

URBAN LOCAL BODIES IN INDIA: FINANCIAL CONTROL FOR BETTER FINANCIAL PERFORMANCE

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Abstract

There is a constitutional imbalance between the functions and finances of Urban Local Bodies (ULBs) in India and most of these are grossly dependent on transfer of funds from upper tiers government. Financial performance of small and medium-sized ULBs is not satisfactory as there is inadequate transfer of fund from upper tiers of governments and inability on the part of ULBs to put their best efforts for mobilizing existing source of own revenues. In such a situation there should be an effective expenditure management system for better financial performance. Effective expenditure management begins with budgetary control system but budgets in Indian ULBs cannot be effectively used for this purpose. Therefore the authors suggest for exercising their recommended financial controls which help the ULBs to increase recurrent surplus or decrease recurrent deficit. Increase in recurrent surplus does not necessarily mean increase in percentage of recurrent surplus. The authors think that financial controls should be exercised as a management control process over the years and this will help the ULBs to increase the percentage of recurrent surplus or to decrease the percentage of recurrent deficit. They have established their views statistically through a case study applying regression methodology on population data collected from secondary source. They have used dummy dichotomous independent variables for presence or absence of financial controls along with other variables. The study ends with validation of the model using RMSE (Root Mean Square Error).

Keywords: Urban Local Bodies, Financial Performance, Financial Control, Regression Analysis, Dummy Dichotomous Variable.

1. INTRODUCTION

The local authorities have to perform a significant task of managing difficult and complex issues of the local people. The management of financial resources is directed towards electoral programs and also to satisfy the immediate or future needs of the local communities. There is a confrontation between the limited financial resources and the unlimited needs for public services. (Tesu, 2011). Urban Local Bodies (ULBs) in India also face similar challenges. In India the 74th Constitutional Amendment Act, 1992 has accorded constitutional status to ULBs across the country for effective functioning and to ensure provision of urban services and infrastructure. The Act has specified the functions of ULBs

without any corresponding list of legitimate sources for revenue. As a result there is a constitutional imbalance between the finances and the functions. It may be noted here that the extent of devolution of function to ULBs is at the discretion of the State Government and therefore the extent of devolution may vary significantly across the country. Though 74th Constitutional Amendment Act envisages for devolution of additional taxation powers to ULBs so as to make them financially competent for discharging the added functional responsibilities, but unfortunately there is no such devolution of taxation powers and such powers are limited to traditional sphere. ULBs are supposed to carry out decentralized functions effectively and for this purpose they should have passable level of revenue either raised locally or transferred from the central government as well as the authority to make decisions about expenditures (Mbedzi and Gondo, 2010). ULBs in India, like most of the countries all over the world, have own source of revenues in addition to transfer from upper tiers of governments. It is true that revenue generating sources assigned to the ULBs are inadequate in comparison to expenditure functions assigned to them but it is also true that the ULBs do not put their best efforts to mobilize revenue efficiently and effectively from the sources so assigned and therefore the ULBs are not in a position to provide services satisfactorily because of inadequate resources. All these have made the ULBs grossly dependent on the transfer of fund from the upper tiers. There is rapid urbanization in India and expenditure functions and responsibilities of ULBs are increasing. Cost of providing services has become more expensive as compared to income base which is remaining static. In such a situation better financial performance is necessary for financial sustainability of ULBs.

2. FINANCIAL PERFORMANCE INDICATOR

Review of some relevant literature is necessary before selecting an appropriate financial performance indicator. Performance measurement has been dominated by management control systems that are focused on control and then improvement. (Sgardea et al, 2011) and performance management should ensure continued and sustainable growth of enterprise performance. (Goncharuk, 2011). The use of indicators for evaluating financial performance has advanced considerably in recent years. However, many criticisms have been made by public sector managers concerning the application of such indicators. (Zafra-Gómez et al, 2009). Researchers have used several indicators like ULB's inability to meet payrolls, repay bonded debt when due, trends in a Local Government's tax base, expenditures and commitments etc. (Kloha et al, 2005).

