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Expenditures control and performance of public health institutions: Empirical Appraisal from Nigeria

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Abstract
This study surveyed degree to which the Government control expenditure incurred, and performance of health institutions to regulate provisions of health services to the general public. The research was centered on expenditure control in the public health institutions to ensure timely rendering of health services to the masses. Other connected notions like government expenditure control and productivity processes in the public health were also appraised. The data were derived mainly from secondary sources and verbalized dialogues. A distinct element ANOVA was used to decide if there was any substantial variance in the mean values of expenditure, the reviewed real expenditure incurred, and performance in provision of health services to the people in Cross River State while the multiple linear regressions model was used to determine the cause effect of the revised real expenditure incurred and performance of health institutions of provision of health services in Cross River State. The study discovered that government real expenditure incurred and quality of performance were ineffectual; the revised actual overhead cost incurred and quantities of health services were effective while performances in the various health institutions were expressively dissimilar from their overhead cost provisions. Centered on these findings, the study suggested that: actual overhead cost should be frequently revised; the yearly expenditure provision or budget should be shared into functional areas and short periods; efficiency and effectiveness in public health expenditure usage should be measured; the management of the various health institutions should take part in overhead cost budget execution and be made answerable for its success or otherwise; and substantial adversarial variances between actual and standard performance should be quickly considered and eradicated.

Keywords: Control, Expenditure, Health, Institutions, Performance Provision, Real

1. Introduction
Public Health Institutions like other public sector organizations have goals and purposes for their existence and they make valuable aids to the public. The success of any business to a large extent depends on how it is effectively and efficiently managed. There is a growing need for restriction in public expenditure and this need has now become part of the economic conventional perception of the day. It is strong believe that efficacy in the public service should be augmented while government spending, taxation and borrowing are reduced. Proficient apportionment/structuring of resources in any economy is vital to optimal growth in that economy (Asuquo, 2011a; Asuquo, 2020) [9, 31]. The control of expenditure on health matters does not only stop at ensuring that expenditure on health matters is comparatively satisfactory and that expenditure toe the line with approved overhead cost provisions. These controls which are often referred as accounting standards/controls should be capable of measuring and reporting on performance based on the reporting practices. Where this is not done, objectives will not be achieved. Determining or assessing performance simply has to do with comparing intent with achievements or objectives with real performance. Evaluation of performance can result in a revision of predetermined or revision of budget, or modification in operation.

Regrettably almost all the public sector organizations in Nigeria do not have effective instrument of control for expenditure on health matters and overhead cost. More often than not, the expenditure on health matters cash released by the various State Governments to their Ministries and Parastatals do not conform to their approved overhead cost budgets. Once set, the budgets form the basis for control against which actual activities can be measured and maximization of basic objectives ascertained. This has to be fit into budgeting processes in order to enhance and maximize fundamental goals/objectives of the entity Worst still, the approved overhead cost budgets do not reflect the actual financial requirements of these Ministries and Parastatals for the accomplishment of their purposes. Where provisions are made for changing situations, the right cash requirements can be projected with fair accurateness. These can be done through regular revision of budgets when actual performance drifts from plans (Asuquo, 2013a; Asuquo, 2011b; Asuquo & Akpan, 2012; Uwah & Asuquo, 2016) [8, 23, 11, 32].

1.1 Statement of Problems

In spite of the existence of functional overhead cost budgets, regular expenditure on health matters cash and large vote book balances, public health institutions in Cross River State are still unable to settle most of their recurrent expenses and create social assets to help in the health service provision. These unpaid recurrent expenses are the large liabilities statistics revealed in these public health institutions' vote books and monthly revenue and expenditure returns are ineffective and inadequate. They are also unable to carry out their health service functions efficiently as fit in by heads of public health institutions' quarterly health reports. This has unpleasantly affected them because of lack of the following qualified nurses/midwives, community health extension workers, adequate clinical experiences, devoted health tutors and regular health conferences and retreats. Furthermore, past audit works on expenditure on health matters and overhead cost controls failed to verify whether or not the overhead costs budgets of Cross River State Public Health Institutions made provisions for situational factors, during their preparation and execution, hence the issue of lack of voluntary compliance and non-application of modern control tools such as information technology and forensic accounting technique alongside genuine management involvement in the execution of budget, management and control of public funds to achieve set goals (Asuquo, 2013b; Asuquo, 2012a; Asuquo, Dan & Effiong, 2020; Asuquo & Akpan, 2011; Asuquo, Akpan & Effiong, 2014) [15, 16, 12, 6, 7].

