunities were significant in mechanical design and production (about \$45 billion), embedded software (\$40 billion), and plant engineering \$35 billion. The effect on service delivery outcomes of a new ICT platform allowed citizens to send free and anonymous messages to local government officials. Thus reducing the cost and increasing the efficiency of communication about public services through ICT (Rodden, 2018). ICT infrastructure is a key determinant of development in the knowledge era. Taxpayers expect that they are able to handle their affairs online, hassle-free (IOTA, 2018).

➤ *ICT and Revenue Administration*

Tax or revenue administration automation had a positive effect on the cost of tax administration, automation and effectiveness of revenue collection (Haughton, Desmeutes, 2001, 7). ICT had positive impacts on bureaucratic procedures and efficient public service delivery. The use of emerging ICT to facilitate the processes of government and public administration.

Chris (2003) New ICTs can be grouped into three categories: i. Information technology uses computers, which have become indispensable in modern societies to process data and save time and effort. This network is the most innovative and fastest-growing new technology and has become crucial for contemporary societies. The application of digital ICT is to reform governmental structures, politics, and public administration. Digital governance is the next step for governments at all levels to reduce costs, meet citizen expectations, and achieves economic recovery goals. ICT relationships included faster access to the web, mobile service delivery, networking, teleconferencing and use of multi-channel information technologies to accomplish higher-level two-way transactions (Warren, Davies & Brown, 2008). The fully electronic payment method was the most cost-effective means of collecting tax payments (OECD, 2010). Reduction of tax administration costs, in terms of human and other resources costs, from the perspectives of both service providers (tax administration) and taxpayer. Electronic tax filing system saved taxpayers' time to prepare tax returns, and together with electronic tax payment system, taxpayers no longer have to visit tax offices for tax returns by post (Kariuki, 2013).

The linkage between ICT and service delivery tend to believe that they can utilize tools such as Internet, Web and Government) services to deal with local concern (Averweg, 2015). ICT drive service delivery is to be transformed e-government services as key services for improving productivity, efficiency, effectiveness and governance in all sectors. Developments in ICT in recent decades, both for electronic filing and payment of taxes, have presented many opportunities for revenue bodies to increase government revenue, improve efficiency and enhance the quality of services delivered to taxpayers, while at the same time reducing taxpayer compliances burden, government administration cost and improving enforcement (OECD,2017).

As convenience prospective, ICT promises many advantages mainly reduce transaction cost, improve productivity, offer immediate connectivity, voice data, visual, improving efficiency, transparency and accuracy, increase choice in market place and easy access in service delivery, omit the barrier of geographical areas, channel of sharing knowledge and information (Grossman, Michelitch, & Santamaria, 2017).

Developed countries are investing huge amounts in digital technologies like robotics, artificial intelligence, big data analytics and 3D printing, developing countries are still struggling to build their ICT infrastructure and improve their internet penetration. The systems for taxation should be flexible and dynamic to ensure the technological and commercial development (OECD, 2019). Ashikuzzaman (2019) Users mostly benefited through ICT such as: provide speedy and easy access to information, remote access to users and 24x7 access. Khatiwada (2019) IRD strategic plan for the next five years plan (2018/19-2022/23) also expected to get better service delivery with digitalization of the system and simplification of the process, generate more revenue and tax reform process appropriately. Reforming tax policy, enhancing taxpayer service promoting voluntary tax compliance and initiating information based enforcement mechanism are the key pillars and intervention areas in order to create an efficient revenue system of the country.

Kudo (2019, 46) ICT led to a transformation in work processes and service delivery, lowers transaction cost with improvement in transparency and accountability. In 2016, Dutch investigation by a parliamentary commission pointed out that failure of ICT projects in the public sector in Netherlands was much more common than success, estimated to result in waste of money of 1-5 billion Euros a year. The web-based services started to be replaced by various new techniques and technologies enabled by the digitalization, Big Data, IOT (Internet of Things) and AI (Artificial Intelligence).