The responsibility of ULB is to provide services and the expenditure of such services should be incurred out of the collected revenues. Revenue collection and expenditure management in the right way can be evaluated to assess whether the municipal government is doing its responsibilities. To test the efficiency

and effectiveness of revenue collection and expenditure management, qualitative and quantitative indicators can be used. Current revenues do not always match current expenditures. As a result, there may be either a surplus or deficit. (Mbedzi and Gondo, 2010). Therefore recurrent surplus is a significant indicator for assessing financial performance of ULBs as it contributes towards infrastructure development. Generating revenue surplus is a difficult task for small and medium-sized Indian ULBs because of poor revenue collection and inadequate transfer from higher level of governments. Expenditure management tool, if effectively used, may be helpful to such ULBs in achieving recurrent surplus.

Expenditure management:

Federal, national, state, county, municipal and local governments in almost all the countries in the world are feeling some sort of fiscal squeeze (Cokins, 2002). There is scarcity of resources at ULB level also. ULBs are not sure either about adequate resource mobilization at their own level or about adequate and timely transfer of fund from upper tiers constraining the working as a whole. It has become necessity of the present days that ULBs should provide services within available resources and to generate revenue surplus for infrastructure development. Governments around the world are under pressure to control their costs and improve their services (Kidwell et al, 2002). Expenditure management is a management process to regulate the cost of services in the right way. Public expenditure management entails appropriate planning and spending; strengthening the expenditure control systems, evaluating and monitoring the expenditure control systems and evaluating and monitoring effectiveness of established systems. (Mbedzi and Gondo, 2010). Management of expenditure demands for appropriate planning relating to expenditure control and it begins with preparation of realistic budget and implementing budgetary control system. So far as the Indian ULBs are concerned, budgets are generally seen as a statutory requirement and the purpose is limited to providing sanctions for expenses and revenues (World Bank, 2007). Small and medium-sized Indian ULBs should think of exercising some other sorts of financial control for expenditure management as preparation of budget and budgetary control cannot be effectively used.

Financial control:

The matter of exercising financial control in ULBs has gained much importance over the years. Financial control should be introduced and run in such a manner so that reasonable certainty is ensured in order to fulfill the approved intentions and target. Financial control is a part of management control process and the controlling process is bounded to the decision making process (Sgardea et al, 2011). There is a

need to adopt financial controls which have the target of generating recurrent surplus through appropriate planning and expenditure control systems. Local governments are becoming increasingly dependent on their own-source revenues to cover recurrent expenditures. Municipalities are among the local urban governments and dependent on local revenue sources to finance some of public infrastructure and services (Mbedzi and Gondo, 2010). Therefore the ULBs should try to meet the recurrent expenditure out of its own source revenues. The Legislatures should not only appropriate money, but they should also ensure that funds are spent according to their intent, in an economic and efficient manner and produce the intended results (Ahsan, 1996). So far as the transfers from upper tiers of government are concerned, these should be expended efficiently in accordance with the direction. In view of the above there is a need to adopt financial controls for expenditure management and these controls should aim at; recurring payment out of grant should be made for the intended purpose and other recurring payment should be made out of own source receipts. Authors have recommended three types of financial controls for small and medium-sized Indian ULBs (Bhattacharyya and Bandyopadhyay, 2011), two of these can be used in order to generate revenue surplus. These two controls are described through the diagram below:

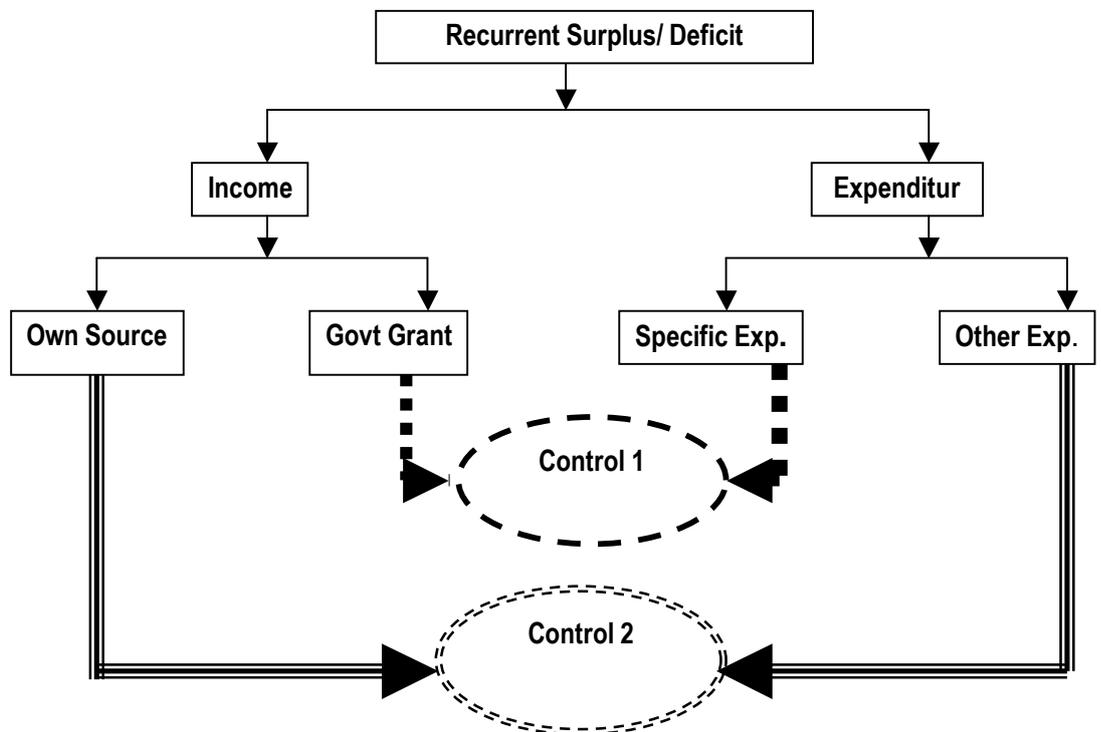


FIGURE 1 - DESCPTION OF CONTROLS

As already described recurrent surplus or deficit is the difference between recurrent income and recurrent expenditure. Income consists of two broad components, own source and government grant. Expenditure side includes: specific payment made out of the grant and other operation and maintenance payment made out of the own source receipts. The controls are to be exercised in the following manner:

Control 1: This control covers tied revenue grants received from upper tiers of governments. The grant should only be expended for the intended purpose. However, an ULB should also exercise financial control (1) to ensure that the amount of any tied grant is either equal to or more than the specific expenditures.

Control 2: An ULB should try to meet the administrative, operation and maintenance costs (all expenses other than those covered by tied grants) out of its own source revenue collection. The control is exercised when own source receipt is more than the expenditure.

Exercising above controls altogether ensures recurrent surplus only. If an ULB exercises either of the controls there will be decrease in recurrent deficit. In case an ULB fails to exercise either of the controls, as above, it is obvious that there will be recurrent deficit.

3. OBJECTIVE OF THE STUDY

Performance of a public sector unit cannot be assessed absolutely but relatively. Measuring the performance in public sector is not possible with one indicator (Argenti J 1993). We have stated that recurrent surplus or deficit is an indicator of financial performance and an ULB will be able to generate recurrent surplus in a year if the controls are exercised as these ensure savings in own fund which in other way contribute towards generating recurrent surplus. Percentage of recurrent surplus or deficit is another indicator for measuring financial performance. Increase in the amount of recurrent surplus, because of exercising financial controls, does not ensure increase in percentage of recurrent surplus. We have given sample data of one municipality to depict this fact. Exercising financial control is a part of prudent management practice and we think that financial control, as suggested by us, should not only help to increase recurrent surplus or to decrease in recurrent deficit but also to increase the percentage of surplus or to decrease in the percentage of recurrent deficit and the objective of our study to statistically establish our this views applying regression methodology on population data.