1.2 Objectives of the study

The specific objectives of the study are to determine whether expenditure on health matters the revised definite overhead cost incurred and health services (quantity and quality) are wholly exclusive and reasonable as compared to overhead cost provision (budget); to determine the connection between expenditure on health matters, the revised real overhead cost incurred, health services and overhead cost provision; and to relatively analyze the deviations of expenditure on health matters the revise actual overhead cost incurred and health services. To be able to achieve the objectives, the ensuing inquiries need to be responded to. Whether the expenditure on health matters, the revise actual overhead cost health services of Cross River State health institutions are completely, absolutely and realistically sufficient as matched to their overhead cost provision. Whether they forecast their cost overhead cost provision. What factors are responsible for the variances between the expenditure on health matters, the revised actual overhead costs, health services and overhead costs provision? The solution to the questions would be answered by testing the following hypotheses to see whether there is momentous association between financial services and their overhead cost provisions; substantial connection between health services delivered and their overhead cost provisions.

2. Outflows on health matters and overhead cost control in health institutions

Every organization tries to achieve its objectives at a smallest cost. This has led to the growth of cost accounting system which may include but not limited to; task based costing method, differential costing based on historical and current costs, which consequently determines the operating capacity of the entity. For decision to be effective, information which is designed for cost control must be sufficiently detailed, accurate and must be available. Unluckily the systems of accounting which is designed for the production of financial statements seldom satisfy these requirements, stewardship was the major aim of expressing and increasing the rules and regulations for recording financial transactions. Cost is absolutely meaningless if it is not compared with a predetermined reference point. Most organizations in recent years focused their efforts on internal achievement standards. Making the expenditure on health matters cash adequate to meet the financial obligations of public sector organizations operating under the expenditure on health matters system and at the same time not allowing actual overhead costs to exceed budgetary limits, is of utmost importance. Sufficiency of expenditure on health matters cash does not mean the existence of surplus cash as this can lead to idle expenditure on health matters cash (Uoayang, Asuquo & Akpan, 2020; Effiong, Udoayang & Asuquo, 2011; Akpan, 1979; Appleby, 1981) [13, 6, 2, 3].

Adequacy in this context is an optimal concept because it can only be meaningful expressed in relation to the level of activity. Problems will arise when expenditure on health matters is statutorily fixed while volume of services continues to vary. If expenditure on health matters increases as volume of services rises, inflation rate rises, price level fluctuations, good government economy/monetary policy to control inflation and vice versa, then less problems will be encountered. The most important factor affecting cost is the volume of activity. The cost of this volume of services can then be compared with the overhead cost provision or budget. Control is achieved by preparing budgets relating to the various activities of the budgets, and these provide a basis for comparison with actual performance. For many years now the State Government has statutorily not recognized the obligations in monetary of public sector organization as being part of their actual overhead costs. This is because what is usually regardless as actual overhead cost, is the cash which is paid for the goods and services procured. The obligations in monetary form incurred by these organizations are often excluded from the actual overhead cost can only be compared with the overhead cost provisions (Lucey, 1988, 1989, 1996a & b).

A realistic estimate of the actual overhead cost can only be made when the cash paid for goods and services are added to the cash due but not yet paid as this is what will actually

reflect the commitments of these organizations the reasonableness and wholeness of expenditure on health matters and overhead cost provisions depend to a large extent on sound budgetary control principles. If after comparison of intent with achievement, a favorable or unfavorable variance which is significant is noticed, it will be examined and the cause or causes of the variance will be investigated. By highlighting the difference, or variance between standards costs and actual costs, management is able to concentrate attention on those items where achievement deviates significantly from what was expected. If actual cost differs from standard, there can only be two reasons for this, either more or less input factors have been needed to achieve the given output and or higher or lower price has to be paid for them (Asuquo, Fadenipo, Ogbeche. & Ahonkhai, 2017; Asuquo, 2012b; Asuquo, 2012c; Asuquo & Effiong, 2010; Effiong, Udoayang & Asuquo, 2011).