Mainali (2019) the weak integrity of prevailing in revenue administration by developing countries as common attributes like Nepal. The application of ICT reduces and skips the embezzlement in Nepalese revenue administration. The revenue administration cannot be isolated from whole ecology of bureaucracy and significant improvement in policy reform. Some policy intervention may further require eliminating dishonest behavior and enhancing integrity in Nepal's revenue administration. OECD (2020) digitally trade as International transactions delivered remotely in an electronic format, using computer networks specifically designed for the purpose. Digitalization had a wide range of implications for taxation, impacting tax policy and tax administration. Thus, almost governments around the world are introducing e-government (ICT tool) as a means of reducing costs, improving services for citizens and increasing effectiveness and efficiency at national, regional and local levels of the public sector. The economic advantages of ICT, such as the possibility to reduce the cost and to save time, the use of ICT in all kinds of organizational structures has

increased substantially over the last years. The shift in the application of ICT is leading to observable changes within the organizational structures of the economy. E-government can improve efficiency in the delivery of government services, simplify compliance with government regulations, strengthen citizen participation and trust in government, and yield cost savings for citizens, businesses and the government itself.

Hence, IRD succeed to save the cost through ICT used. The movement for the entire government in general is also paradigm shifted from classic bureaucracy to New Public Management and to network and digital governance. ICT improved the administrative capacity of government organization.

IV. RESULT AND ANALYSIS

➤ Secondary data Analysis

FY	Cost per thousand (Rs)	Change rate (in %)
2063/64	16.38	-
2064/65	9.9	(39.56)
2065/66	5.61	(43.33)
2066/67	4.99	(11.05)
2067/68	12.72	154.91
2068/69	9.99	(21.46)
2069/70	10.15	1.60
2070/71	9.96	(1.87)
2071/72	7.56	(24.09)
2072/73	7.77	2.77
2073/74	5.88	(24.32)
2074/75	5.41	(7.99)
2075/76	4.21	(22.18)
2076/77	3.62	(14.01)
2077/78	2.52	(30.38)
Average	7.778	
Max	16.38	
Min	2.52	
S.D.	3.76	

Source: Annual report of IRD, 2071, 2077 & 2078

Table 1:- Cost per thousand for revenue collection

The cost per thousand for revenue collection of IRD is fluctuating during the study period. The revenue collection cost is decreasing in the last ten years i.e. from FY 2069/70. The revenue collection cost per thousand is Rs.16.38 in 2063/64 and reduced to Rs.2.52 in the last year 2077/78. The average revenue collection cost per thousand is Rs.7.778. The highest revenue collection cost per thousand is Rs.16.38. It means that the used of ICT reduces the revenue collection cost and prompt service delivery through ICT used. Thus, Technology is being improved through the ICT and taxpayers can easily be made to complete their tax obligations without necessarily visiting the tax office or the bank.

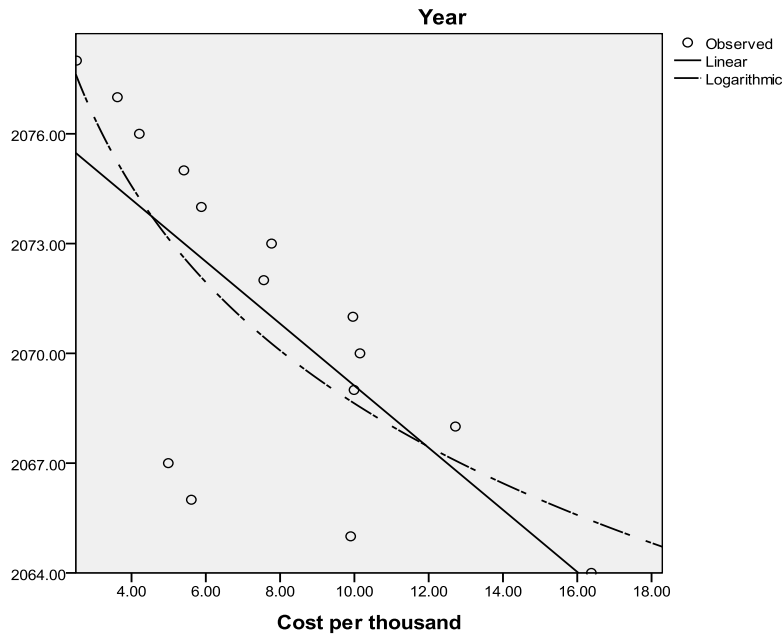


Fig 1

By observing the figure the linear growth has occurred through logarithmic analysis and the revenue collection cost is also declining. The inferential analysis has been done as stated below.