We have made a case study on the data available from West Bengal, a State of Union India. This study is important as it analyses the data of a considerable number of ULBs for five years together where data

of four years (2001-02 to 2004-05) and one year (2005-06) have been used for result as well as analysis and for validation respectively.

This study does not focus on impact of financial control on quality of expenditure in terms of specific aspects of efficiency or effectiveness of spending by urban local bodies. It does not cover intergovernmental relations with financial control. It is also important to mention that this study does not attempt to develop a scoring system for indicators and we will not be discussing the important issues connected with devolution formulae or alternative sources of revenue.

Data

West Bengal is a State of the country India and we have received secondary data of a considerable number of ULBs from the “Administration Report of Municipal Affairs Department 2001-2005, Government of West Bengal” and also from the website of this department as per description given in Table 1.

TABLE 1 - STATEMENT OF AVAILABLE DATA

Year	Total number of ULBs for which data are available
2001-02	115
2002-03	117
2003-04	122
2004-05	107
Sub-total	461
2005-06	124
Total	585

Actual data in respect of one urban local body (Kharagpur Municipality) are given to have an idea and to establish the fact that increase in recurrent surplus does not result in increase in percentage of surplus:

TABLE 2 - STATEMENT OF RECURRENT RECEIPTS

Year	Property Tax	Other Tax	Total Tax	Non Tax	Total Own Source	Grant Fund	Total Fund
2003-04	52.82	45.97	98.79	36.46	135.25	274.91	410.16
2004-05	56.89	47.16	104.05	76.16	180.21	285.33	465.54

TABLE 3 - STATEMENT OF RECURRING PAYMENTS

Year	Salary Exp	Other Exp	Total Exp	Gap	Control 1 Exercised?	Control 2 Exercised?	Surplus %
2003-04	244.69	124.82	369.51	40.65	Yes	Yes	9.910767
2004-05	256.07	167.63	423.70	41.84	Yes	Yes	8.987412

We find the data of recurrent receipts and payments under four and two heads respectively. It is evident that there is an increase in the amount of all the heads and also in the amount of recurrent surplus

(Gap) but there is a decline in the percentage of recurrent surplus. Salary expense is the earmarked expense which is paid out of the grant received from the state government. Such grant is disbursed through government treasury under separate account where the state government has full control. Treasury officers, posted under different treasury offices throughout the state, have to ensure before disbursement that an ULB is drawing the amount only for the purpose of payment of salary and wages. Therefore it can be stated that this specific grant has been expended for the intended purpose. Other expenses are the payment of administrative, operation and maintenance besides the payment of salary. So far as the exercising of financial controls is concerned we have made the analysis as follows:

Control 1: An ULB has exercised this control if the amount of grant received is equal to or more (274.91, 285.33) than the amount of salary and wages (244.69, 256.07) indicating that no fund from its own source has been expended for meeting the employees cost.

Control 2: In case the amount of own source is more (135.25, 180.21) than the amount of other expenses (124.82, 167.63) we can rightly say that the ULB has exercised this control.

In this way we have made analysis of year wise data of all the ULBs and have examined whether the controls have been exercised or not.

Research Methodology:

Several researchers have used several statistical techniques in the area of financial analysis and planning of local governments. A combined model from statistical and mathematical aspects has been proposed by Masaru and Masato (1986). Mayper et al (1991) have used regression analysis to develop a model for comparison of budgeted and actual expenditure and to explain magnitude of differences. Boustan et al (2010) have also used some statistical methods to examine the relationship between income inequality and government finances in local governments in the United States.