The application for this reasoning requires that actual and standard cost should be expressed in terms of quantities and prices of input relative to output. The provision of practical pointers to the courses of off-standard performance is the sole aim of variance analysis. This analysis is carried out so that management can improve operations, increase efficiency, utilize resources more effectively and reduce costs in order to achieve the goal of producing real gross national goods and services. Ostentatious variance analysis which is not understood and not acted upon do not usually achieve the main objectives of control. Variance identified should therefore be capable of fulfilling the needs of organization. What really guides the calculation of a variance is its usefulness that is if it is useful to management, it should not be produced. In the case of public sector organizations, output will be units of real service rendered while input will be the money and material used in providing these services. Overhead cost budgets are only relevant to a definite period of time. An expenditure on health matters and overhead cost budgets should therefore, not be allowed to expire or become out of date. This is because; the rigidity of the budget of many public sector bodies can produce undesirable effects. When overhead cost ascertainment records are linked with overhead cost budget or provision, a measurement system can be developed which integrates planning and control (Asuquo, Tapang, Uwah, Dan & Uklala, 2020; Adams, 2000).

3. Methodology

The study adopted an export facto research design because the researcher had not direct control of the independent variables like expenditure on health matters the revised actual overhead cost, quantity of health services and quality of health training services. The population of the study was made up of public health institutions in Cross River State. All members of this population have the same accounting system and overhead cost structure (Asika, 2005).

3.1 Model specification

The Ordinary Least Square (OLS) analysis was used to estimate the determinants of overhead cost provision of public health institutions. The implicit form of the model is thus stated as:

$$Y_1 = f(x_1, x_2, x_3, x_4)$$

Where Y_1 = Overhead cost provision
x_1 = expenditure on health matters
x_2 = The revised actual overhead cost
x_3 = Quantity of health training services
x_4 = Quality of health training services.

Four functional forms were tried in order to select the lead equation for each location.
These are:

i. Linear - $Y_1 = b_o + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + e_1$

ii. Exponential - In $Y_1 = b_o + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + e_1$

iii. Semi logarithmic - $Y_1 = In\, b_o + b_1 In\, x_1 + b_2 In\, x_2 + b_3 In\, x_3 + b_4 In x_4 + e_1$

iv. Double logarithmic - $In\, Y_1 = In\, b_o + b_1\, In\, x_1 + b_2 In\, x_2 + b_3 In\, x_3 + b_4 In\, x_4 + e_1$

The criteria used in selecting the lead equation include the conformity of the signs of the regression coefficient with economic theory and the coefficient of multiple determinations (R^2) and the significance of the model through F-test and that of coefficient of the independent variable through the F-test.

3.2 Estimation and validation

To facilitate the testing of the hypotheses, 13 years secondary data were collected from all aforementioned study variables. These data came from the three senatorial districts public health institutions which constituted the population sample. The yearly revised actual overhead costs were arrived at by the addition of yearly cash payments to yearly liabilities. This approach was adopted to ensure that the correct valuation of the commitments of each of the sample members was made. This was also done to conform to the accounting definition of expenses as cash paid plus payable. In order to appropriately measure the performance of these public health institutions, health services were categorized into quantity of public health services rendered and quality of health services rendered (Asuquo & Udoayang, 2020). Furthermore, number of patients treated was used to quantify the health services while the number of patients qualified expressed as a percentage of number of patient treated was used to qualify the quality of health services. It was easy to establish the substantiation and consistency of the instruments used in collecting the research data. This is because the data came mostly from the secondary sources which also consistently produced the same set of numerical and non-numerical was used to verify the extent to which the data collected are related to the population sample, it was discovered that the expenditure on health matters, the revised actual overhead costs, quantity of health services, quality of health services and overhead cost provision data collected from al the sample

members were comprehensive and appropriate for testing the hypotheses formulated.

Table 1: Financial services and health services data from the population sample of Cross River State Health Institution for the past 13 years

