

Effectiveness of Value Added Tax (VAT) analysis in Nepal

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Abstract

This research aims to assess the evasion of the Value added tax in Nepal. The specific objectives are: evaluating the VAT evasion on the Nepalese economy; the study follows explanatory research designs. The primary data is collected by conducting field survey using pre-structured questionnaires. Altogether 400 respondents from the four categories are interviewed: 100 from VAT payers, 100 from VAT administration, 100 from VAT experts and 100 from business community all over the country, respondents were requested to indicate their degree of conformity with specified statements using 5-point scale.

The results of the regression model shows that the expected sign of the variable included in the model as per priory expectation. VAT rate complication and complex legal provisions are negatively related, while administrative efficiency and incentive for VAT collection are positively related with VAT collection efficiency. The computed F-statistic is also higher than table value at 95% level of significance. The coefficient of VRC is 0.08932, meaning that the change in 1% on VAT rate will decreases in VAT effectiveness by 0.089 percent point. The regression model shows that the t-statistic 1.135 and p-value 0.2569>0.05 not significant at 5%. Therefore, the null hypothesis is accepted, indicating that VAT rate has no significant impact on VAT effectiveness

Keywords: Effectiveness, VAT, Administrative efficiency, VAT rate

Introduction

The effectiveness can be considered as ability of government to collect taxes with low costs. The administrative cost of tax system is a sum of all government level costs associated with tax system. It can also be assumed that the criteria of effectiveness of taxation are total burden, which is a sum of all also administrative costs, compliance costs and dead weight

loss. Economists argue that tax authorities should be as neutral as possible in decisions, because the discretionary power in decisions-making hamper the system. Undistorted governments could get a higher tax take and consumers could consume in patterns they prefer.

Despite the large literature on tax administration and compliance and their impact on tax revenue, there have been few

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attempts to quantify this impact, perhaps due to the non-availability expertise of a suitable tax administration. There are very limited studies that quantify the impact of administrative measure on tax revenues at the sub-national level. One study that captures the impact of administrative reform on growth in VAT revenues at the state level is that by Pinhanez (2008). The power of tax administration, inspectors on assessment, detailed tax audits, inspection of taxpayer business premises, imposition of penalties, tax prosecutions, and other relevant issues should be adequate as laid down in the tax law or tax administration law. Tax administration procedural manuals and rules, forms for taxpayers, and related online or off-line supporting documents should also be more or less complete and easily accessed by both the tax administrators and taxpayers (Gupta, 2016).

Literature review

VAT income is determined by a number of factors, including economic situation of the country, which is best characterized by gross domestic product. In addition, the higher standard of living in the country considers higher GDP per capita, which leads to the higher consumption, the better awareness of tax payments and lower tax fraud, consequently the relationship with GDP per capita is extra revised (Bikas and Andruskaite, 2013). Due to the fact that VAT is consumption tax, primarily VAT income depends on the consumption level in the country.

The concept of VAT was introduced in 1919 by Dr. Wilhem Von Siemens in Germany. This concept was brought to replace

the "Usnatzsterller" (multi stage sales tax) due to its undesirable effects, particularly cascading and vertical integration of the latter tax (MST) for the first time. The Germany knew the administrative complication of the VAT system. So, it has the fear to implement. Therefore, the rate of *unsatzsteuer* is reduced instead of the implementation of VAT. In 1921, the America was implementing the corporate income tax. Prof. Thomas S Admas suggested the tax for the United State of America to replace the existing tax system. Until early 50s the development of VAT remained limited only in the theory. France was the first implementer of VAT in 1954 covering only in the industrial sector. The VAT was limited to only up to whole level. But these countries limited the VAT only on import and manufacturing stage. In late 60s, VAT started to become popular. Countries like Denmark and Brazil adopted this system of tax in 1967. France, the first implementer of VAT, extended it to the retail level for the first time. And Germany also adopted VAT in the same year. In 1969, the countries like Netherlands and Sweden also adopted VAT in their countries. In 1970, 1971 and 1973, Luxembourg, Belgium and Ireland introduced the VAT respectively. In Asia, Vietnam was the first country to introduce this most scientific tax system. The country adopted VAT in 1973. The trend being VAT popular was increasing all over the world. In 1977, 1984, 1985, 1986, South Korea, China, Indonesia and Taiwan introduced VAT respectively. Similarly, VAT was introduced by Philippine in 1988, Japan in 1989, Thailand in 1992 and Singapore in 1994. In SAARC region, Pakistan was the first adaptor of VAT. It implemented VAT in 1990. India intro-

duced VAT first as modified value added tax (MOD VAT) in 1996. But actually, in India, VAT replaced sales tax on 4 January 2005. Though some state did not adopt for VAT (for political reasons), majority of the State embraced VAT, States like Andhra Pradesh and Maharashtra taking the lead (Mishra, 2005). The Empowered Committee, constituted by Government of India, provided the basic framework for uniform VAT laws in the states but due to the federal nature of Indian constitution, States do have a liberty to set their own valuations for the VAT levied in their own territory. India introduced the full VAT in some prescribed regions of the country on April 1, 2005. Around 130 countries have introduced VAT system across the world.