We have also used regression methodology to examine the impact of financial control on percentage of recurrent surplus. Multiple Regression methodology is used to analyze several variables and to establish a relationship between dependent variable and independent variables. The functional form which is most frequently used for expressing the relationship is the linear from:

$$Y_i = A_0 + A_1x_{i1} + \dots + A_mx_{im} + \epsilon_i, \quad i = 1, 2, \dots, n.$$

Multiple Regressions with two levels of categorical variables may be directly entered as predictor variables. Their use in multiple regressions is a straightforward extension of their use in simple linear regression. When entered as predictor variables, interpretation of regression weights depends upon

how the variable is coded. If the dichotomous variable is coded as 0 and 1, the regression weight is added or subtracted to the predicted value of Y depending upon whether it is positive or negative. The general equation for using “r” dummy variables is as follows:

$$Y_i = A_0 + A_1x_{i1} + \dots + A_mx_{im} + B_1 C_1 + B_2 C_2 \dots \dots \dots B_r C_r + \epsilon_i, \quad i = 1, 2, \dots n.$$

A close examination of simple linear regression when the independent variable is dichotomous proves insightful. If there are p categories, we have to use p – 1 dummy regressors. In our case we have considered two dummy variables C1 and C2 for control 1 and control 2 for presence (financial control exercised) or absence (financial control not exercised) having “1” and “0” respectively. We get the following matrix for dummy variables.

	C1	C2
Control 1	1	0
Control 2	0	1
Both the Controls	1	1
No Control	0	0

Selection of Variable

As stated earlier we have to apply regression method for analysis and there should be dependent and independent variables. Number of indicators depends on the level of analysis to be carried out and it is more difficult to determine or predict the response or answer where a large number of variables exist. So topics and categories must always be eliminated to arrive at a smaller, controllable number (Hernandez and De Hoyos, 2010). Number of variables in comparative indicators, either distinctively or combined into more useable and easily understandable one, should have ability to focus on indicator’s ability and to assess the result (Kloha, Weissert and Kleine, 2005).

TABLE 4 - DESCRIPTION OF VARIABLES WITH CODING IN SPSS

Name of Variables	Description	How Computed	As coded in SPSS
Independent	Own Fund Ratio	(Amount of Own Fund/ Amount of Total Receipts) x 100	OF_TI_P
	Own Fund Coverage Ratio	(Amount of Total Expenses- Amount of Grant)/ Amount of Own Fund x 100	TE1_OF_P
	Financial Control 1	Already described	C1
	Financial Control 2	Already described	C2
Dependent	Recurrent Surplus or deficit Percentage	(Amount of GAP/ Amount of Total Income) x 100	GAP_TI_P

Therefore we have selected only two independent variables which have been computed using own source receipt, grant and total expenses along with two dummy dichotomous independent variables for exercising financial control. We have used SPSS (16 version) for result and analysis. Details of independent and dependent variables are given in Table 4.

4. RESULTS

We have obtained several tables and have used for analysis. The ANOVA table is given in Table 5.

TABLE 5 - ANOVAB

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	131959.632	4	32989.908	444.285	.000 ^a
Residual	33859.813	456	74.254		
Total	165819.444	460			

a. Predictors: (Constant), TE1_OF_P, OF_TI_P, C1, C2

b. Dependent Variable: GAP_TI_P

The ANNOVA table tests the acceptability of the model from a statistical perspective. The regression row displays information about the variation accounted for by the model. The residual row displays information about the variance that is not accounted for by the model. A model with a large regression sum of squares in comparison to the residual sum of squares indicates that the model accounts for most of variation in the dependent variable. Very high residual sum of squares indicate that the model fails to explain a lot of the variation in the dependent variable, and one may want to look for additional factors that help account for a higher proportion of the variation in the dependent variable. The regression (131959) and residual sum of square (33859) indicate that about 79.6% (131959/ 165819) is explained by the model while the remaining 20.4% (33859/ 165819) is not explained.

The mean square is the sum of squares divided by the degrees of freedom The F statistic is the regression mean square (MSR) divided by the residual mean square (MSE). The total number of degrees of freedom is the number of cases minus 1. If the significance value of the F statistic is small (smaller than say 0.05) then the independent variables can significantly explain the variation in the dependent variable. In other words we can say that the model fits and linear relation exists.