Year	Y1	X1		X2	X3		X4
	1	2	3	4	5	6	7
	OHCP	EHM	LIA	RAOHC (2+3)	QTYHS	NOQFDS	QLTYHS (6as % of 5)
	N	N	N	N	N	N	N
CHC	'000,000	'000,000	'000,000	'000,000	'000,000	'000,000	'000,000
1	72,730	16,520	5,790	22,310	370	359	97
2	85,000	85,500	3,187	88,687	336	328	98
3	67,500	55,200	6,896	62,096	340	329	97
4	77,500	56,280	12,450	68,730	341	333	98
5	88,182	50,825	10,750	67,575	350	338	97
6	79,546	61,956	8,600	70,551	352	340	97
7	58,864	56,388	15,200	71,588	349	341	98
8	2,472,302	1,133,194	67,302	1,200496	720	707	98
9	4,174,179	1,699,787	56,230	1,756017	783	770	98
10	4,525,065	1,983,084	50,200	2,033284	1,200	1,186	99
11	5,875,450	2,266,385	43,980	2,310,365	1,135	1,115	98
12	4,234,614	2,469,686	75,560	2,545,246	1,345	1,330	99
13	3,197,342	2,634,686	65,900	2,700,586	1,348	1,338	99
GH							
1	59,465	19,300	11,230	30,530	15	13	87
2	35,803	25,200	15,870	41,040	18	16	89
3	467,388	26,195	13,246	39,441	20	16	80
4	68,180	26,443	12,980	39,423	29	25	86
5	58,472	26,567	7,453	34,020	26	24	92
6	60,566	26,629	10,975	37,604	31	29	94
7	82,140	26,690	20,500	47,190	33	28	85
8	236,080	95,853	27,680	123,533	41	39	95
9	278,080	130,434	8,675	139,109	45	42	93
10	399,080	147,725	14,860	162,585	43	39	91
11	320,080	165,015	43,200	208,215	48	46	96
12	161,640	174,613	54,370	228,983	51	48	94
13	399,787	183,269	23,560	206,829	53	49	92
MH/C							
1	31,249	21,970	12,970	34,030	33	29	88
2	32,415	21,438	9600	31,038	31	28	90
3	32,998	21,815	4,640	26,455	33	30	91
4	13,289	22,193	5,615	27,808	35	33	94
5	4,435	22,382	13,450	35,832	36	30	83
6	43,508	22,476	14,810	37,286	34	32	94
7	63,544	22,523	16,170	38,693	36	34	94
8	53,562	22,570	11,240	33,810	38	35	92
9	63,571	22,547	9,450	31,997	43	41	95
10	33,576	22,553	8,748	31,301	49	46	94
11	43,580	22,559	10,875	33,434	47	45	96
12	43,769	23,165	12,600	35,765	49	43	88
13	53,840	23,174	15,470	38,644	49	44	90

Sources: Public Health/Department of Budget and Planning, Calabar

KEY:

CHC = Community Health Centre
GH = General Hospital
MH/C = Maternity Home/Center
OHCP = Overhead Cost Provision
EHM = Expenditure on health matters
LIAB = Liabilities
RAOHC = Revised Actual Overhead Cost
QTYHS = Quantity of Health Services
NOQFDP = Number of Qualified Patients
QLTYHS = Quality of Health Services
PHIs = Public Health Institutions

The expenditure on health matters, overhead costs and health services data of the selected health institutions that constituted the population sample were collected from the sources already stated above and presented on table 1 for proper data analysis. The data were obtained from the office records of the above mentioned sources and they were all discrete in nature.

3.3 Data analysis

The public health services rendered by the institutions were classified into quantity of health public services rendered and quality of health service rendered. The number of patients treated each year in the public health institutions was used to measure the quantity of public health services rendered while the quality of health services rendered was measured by expressing the number of patients qualified as a percentage of the number treated. These volume indicators were found

to be most significant for the institutions' output measures since the objective of these institutions centered mostly on health service. To confirm the accounting definition of expense as cash paid plus cash payable, actual overhead cost incurred was defined and computed as the sum of expenditure on health matters and liabilities (please see table 1 above). This was done by the researcher in order to move away from the old convention of regarding actual expenditure on health matters cash expended as the actual overhead cost incurred.

In order to test the relationship between expenditure on health matters, the revised actual overhead cost, quantity of health training services, quality of health services and overhead cost setting up, the data collected for the study were scrutinized into four practical forms of the multiple linear regression viz. the linear, semi-logarithmic, double logarithmic and exponential forms. The researchers adopted this approach in order to select the lead equation for hypothesis 1 and 2 testing. The choice of the multiple linear regression analysis was informed by the fact that expenditure on health matters, the revised actual overhead cost, quantity of health services and quality of health services were to be used as determinants of the overhead cost provisions of these health training institutions. Secondly, setting each of the four independent variables against the dependent variable using student t-test would have been burdensome, laborious, time-consuming and confusing. The semi-logarithmic function was selected as the lead equation based on the criteria stated earlier. This is mathematically expressed as:

Note: *, ** denote significance of Coefficients at 1 and 5 per cent respectively while figures in parenthesis are standard errors. R = 0.88 and F = 62.95 see table 2 below.

These coefficients will however, be standardized to facilitate the comparison of the independent variables. Equation 1 which contained the unstandardized co-efficient obtain from regression semi-log coefficients (a) are now re-stated as:

Where e = Residual = 408919528988

In order to facilitate the testing of hypothesis which is to determine the significant differences between the independent variables and the dependent variable, the data collected from the field were analyzed by using ANOVA (Analysis of Variance). The choice of this technique of data analysis was made because the researchers wanted to compare the actual levels of these health institutions' financial and health services with the level of their overhead cost provisions to see whether there were significant differences between them. A Single Factor Analysis of Variance (ANOVA) was used to determine if there was any significant difference between expenditure on health matters, the revised actual overhead cost, quantity of health services, quality of health services and overhead cost provision in the health institutions.