➤ Regression Analysis

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.712	.508	.470	3.25688	.665

ANOVA^s

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	142.105	1	142.105	13.397	.003 ^a
	Residual	137.895	13	10.607		
	Total	280.000	14			

a. Predictors: (Constant), Cost per thousand

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Co linearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	2077.596	1.989		1044.728	.000					
	Cost per thousand	-.848	.232	-.712	-3.660	.003	-.712	-.712	-.712	1.000	1.000

a. Dependent Variable: Year

Table 2:- Correlation and Regression analysis

The dependent variable year with the revenue cost per thousand (r) is 0.712 and r square is 0.508. It means that cost per thousand is changed by 50.8% and the remaining portion is affected by the other variables in the year changed. Durbin Watson test also shows that there is no possibility of auto correlation since it's value is greater than zero i.e. 0.665. Similarly, ANOVA test also shows that there is significant

relation between revenue cost and time since p value is 0.003 i.e. less than 0.05 at 5% level of the significance. Further, by analyzing the coefficient of beta, if time is change in 1 i.e. per year, the revenue cost is decreased by 0.848 per thousand after the application of ICT in revenue administration or collection.

Similarly, partial correlation shows that there is negative relationship between cost per thousand of revenue and year i.e. cost of revenue decreases if the year change. By p-value analysis, the relationship between cost per thousand and year (variables) is significant since p value is 0.003 less than 0.05 at 5% significant level. Similarly, VIF (Variance Inflation

Factor) is 1 i.e. less than 10 indicates that there is no possibility of multicollinearity. Likewise, tolerance value of variables are also greater than 0.10, this result also indicates that there is no chances of occurring multi-collinearity of as stated variable.

➤ *Primary data Analysis*

Description	Strongly disagree	Disagree	Fairly agree	Agree	Strongly agree
Timesaving	2 (1.6%)	10(7.9%)	26(20.6%)	87 (69%)	Nil
Speedy	2 (1.6%)	9(7.1%)	49(38.9%)	64(50.8%)	1 (0.8%)
improved_operating_system	1(0.8%)	1(0.8%)	14(11.1%)	106(84.1%)	3(2.4%)
ICT increased transparency	1(0.8%)	1(0.8%)	39(31%)	78(61.9%)	5(4%)
reduced collection cost	1(0.8%)	3(2.4%)	21(16.7%)	98(77.8%)	2(1.6%)
Accuracy in efilling	Nil	6(4.8%)	15(11.9%)	98(77.8%)	6(4.8%)
Timeliness	2(1.6%)	6(4.8%)	25(19.8%)	84(66.7%)	8(6.3%)
Availability	1(0.8%)	24(19%)	21(16.7%)	72(57.1%)	7(5.6%)
Saved cost and time	Nil	5 (4%)	47(37.3%)	71(56.3%)	2 (1.6%)

Source: Field Survey, 2022

Table 3:- Frequency Details

Almost respondents 69% agree that ICT based service delivery (E-VAT) saved time and 56.3% agree and 1.6% strongly agree with both time and cost saving in e-filling. Similarly, 37.3% fairly agree regarding the same view. However, 4% respondents disagree and no one respondents strongly disagree that ICT based service delivery reduced the time and cost in E-VAT.

By informal interview and queries behind to their dissatisfaction or disagreement regarding ICT reduced the time and cost in E-VAT, respondents faced the web log in and hang problem while e-filling. Similarly, IRD imposed fine and penalty due to delay just 1 day; late submission because of system error/ problem or IRD server problem. Sometime respondents also frequently visit for user ID due to forget the password which waste their time. Similarly, internet is also costlier and strong broadband internet is needed for e-filling which also raise the service cost of an organization. Hence the respondents could not fully believe to reduce their time and cost even launching ICT in e-filling or E-VAT as similar findings of World bank(2016) stated with 75% people had accessed to a cell phone globally but the internet access through mobile or broadband connection remain expensive.

People are not need to travel a long distance physically for the government services. Hence, ICT promoted e-transparency through automating e-services such as e-filling return or E-VAT and also disseminating the information towards shareholders. ICT also enhanced the interaction between taxpayer and tax administration bodies. Convenience and flexibility in better service delivery and higher service recipients satisfaction can generate if E-VAT services are speedy. Almost respondents said that E-VAT

services are speedy which is 50.8% agree and 0.8% strongly agree that they satisfied with E-VAT filling return and feel speedy. The reason behind to dissatisfy respondents is that E-VAT return is not available in mobile and even computer. Moreover, it is available in Mozilla Firebox only. Similarly, the internet cost is also higher in Nepalese scenario. Henceforth, the e-filling is not available as they feel.

