African Journal of Applied Research
Vol. 4, No. 1 (2018), pp. 120-129
http://www.ajaronline.com
http://doi.org/10.26437/ajar.04.01.2018.11

IMPACT OF PUBLIC PRIVATE PARTNERSHIP ON FINANCIAL PERFORMANCE OF COUNCIL DESIGNATED HOSPITALS IN TANZANIA

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ABSTRACT

This study aims at assessing financial performance of Council Designated Hospitals (CDHs) before and after public private partnership in Tanzania. Using the stratified sampling techniques, we drew a sample of 17 CDHs from different districts/councils and examined the financial performance from 2003/4 to 2006/7 before PPP and from 20010/11 to 2013/14 after PPP. Data were extracted and summarized from respective annual financial reports over the sampled period. The study is significance since it tells the extent to which the PPP influence financial performance of CDHs. The study uses specific ratios to assess financial performance of hospitals before and after PPP. Findings revealed that, PPP has a small negative impact on operating margin and growth rate in equity. On the other hand PPP has positive and significant impact on liquidity of CDHs. specifically, liquidity performance indicates that there was a substantial growth in the hospitals liquidity position after PPP. This is marked by a significant rise in the current ratio and day's cash on hand of CDHs after PPP, this indicates significant increase in the ability to meet short terms financial obligations increased significantly. The result also revealed that PPP has no impact on the average age of CDHs' plant and equity financing. Conclusively, CDHs are manifesting features of not being able to remain in the business over a long period without government support. Therefore, the study suggests that management of hospitals should increase their control over the hospitals costs; so as to enhance ability to generate profit, Improvement in profitability will have positive impact over the increase in growth rate of equity and equity financing.

Keywords: *Public Private Partnership (PPP), Financial, Performance, Hospitals, Tanzania.*

INTRODUCTION

The increasing need of accessibility, efficiency and quality health services delivery in rural areas have led to the increasing use of private not for profit hospitals as council designated hospitals (CDHs) in Tanzania. Council Designated Hospitals (CDHs) are district referral hospitals owned by Private not for profit (PNFP) organizations but operating under the partnership arrangement between government and owner. Council Designated Hospitals (CDHs) mostly operate in districts/councils where the government has no publicly owned district referral hospitals. Moreover, there are also private not for profit (PNFP) hospitals which are owned Non-Government organizations (NGOs) which operate as Volunteering Agency Hospitals (VAHs).Unlike CDHs, VAHs have no contractual

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Vol. 4, No. 1 (2018), pp. 120-129
http://www.ajaronline.com
http://doi.org/10.26437/ajar.04.01.2018.11

partnership arrangement with government to operate as designated district referral hospitals though sometimes they receive (financial and non-financial) support from the government. Like in other developing countries, the population in Tanzania has been steadily growing and this sometimes does not match with growth in number of health facilities. According to NBS (2013), population in Tanzania increases by 2.7 percent per year; this does not match with increase in number of public health facilities in the country. Therefore one of the approaches that have been used by the government to solve the problem of public health facilities is to make use of existing private not for profit (PNFP) hospitals and designate them as district referral hospitals in areas where the government does not have adequate facilities. In assessing the impact of Public Private Partnerships (PPPs) on financial performance this study examined the financial performance of hospitals under the scrutiny before the partnership arrangements (2003/4-2006/7) and after the partnerships arrangements (2010/11-2013/14).