To meet the growing public expenditure, the government has to manage its funds from internal as well as external sources. External source of funds are foreign loans and grants, which are uncertain, inconvenient, and not good for healthy development. Therefore, it is better to mobilize internal sources rather than expecting from the donors (Brys, 2011). Taxation has become a main internal source of resource mobilization to meet the financial requirements of the government. It is helpful through economic stability. It is looked upon as a powerful tool of the government for the purpose of internal resource mobilization (Silwal, 2000).

Jayakumar, A. (2019). This paper focuses on the importance of VAT in the Indian society, its impact and the future prospect for goods and service industry in India. The Government levies taxes from consumers for developing infrastructural,

technological, entrepreneurial requirement of the country. The study exposed that the necessity of transparency in VAT in across the India. It also found that equal channel of distribution of VAT is found among wholesalers, retailers and consumers. Oladipupo and Izedonmi (2020) have evaluated the public perception and attitude towards VAT in Nigeria. They found that most of the respondents have poor knowledge of VAT in Nigeria, irrespective of their level of literacy. The authors suggested that tax compliance depends on the taxpayers' knowledge, awareness and understanding of the VAT. It believes that public education on the subject matter of VAT curricula of education in our institutions, higher education, and organized workshops for specific groups will help to improve the awareness of various tax laws and matters. Kamal (2021) suggested that VAT is highly capable to give benefit to the Government. It must be reformed. A transparent approach and uniformity in the VAT rate require. The consumer should ask for the cash voucher whenever they purchase any product. So the Government will get the benefit through the VAT as well as the public will also be benefited. Samaduzzaman, M. (2022) has examined that VAT increase and its impact on UK consumers. This aim of the study is to find out how increased standard VAT influences customer's satisfaction and consumption habit in the North Wales area. The author found that VAT increase has significant impact on consumers' consumption habit

Methodology

The study has attempted to examine the relationship between impact of effective-

ness of value added tax (VAT) descriptive and explanatory research design has been applied. VAT rate complication, legal provision, administrative efficiency, VAT efficiency, and leakages of VAT effect are examined. Population and sample: for analyzing the effectiveness of VAT views of stakeholders were collected through opinion survey through structured questionnaire. For this purpose, the stakeholders from VAT payers, VAT experts, VAT administration and business community in the country are taken as the population of the study. Conveniently for opinion survey analysis 500 structured questionnaires were distributed but 400 have been responded analyzed to measure the effectiveness of VAT. An equal sample size of 100 questionnaires from each category of stakeholders has been analyzed. For this purpose, an attempt was made to determine a representative sample size.

Sample size determination: The following method was used for determining sample size for the study in case of unknown population.

$$n = z^2 \frac{p \cdot q}{e^2} \dots \dots (1) \quad = 384$$

Where, $Z=95\%$ confidence level of confidence.

P = Assuming probability of occurring p is 0.50 (for P unknown, the maximum value of the product $p \times q$ is achieved when p is taken 0.50).

$$q = 1-p, = 1-0.50, = 0.50$$

Although statistically the total sample size (n) is determined to be 384, a total of 384 respondents were determined. However,

100 from each category of respondents such as VAT payers, VAT experts, VAT administration and Business community from various provinces were selected in view of the possibility of nonresponse from respondents. This study requires only primary data to analyze effectiveness of VAT.. Perceptions of stakeholders are collected as primary data for the opinion survey, a questionnaire was structured on a 5-Point Likert- scale. The data has been collected from various parts of Nepal through administration of questionnaire. A structured questionnaire using Likert type five-point scale had been used to collect the primary data. The questionnaires were divided into three parts. The respondents were requested to indicate their degree of conformity with specified statements using 5-point scale anchoring as '1' for strongly disagree, '2' for disagree, '3' for slightly agree, '4' for agree and '5' for strongly agree.