The ANOVA technique was found to be the most appropriate statistical tool to test the effectiveness of the aforementioned predictors.

Table 2: The regression results of the financial and health training services of health institutions in Cross River State

Functional forms	IMP	RAOHC	QTYHS	QLTYHS	R^2	AR	F-Value
Linear	0.00670 (0.5260)	1.2340** (0.5070)	-1.303 (52.87)	-737.4 (1520.5)	0.99	0.99	8426.50*
Semi Log	-11878150** (564228.007)	1795473.8* (590981.61)	0.0000017** (82887.760)	-1404997 (1705177.60)	0.88	0.87	62.950
Double Log	1.2480* (0.3150)	-0.151 (0.330)	-0.100** (0.460)	-1.564 (0.953)	0.99	0.99	649.50
Exponential	-0.0000350* (0.00070)	0.0000360* (0.000)	0.00048 (0.001)	0.87	0.87	0.85	55.30

Source: Researchers' Analysis, 2022.

Table 3: The ANOVA results of the financial and health services of health institutions in Cross River State

Variables	F-cal	P-value	F-critical	Sig.
EHM	9.334615*	0.000542	3.259446	S
RAOHC	9.16395*	0.000607	3.259441	S
QTYHS	30.91331*	0.000000015	3.259446	S
QLTYHS	18.46703*	0.0000030	3.259446	S

Source: Researchers' Analysis using ANOVA, 2022

4. Discussion of Findings

The result of the Ordinary least square or multiple linear regression of the determinants of overhead cost provision are presented in Table 2 above. An R^2 (Coefficient of multiple determination) value of 0.88 connotes that 88 per cent of the variability in overhead cost provision of health institutions is accounted for by the researcher included in the model. In addition, the F-Value as 62.95 and it was significant at 1 per cent level using 4 and 34 degrees of freedom which means that the regression model is significant. The coefficient of multiple determination (R^2) measures the joint contributions of the independent variables which are coded as $x_1, x_2\ x_3\ and\ x_4$ or expenditure on health matters, RAOHC, QTYHS and QLTYHS respectively (see page 71). It follows therefore that $x_1, x_2\ x_3\ and\ x_4$ are jointly significant at the 1 per cent level since the model is significant. 88% of the explanation of y is provided by $x_1, x_2\ x_3\ and\ x_4$.

This joint explanation of 'y' the dependent variable or overhead cost provision is high. The significance of the model was tested and F-Value of 62.95 was obtained using 4 and 34 degrees of freedom for 1 per cent level of significance.

For easy comparison of the coefficient of independent variables in the model, the unstandardized coefficients in the previously stated Eq2, are now replaced with the standardized beta (B) coefficients as follows: equation 3 above shows that the standardized coefficients for expenditure on health matters (x_1) and quantity of health services (x_3) were -1.978 and 0.251 respectively and they were significant at 5 per cent level. Similarly, the standardized coefficient for the revised actual overhead cost (x_2) was 2.742 and it was significant at 1 per cent level while the standardized coefficient for the quality of health services (x_4) was -0.078 and it was not significant.

This relationship between financial services (EHM and RAOCH) and overhead cost provision in hypothesis 1 and the

relationship between health training services (QTYHS and QLTYHS) and overhead cost provision in hypothesis 2 were tested. A critical F-value of 3.83 was obtained using 4 and 34 degrees of freedom for 1 per cent level of significance and since the F-cal. value of 62.95 was greater than the F-critical of 3.83, the null hypotheses 1 and 2 were rejected. If follows therefore, that the joint contributions of the independent variables for the explanation of y the dependent variable were therefore, accepted, i.e. there is a significant. The values could not have arisen by chance. The alternate hypotheses 1 and 2 were therefore, accepted, implying that there is a substantial connection between the financial and health services provided by Cross River State health institutions and their overhead cost provisions.