While the ANNOVA table is a useful test of the model's ability to explain any variation in the dependent variable, it does not directly address the strength of that relationship. Therefore we have to look into the Model Summary table as given below:

TABLE 6 - MODEL SUMMARY^B

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.892 ^a	.796	.794	8.61707

a. Predictors: (Constant), TE1_OF_P, OF_TI_P, C1, C2

b. Dependent Variable: GAP_TI_P

The model summary table reports the strength of the relationship between the model and the dependent variable. R, the multiple correlation coefficients, is the linear correlation between the observed and model-predicted values of the dependent variables. Its large value indicates a strong relationship. In our study R has produced a large value as such strong relationship is established. R Square, the coefficient of determination, is the squared value of the multiple correlation coefficients. It shows that 79.6% in dependent variable is explained by the model matching with the explanation in ANOVA table.

A residual is the difference between the observed and model-predicted values of the dependent variable. The residual for a given value of independent variable is the observed value of the error term for that independent variable. A histogram or P-P plot of the residuals will help to check the assumption of normality of the error term. The graphs as derived are given below:

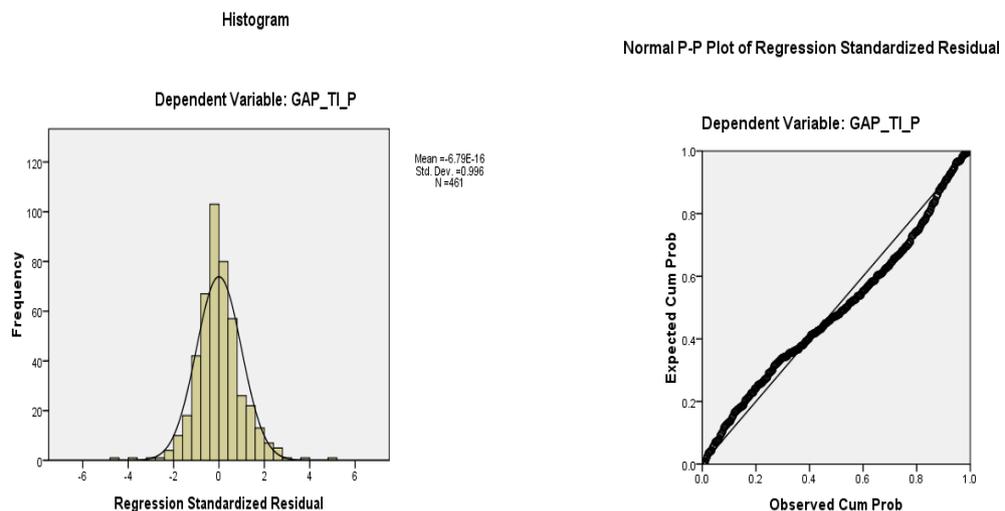


FIGURE 2 - HISTOGRAM AND NORMAL P-P PLOT

The shape of the histogram should approximately follow the shape of normal curve. This histogram is acceptably close to normal curve. The P-P plotted residuals should be the 45° line. Neither the histogram nor the P-P plot indicates that the normality assumption is violated.

We can write the estimation equation from Table 7. The equation is,

$$GAP = -4.398 + 13.124*C1+9.017*C2+0.280*OF_TI_P - 0.132*TE_OF_P.$$

The model fit looks positive. The first section of the coefficient table shows that there are four predictors in the model. The significant values of the predictors are less than 0.05 indicating that these variables contribute much to the model. T-value should not be between “-2” and “+2” and therefore this values are good. It is significant to notice that C1 and C2 have positive statistically significant relation with GAP_TI_P which denote that both the financial controls contribute towards increasing percentage of recurrent surplus or decreasing recurrent deficit. Our study confirms that financial controls are significant predictors for financial performance and help the ULBs to increase recurrent surplus.