Model Specification

Model : Perceived effectiveness of VAT as a dependent variable

For the analysis, VAT collection effectiveness (VE) has been taken as dependent variable, whereas VAT rate complication (VRC), complex legal provision (CLP), administrative efficiency (AdmE) and incentives for VAT collection (IVC) are independent variables. The factors for VAT evasion are also considered as independent variables for perceived VAT effectiveness. VAT rate complication is expected to have negative relationship with VAT effectiveness. This implies that VAT rate complication leads to ineffective VAT collection. Similarly, complex legal provi-

sions (CLP) and VAT effectiveness for VAT collection also have negative relationship, as increase in complexity on legal provisions leads to decrease in VAT effectiveness. Similarly, other factors remaining constant administration efficiency leads to enhanced effective VAT collection. Likewise, increase in administrative efficiency leads to increase in VAT effectiveness. It is also expected that administrative efficiency and effectiveness for VAT collection have positive and significant relationship, and VAT incentives for collection (IVC) have also been predicted to have positive relationship, meaning that increase in VAT incentives increase the VAT collection. A multiple regression model has been employed to measure the significant impact of independent variable on dependent variable.

$$VE = \beta_0 + \beta_1 VRC + \beta_2 CLP + \beta_3 AdmE + \beta_4 IVC + \dots + e_i$$

Where,

VE represents effectiveness for VAT collection

VRC represents VAT rate complication

CLP represents complex legal provision

AdmE represents administrative efficiency

IVC represents Incentives for VAT collection

H_{10} : VAT effectiveness has been significantly affected by VAT rate complication, Complex legal provisions, VAT evasion and incentive of VAT collection.

The qualitative data were collected from the researcher conducted an opinion survey with various stakeholders. The overall alpha value for effectiveness of milk production is 0.806 which is more

than 0.7 as standard set by Kervin (1992) and above than the standard 0.6 set by the Mohapatra (1993). So, the collected data satisfies the reliability and valid for further analysis. Multiple regression analysis has been applying to measure the impact on dependent variable through independent variable and other intervening variables. Multiple regression analysis has been used to identify the factors affecting effectiveness of milk production. Moreover, Normality test of the Jarque-Bera test has been used to test goodness-of-fit of whether sample data have the skewness and kurtosis matching a normal distribution. To avoid some of the pitfalls of the Durbin-Watson d test of autocorrelation, serial correlation test has been used. Multicollinearity test has also been conducted to check multicollinearity in the model.

Results and Discussion

For the analysis, VAT collection effectiveness (VE) is taken as dependent variable, whereas VAT rate complication (VRC), complex legal provision (CLP), administrative efficiency (AdmE) and incentive for VAT collection (IVC) are independent variables.

It is assumed that VAT rate complication has negative relationship with VAT effectiveness, meaning that VAT rate complications lead to ineffective VAT collection. Similarly, complex legal provisions (CLP) and VAT effectiveness for VAT collection have negative relationship, indicating that increase in complexity on legal provisions leads to decrease in VAT effectiveness. Similarly, other factor being constant, administration efficiency leads

to increased effective VAT collection. It is expected that administrative efficiency and effectiveness for VAT collection have positive and significant relationship, and VAT incentive for collection (VIC) has also been predicted to have positive relationship, implying that increase in VAT

incentive will increase in VAT collection. A multiple regression model has been used and the results are presented in Table 6.23

$$VE = \beta_0 + \beta_1 VRC + \beta_2 CLP + \beta_3 AdmE + \beta_4 VIC + \dots + e_i$$

Table 1

Regression result of VAT effectiveness

VE = 31.824*	- 0.0893VRC	-0.1151 CLP	+0.196** AdmE	+0.1037VIC	+e _i
[9.23882]	[0.0786735]	[0.092432]	[0.09055]	[0.06589]	
{3.445102}	{-1.135001}	{-1.24632}	{2.156013}	{1.574010}	
Obs; 400	F- _(4,395) : 22.5726*		Adj R ² : 0.4912		
Df; 395			Durbin Watson d test: 1.832		
Normality test: J-B stat: 15.078					
Multicollinearity test:	Variables		VIF		
	VAT rate complication		1.026		
	Complex legal provision		1.024		
	Administrative efficiency		1.066		
	VAT incentives for VAT collection		1.032		