The analysis of the study data further produced an equation for the model which shows the relative importance of each of the independent variables. This was stated as equation 3 and it was as follows: Iny = In1215771 – $1.9780x_1$ + $2.7420x_2$ + $0.2150x_3$ – 0.0780x. These b values or beta (B) coefficient are standardized i.e. the SPRC of all the independent variables now have a common nit of measure. The highest Standard Partial Regression Coefficient in the above equation is 2.7420 which mean that the revised actual overhead cost contributed most to the explanation of y the overhead cost provision. It means that given 1 standard deviation change in revised actual overhead cost (x_2), there will be 2.7420 standard deviation change in y the overhead cost provision. This was followed by quantity of health training services (x_3) with Standard Partial Regression Coefficient of 0.2510. quality of health training services (x_4) ranked the 3rd position with Standard Partial Regression Coefficient of -0.078 while expenditure on health matters (x_1) had the least contribution of an SPRC of -1.978 significance test for the standardized partial regression coefficients relating to the individual contributions of the independent variables revealed that the standardize coefficients of expenditure on health matters (x_1) and quantity of health training services (x_3) were significant at 5 level. Similarly, the Standard Partial Regression Coefficient of the revised actual overhead cost (x_2) was significant at 1 per cent level while the Standard Partial Regression Coefficient of quality of health training services (x_1) was not significant.

The standard partial regression coefficient of expenditure on health matters (x_1) = -1.978 which indicates an indirect relationship with overhead cost provision. It therefore, follows that overhead cost provision is not determined by expenditure on health matters. Since this relationship is indirect, or inverse, the expenditure on health matters is therefore, not necessarily, reasonably, exclusively and wholly adequate for its intended purpose. The research question relating to this aspect has therefore, been answered. The second research question as to whether a significant relationship between expenditure on health matters and overhead cost provision actually exists, or not has also been answered i.e. a significant inverse association exists as already revealed and stated. This is indicative of the gross neglect of expenditure on health matters consideration by government during overhead cost budget execution. Expenditure on health matters relationship with overhead cost provision is significant but, it is inverse because of government rigid expenditure on health matters control procedures. Furthermore, the rigidity of the government expenditure on health matters warrants issued to health training institutions has produced undesirable effects. This instrument restricts flexibility and act as strait-jacket on managerial action. These may also result in expenditure being incurred merely because it is included in the institutions' overhead cost budgets and covered by the expenditure on health matters cash released even though such expenditure is no longer required. Other activities which are often much more beneficial for the attainment of the objectives of these health institutions are ignored because of the absence of budgetary provisions. The expenditure on health matters control measures therefore, do not produce optimal level of expenditure on health matters and so over- expenditure on health matters and under- expenditure on health matters always result. Amounts approved as expenditure on health matters are oftentimes based on political considerations rather than on the service maximizing potentials of these health training institutions (Lucey, 1988, 1989, 1996a & b).

Government expenditure on health matters control measures also regarded only the total expenditure on health matters spent as the actual overhead cost incurred and so liabilities incurred by these schools were disregarded since these were in excess of the approved expenditure on health matters but, the liabilities were not in excess of the approved provisions or budgets. When it comes to expenditure on health matters management, government only emphasizes financial regularity. Provided accurate accounts are kept and expenditures are incurred according to approved estimates, efficiency and expenditure objectives are not to be given due concern. What government requires is that the vote for the year must be exhausted within the year i.e. the institutions must retire their expenditure on health matters at the end of the financial year.

Since the total expense from expenditure on health matters are traditionally equated to actual overhead cost, the relationship of the input (expenditure on health matters) to output (health services rendered) is not properly identified and as such, efficiency in the use of the input (expenditure on health matters) cannot be measured. Similarly, the relationship of output (health services rendered) to objectives is not clearly identified and as such, effectiveness in the use of the expenditure on health matters cannot be measured. Actual performances are not reviewed at regular intervals. Achievements are not set against the budgets. Previous studies pointed out that most public sector organizations relied on static budgets. They merely increase allocations when the vote is exhausted and vice versa. Justification of the activity on which the fund was expended is not required. The activity also is not usually examined and measured for proper assessment and review. Another weakness noticed by the researcher in the expenditure on health matters control measures was the invoices and receipts for services that were never carried out, were used by these health training institutions to hurriedly retire a greater proportion of their monthly expenditure on health matters which they frequently complain are grossly inadequate (Batty, 1975; Awoyemi, 1989; Johnson, 1985a & b, 1992, 1993).

This paper on retirement of expenditure on health matters is done according to a staff interviewed, to facilitate their qualification for the expenditure on health matters of subsequent months i.e. non-retirement of the expenditure on health matters of a particular month, will disqualify them from the receipt of subsequent month's expenditure on health matters. Expenditure on health matters are therefore, hurriedly exhausted so that next months could be collected since this is what is statutorily required under the partial self-

accounting system approved by the State Government. Oftentimes, timing and purposes of the expenditure are not justified. Expenditures are therefore, rushed towards the end of the year. Most times, the fear of being queried over excess expenditure makes the institutions to spend low leading to resources being unwisely managed and low morale of management staff. This strict control makes the institutions to maintain their previously levels of expenditures without paying attention to their growth potentials and other prevailing economic circumstances.