In this context, almost respondents 77.8% agree and 1.5% strongly agreed that ICT reduced the collection cost in E-VAT/ e-filling as compared to the paper based submission or physical visit. This finding is similar to Warren, Davies and Brown (2008) digital governance reduced the cost and increases the trustworthy over the internet. Likewise, 61.9% and 4% respondents agree and strongly agree that IRD demonstrates the transparency in the interaction and operation through ICT as maximum utilization of ICT. However, few of them even indicate that though the system is transparent, there is a still chance of revenue leakage for large taxpayers or service recipients by under billing of the transaction and more profit margins. The small and medium taxpayers or service recipients have faced the fine and penalty frequently, normally 3 to 6 times in a year.

Almost respondents 84.1% respond that IRD improved the operating system in E-VAT. Further, 66.7% agree and 6.3% strongly agree with timeliness of e-filling. Similarly, 57.1% agree and 5.6% strongly agree with availability in E-VAT. In depth interview among 25, almost 80% agree that e-filling on ICT used in VAT decrease the line and waiting physically in tax offices which led to cut off the number of staffs. On the other hand, ICT also decrease the revenue leakage and fraud due to online filling or tax return system.

	N	Minimum	Maximum	Mean	Std. Deviation
Time saving	125	1.00	4.00	3.5840	.70920
Speedy	125	1.00	5.00	3.4240	.71011
improved_operating_system	125	1.00	44.00	4.1840	3.61980
ICT increased transparency	124	1.00	5.00	3.6855	.60307
reduced collection cost	125	1.00	5.00	3.7760	.55160
Accuracy in e-filing	125	1.00	5.00	3.6480	.62548
Timeliness	125	1.00	5.00	3.7200	.72513
Availability	125	1.00	5.00	3.4800	.89443
Saved cost and time	125	1.00	5.00	4.0320	.80258

One-Sample Test						
	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Timesaving	55.394	119	.000	3.60833	3.4794	3.7373
Speedy	52.949	119	.000	3.39167	3.2648	3.5185
Improved operating system	64.403	119	.000	3.55833	3.4489	3.6677
ICT increased transparency	12.457	119	.000	4.20000	3.5324	4.8676
reduced collection cost	65.441	118	.000	3.67227	3.5611	3.7834
Accuracy in e-filing	74.970	119	.000	3.78333	3.6834	3.8833
Timeliness	57.357	124	.000	3.72000	3.5916	3.8484
Availability	43.500	124	.000	3.48000	3.3217	3.6383

Source: by using SPSS, Field Survey 2022

Table 4:- Descriptive Statistics

The mean value of time and cost saving, reduce collection cost, timeliness, time saving, accuracy in e-filing and speedy are greater than 3 means agree view. Similarly, the mean value of ICT increased the operating system is 4.184 which is higher than as stated variables and almost agree in this view. By analyzing the independent sample t-test of stated variables also shows that all of them are significant since p-value is (0.000) is less than 0.05 significance level 5%.

V. CONCLUSION AND OUTLOOK

The revenue collection cost per thousand is decreasing subsequently after the application of ICT. Similarly, almost respondents agree that ICT based service delivery (E-VAT) save both time and cost in e-filing. Service recipient's major dissatisfaction or disagreement regarding ICT reduced the time and cost in E-VAT is respondent's faced the web log in and hang problem while e-filing. Similarly, internet is also costlier and strong broadband internet is needed for e-filing which also raise the cost of both service recipients and service providers. ICT also enhanced the interaction between taxpayer and tax administration bodies. Convenience and flexibility in better service delivery and higher service recipients satisfaction can generate if E-VAT services are speedy. Almost respondents said that E-VAT services are speedy. However, few of respondents' dissatisfy that E-VAT return is not available in mobile and available in Mozilla Firefox browser only. By descriptive analysis, almost respondents agree regarding the time saving, increased operating system and other as stated variables through ICT and all of the variables are significant at 5% significance level.

For the taxpayers, the benefits includes save time through e-payment; fast and convenient way, increase transparency, prompt service delivery. On the revenue office side, increase quality and quantity of tax related information, reducing tax evasion and fraud, improve tax revenue, effective taxpayers data encoding and for using software. Henceforth, Government of Nepal (GON) also makes the policies to cut off or reduce the cost of telecommunication and broadband internet for the easy access and availability of e-filing and update server system, launch apps (E-VAT, e-tax) and easy accesses in mobile also.

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