TABLE 7 - COEFFICIENTSa

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	-4.398	1.509		-2.915	.004		
C1	13.124	1.001	.338	13.107	.000	.672	1.487
C2	9.017	1.078	.230	8.361	.000	.591	1.693
OF_TI_P	.280	.031	.220	9.102	.000	.767	1.304
TE1_OF_P	-.132	.005	-.666	-28.733	.000	.833	1.200

a. Dependent Variable: GAP_TI_P

Regression fails where multicollinearity occurs therefore variables must pass tolerance test in order to enter and remain in regression equation.

TABLE 8 - COLLINEARITY DIAGNOSTICSa

Model	Dimension	Eigenvalue	Condition Index
1	1	3.634	1.000
	2	.687	2.301
	3	.535	2.607
	4	.093	6.240
	5	.051	8.469

a. Dependent Variable: GAP_TI_P

The tolerance is the percentage of the variance in a given predictor that can not be explained by other predictor, in other words tolerance is the proportion of the variance of a variable in the equation that is

not accounted for by other independent variables in the equation. If the tolerance is close to zero, it indicates high multicollinearity. As the tolerances of all the predictor variables in the table are far from zero, it can be concluded that there is no multicollinearity and the standard error of the regression coefficients will not be inflated (Bandyopadhyay et al 2008).

A variance inflation factor (VIF) greater than 2 is usually considered problematic. All the VIF is below 2. Therefore we can conclude that the selected variables pass through this test.

Further the collinearity diagnostics confirm that there are no serious problems with multicollinearity. The engine value are not close to 0, indicating that the predictors are not inter-correlated and changes in data values will not lead to changes in the estimate of the coefficients. Values greater than 10 in the condition indices indicate a possible problem with collinearity, greater than 30, a serious problem. There is no index having greater than 10 suggesting no problem with collinearity.

5. VALIDATION OF RESULTS

Though the objective of our study is not to develop a model still the validation of the model is necessary as we have made conclusion of our study from the value of the model itself. "Root Mean Square Test" can be applied for validation. "Root Mean Square", alternatively known as "Root Mean Square Error", is a statistical measure of the magnitude of a varying quantity. It can be calculated for a series of discrete values or for a continuously varying function through the following:

$$s = \sqrt{\frac{\sum(X-M)^2}{n}}$$

where Σ = Sum of, X = Individual score, M = Mean of all scores, N = Sample size (Number of scores), Variance = s^2 . We are going to examine the error of percentage of recurrent surplus and therefore we have applied the model on the ULB wise data for the year 2005-06. The result is the predicted value of percentage of recurrent surplus. Thereafter we have computed the residuals ie., "X" by deducting the predicted value from observed value. The result of validation is given in Table 9:

TABLE 9 - RESULT OF VALIDATION

Observation	Value
a. RMSE	10.88
b. Total amount of Population data: GAP_TI_P	1205.11
c. % of (a) w.r.t (b)	0.91%

We find that the percentage of RMSE is very negligible as compared to population data and the result of the model and the conclusion drawn can be relied upon.

6. CONCLUSIONS

We have been able to establish in our study that financial controls have an impact on increasing the recurrent surplus. The positive values of both C1 and C2 in B statistics prove that existence of financial control is a good predictor for better financial performance.

In future, study may be undertaken to find out whether such financial controls help to reduce the expenditure or to increase income. It may also be interesting to examine whether ULBs, exercising such controls, can be financially sound by reducing grant dependency. In future, study may also be undertaken for predicting and classifying the ULBs using logistic regression and multi logistic regression based on financial controls.

Central and/or provincial governments periodically assess the financial circumstances of the ULBs and they are in constant efforts in developing methods of assessing the financial performance. We hope that our study can show a new dimension.

Finally we conclude that there is a need to shift from traditional way of applying financial ratio to statistical techniques in the area of analysis of financial performance in Urban Local Bodies in India.

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