The actual overhead costs incurred by the health institutions depend solely on the amount of expenditure on health matters granted for that period. Actual overhead cost is therefore, tailored to suit the expenditure on health matters received. Expenditure on health matters approval procedures and decisions of government were not based on the overhead cost budget. The management of the various health institutions did not participate at the budget preparation and defense stages. This policy of not involving the health institutions' management in the expenditure on health matters approval processes discouraged motivation and commitment. This is a direct contradiction of budgetary control principles and f the fact that expenditure on health matters should at all times be necessarily, exclusively, reasonably and wholly adequate for its intended purpose. The objective of finding out whether expenditure on health matters is relatively adequate and related to overhead cost provision has therefore, been achieved.

Expenditure on health matters is therefore, not necessarily, reasonably and wholly adequate for its intended and it is indirectly and significantly related to overhead cost provision or budget, due to the factors enumerated above. The standard partial regression coefficient of quantity of health services and the revised actual overhead cost incurred had positive values of 0.2510 and 2.7420 respectively thus indicating direct relationships with overhead cost provision. The quantity of health services and the revised actual overhead cost were therefore, necessarily, exclusively, reasonably and wholly adequate for their intended purposes. What informed the direct association between the revised actual overhead cost and overhead cost and overhead cost provision is the fact that the revised actual overhead cost was defined and computed by the researchers as the inadequate expenditure on health matters cash plus liabilities.

The revised actual overhead cost is therefore, effective and it also contributed most to the determination of overhead cost provision. The research questions relating to the effectiveness and predictability of the revised actual overhead cost have again been answered. Revising the actual overhead cost supports the accounting definition of expenses as cash paid plus cash payable and it has also invalidated government definition and computation of expenses as being only the total payments made from the available expenditure on health matters cash. Similarly, the effectiveness of the quantity of health training services and its association with overhead cost provision, have been established from the research findings above. The research question relating to the effectiveness or otherwise of the quantity of health services has therefore, been answered and objectives 1 and 2 relating to quantity of health services, have also been achieved. It follows therefore, that overhead cost provision would increase significantly as quantity of health services increases and as the revised actual overhead costs of the various institutions increase.

These results also support performance related budget which is one of the conditions for the successful implementation of budgetary control. The quality of health services had standard partial regression coefficient of -0.078 which indicates an indirect relationship with overhead cost provision and this relationship is not significant. It therefore, follows that the individual contribution of quality of health training services to the explanation of the overhead cost provision is not significant but the joint contributions of the quality of health services and quantity of health training (hypothesis 2) were significant at 1 per cent level. The answers to the research questions relation to quality of health services are: quality of health services is not necessarily, exclusively, reasonably and wholly adequate and it is not significantly related to overhead cost provision.

In all, the null hypotheses 1 and 2 are invalidated by the significant relationship which jointly exists between expenditure on health matters, the revised actual overhead cost, quantity of health training services, quality of health training services and overhead cost provision. Finally, the significance test for Standard Partial Regression Coefficient of each of the independent variables revealed that only the revised actual overhead cost, quantity of health training services were ineffective in relation to overhead cost provision. The results of the ANOVA show that the differences between expenditure on health matters, the revised actual overhead cost, quantity of health training services, quality of health training services and overhead cost provision were significant at 1 per cent level and so the null hypothesis 3 was accordingly rejected while the alternate hypothesis 3 was accepted. The actual overhead costs are often times grossly at variance with the approved provisions or budgets. This is because the expenditure on health matters which detects what these institutions should actually spend is never granted according to the approved provision.

4.1 Findings

The major findings of the study are as follows

The association between expenditure on health matters and overhead cost provision was significant while that between quality of health services and overhead cost provision was not. However, expenditure on health matters and quality of health services had indirect connections with overhead cost provision and the contributed negligibly to the explanation of the overhead cost provision. These inverse association and trifling contributions rendered them effective. On the other hand, he revised real overhead cost and quantity of health services had direct significant interactions with overhead cost provision and they contributed more to the explanation of the overhead cost provision. These direct significant relationships and substantial contributions rendered them very effective. It follows therefore, that only the revised actual overhead cost and quantity of health services were necessary, exclusively, reasonably and wholly adequate in relation to overhead cost provision while expenditure on health matters and quality of health services were not. The overhead cost budgets and the expenditure on health matters warrants used in implementing the overhead cost provision were not flexible and as such the objectives of the various health institutions were not fully covered by the expenditure on health matters cash and overhead cost provision.