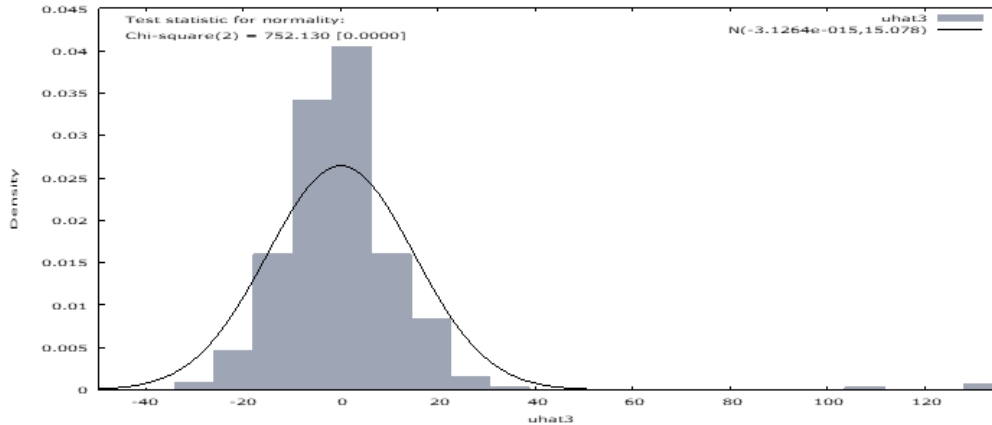
Figures in parentheses [], { } indicates standard error and t-statistics of the concerned variables and p-values

- (*) Significant at (0.01) 1% level
- (**) Significant at (0.05) 5% level
- (***) Significant at (0.10) 10% level

The results of the regression model shows that the expected sign of the variable included in the model as per priori expectation. VAT rate complication and complex legal provisions are negatively related, while administrative efficiency and incentive for VAT collection are positively related with VAT collection efficiency. The computed F-statistic is also higher than table value at 95% level of significance.

Durbin Watson test: The Durbin-Watson statistic is between 0 and 4 scale. DW test-statistics is 1.832 and p-value is 0.000<0.05 significant at 1% level. Therefore, the null hypothesis is accepted, meaning that residuals are not auto correlated.

Normality test: The Jarque– Bera test shows that the JB statistic is about 15.078 and the probability of obtaining such a statistic under the normality assumption is about 0.000<0.01 significant at 1%. Null hypothesis: residuals are not normally distributed. Therefore, the null hypothesis has been rejected and alternative hypothesis accepted, implying that the error terms are distributed normally.



Multicollinearity test: Null hypothesis: explanatory variables are not correlated., the VIF for the predictor tells us that the variance of the estimated coefficient of Weight is not inflated by a factor of VIF because $VIF < 10$. So, the null hypothesis is accepted meaning that explanatory variables are not collated or the model has no multicollinearity problem.

All independent variables are regressed with the dependent variable VAT collection effectiveness (VE). Analyzing the coefficient of all independent variables in the model, the statues of hypothesis appear as follows.

H₁: There is significant negative relationship between perceived VAT rate complication and the perceived effectiveness for VAT collection.

The coefficient of VRC is 0.08932, meaning that the change in 1% on VAT rate will decreases in VAT effectiveness by 0.089 percent point. The regression model shows that the t-statistic 1.135 and p-value 0.2569 > 0.05 not significant at 5%. Therefore, the null hypothesis is accepted,

indicating that VAT rate has no significant impact on VAT effectiveness.

H₂: There is significant negative relationship between perceived complex legal provision and the perceived effectiveness for VAT collection.

The coefficient of CLP is 0.1151, which implies that the change in 1% on legal provision will lead to change 0.1152 percent point change on VAT effectiveness. The regression model shows that the t-statistic is 1.246 and p-value 0.2135 > 0.05, not significant at 5% level. Therefore, null hypothesis is accepted, meaning that legal provisions have no significant impact on VAT effectiveness for collection.

H₃: There is significant positive relationship between perceived administrative efficiency and the perceived effectiveness for VAT collection.

The coefficient of administrative efficiency VAT on evasion is 0.1960 meaning that the change in 1% on administrative efficiency will lead to change 0.1960 percent point change on VAT effectiveness for collection.

The regression model shows that the t-statistic is 2.156 and p-value $0.0317 < 0.05$ significant at 5% level. The null hypothesis is thus rejected and alternative hypothesis is accepted, implying that administrative efficiency has significant and positive impact on effectiveness for VAT collection.

H_4 : *There is significant positive relationship between perceived VAT incentives and the perceived effectiveness for VAT collection.*

The coefficient of VAT incentives on VAT effectiveness is 0.1037, which means that the change in 1% on VAT incentives leads to change 0.1037 percent point on VAT effectiveness. The regression model shows that the t-statistic is 1.574 and p-value $0.1162 > 0.05$ not significant at 5% level. The null hypothesis is accepted, indicating that VAT incentives have significant impact on contribution for VAT (VAT effectiveness).

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