The relationship between expenditure on health matters and overhead cost provision was disregarded and consequently expenditure on health matters could not cover current liabilities. In computing actual overhead cost, government

deliberately excluded current obligations and expenditure on health matters was arbitrary fixed. Efficiency and effectiveness were disregarded. Over- expenditure on health matters and under- expenditure on health matters were noticed. Activities done with the expenditure on health matters were not justified. Expenditure on health matters that were never expended were retired using receipts and invoices. The managements of the various health institutions were not allowed to partake in the expenditure on health matters decision making and approval processes. This was seen by the researcher as a serious contradiction to the principles of sound budgetary control. When the actual overhead cost was revised to include current liabilities, its correlation with overhead cost provision was found to be direct and significant. Similarly, quantity of health services had a direct significant relationship with overhead cost provision. It follows therefore, that overhead cost provision would increase significantly as quantity of health services increases and as the revised actual overhead cost in the various health institutions increase. The study further revealed that overhead cost provision was not determined by the quality of health services since its relationship with overhead cost provision was indirect and was not significant. It follows therefore, that overhead cost provision will not increase significantly whether quality of health services improves or not. Quality of health services improve or not. Quality of health services was not measured and so was disregarded during overhead cost budget preparation and implementation.

The differences between expenditure on health matters, revised actual overhead cost, quantity of health services, quality of health services and overhead cost provision were significant at 15 and these differences were found to be caused by controllable and uncontrollable factor i.e. factors within and outside the control of managements of the various health institutions. These factors are the prevailing economic circumstances, leadership styles in the various health institutions, spending pattern of officers authorized to incur expenditure and the rigidity of government expenditure control measures. Leadership styles and expenditure patter were found to be controllable factors which the various institutions' managements were responsible for while rigidity of government control measures were factors caused by government which the various health institutions were not responsible for. However, prevailing economic circumstances were factors outside the control of both the government and health institution's managements. The budget surpluses noticed in the overhead cost budgets of the various health institutions, were caused by government rigid control measures which were glaringly outside the control of the health institutions. The ANOVA results supported the fact that the only significant variances should be investigated.

5. Conclusion

The non-consideration of determinants like expenditure on health matters and quality of health services was responsible for the ineffective execution of the overhead cost provisions of Cross River State health institutions. Other controllable and non-controllable factors which adversely affected the execution of overhead cost provisions in Cross River State health institutions were: non-inclusion of current liabilities in the computation of actual overhead cost, arbitrary fixing of expenditure on health matters, the non-flexible nature of government expenditure on health matters warrants, non-evaluation of the efficiency and effectiveness of expenditure on health matters usage, non-consideration of situational factors and not involving the managements of the various health institutions in the application of the overhead cost provisions especially in making decisions leading to the approval of expenditure on health matters.

These findings will no doubt encourage government and other stakeholders when taking decisions concerning these aspects of their responsibilities. Attempts will certainly be made to eliminate most or if not all of the problems highlighted above. Those interested in financing and managing the affairs of health institutions now have the knowledge that any useful changes made in actual overhead cost and quantity of health services will lead to the successful implementation of the overhead cost provisions of Cross River State health institutions. Finally, these useful changes and other determinants like expenditure on health matters and quality of health services will now be appropriately tailored to suit the overhead cost provisions of Cross River State health institutions.

5.1 Recommendations

Based on the findings of this study, the following recommendations are made: The actual overhead cost should be revised to include current liabilities while expenditure on health matters and quality of health services should be accurately evaluated and brought into agreement with overhead cost provisions which invariably reflect the objectives of the various health institutions, the yearly overhead cost provisions should be divided into functional areas and short periods preferable monthly or quarterly and revised regularly to reflect situational factors. The fixed expenditure on health matters warrant should be made flexible to reflect these situational factors, efficiency and effectiveness in the use of expenditure on health matters should be measured as this can lead to attainment of the objectives of these health training institutions. Managements of the various health institutions should be fully involved in the implementation of the overhead cost provisions and be solely responsible for the success or failure of their institutions. Nobody can be made responsible for something that he or she does not have knowledge about, and the cause of differences between expenditure on health matters, revised actual overhead cost, quantity of health services, quality of health services and overhead cost provision should be promptly investigated and eliminated.

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