Public Private Partnership (PPP) in Health Care Delivery

Public Private Partnership (PPP) involves pooling of resources (such as financial, human, technical and information) from public and private sector in order to achieve commonly defined social goal, it involves the institutional arrangement that allows sharing of risks and resources in order to attain the common goal. Literatures contend that the collaboration between public and private sector for more efficient delivery of services traditionally offered by public sector is provided through Public Private Partnership (PPP) arrangement. Public Private Partnership (PPP) is a long term contract between private party and government or agency, for providing public services in which the private party bears significant risk and management responsibility. Health services delivery is one of the public services which can be provided under the PPP arrangement. According to MoHSW (2008) the governance system of implementing Public Private Partnership (PPP) in health services is expected to ensure the value for money, efficiency, effectiveness and transparency. Significance of this study premises on the fact that the study tries to shed light on the impact of public private partnership (PPP) on profitability, liquidity, assets management and capital structure of council designated hospitals (CDHs). Further, it is well known that hospitals consume larger part of healthcare budget and therefore this study is expected to relate the public private partnership (PPP) and improvement in the hospitals' financial performance indicators. Previous studies on hospitals and public private partnerships (PPPs) in Tanzania have dealt with assessment of the role of public private partnerships (PPPs) in healthcare delivery, and therefore none of them ever dealt with the assessment of the impact of public private partnership (PPP) on financial performance of council designated hospitals (CDHs). The study also adds to the existing body of knowledge of public private partnership (PPP) studies and its relevancy to the hospitals financial performance. The remaining part of this paper include section two which comprises techniques used in obtaining and analyzing the data, section three includes findings and discussions of results are presented and discussed in relation to findings in previous similar studies. Conclusion and recommendations are presented in section four.

RESEARCH METHODOLOGY

The study employs series of hospitals' financial ratios used in previous studies on hospitals' financial performance. For example, Zellers et al., (1996) examined 28 hospitals using hospitals' financial ratios, the same ratios were adopted from the study by Cleverly (1993). Zellers et al. (1996)

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http://doi.org/10.26437/ajar.04.01.2018.11

further categorized the ratios into seven group or dimensions, namely: *profitability, fixed assets efficiency, capital structure, age of plants, working capital efficiency, liquidity, and debt coverage*. However, due to the limitation of data, this study employs six critical financial ratios that have widely been used in different hospitals financial studies, the six financial ratios are further classified into major four groups (dimensions) namely *liquidity, profitability, leverage and fixed assets efficiency.* Financial ratios employed in this study were also used in the study by Pink et al., (2007). Moreover, the same ratios also appeared in the study conducted by Watkins (2000). Literature records that the use of financial ratios in examining hospital's financial viability is increasing its frequency. The details for operating margin, growth rate in equity, current ratio, day's cash on hand, average age of plant ratios and equity finance are provided in *appendix 1.Table 1 and Table 2* indicate the median of the financial ratios (indicators) of CDHs before and after public private partnership (PPP) respectively. According to MoHSW (2011), vast majority of hospitals activities approximately 80 % take place under not for profit (NFP), this study deals with financial performance of not for profit private hospitals which have partnerships arrangement with government.

Data and Data Sources

The study employed data set extracted from audited financial report of the respective CDH, with the support of excel computer program, *liquidity* (current ratio and Days cash on hand), *efficiency, profitability, equity financing and growth rate on equity* were summarized and analyzed, the sampled period covers 2003/4 – 2006/7(before public private partnership) and 2010/11-2013/14(after public private partnership).According to Christian Social Services Commission (CSSC) records there are 32 faith based hospitals operating as designated district referral (or council designated hospitals) hospitals in Tanzania. This study employed a total of 17 council designated hospitals (CDHs), and the hospitals include, Biharamulo, Bunda,Huruma, Kilema, Rubya, Sengerema, Sikonge, Sumve and Muheza hospital. Others are Ilula, Makiungu, Mbalizi Evangelism, Peramio hospitals, Tosamaganga, Turiani, Mvumi, and ST. Gema hospitals.

Financial Performance and Model Selection

Analysis of CDHs' financial health have been built on the previous hospitals studies such as Zeller et al.(1996); Watkins (2000); Pink et al.(2007). Therefore, this study follows previous hospitals studies in which a set of hospitals' financial ratios examining *liquidity, profitability, efficiency and capitals structures* were computed in order to analyze the financial health. One of the advantages of using ratio analysis is that it can also be used for comparison of the performance of two groups of hospitals or comparison of the performance on organization in different two periods; we therefore, compare the financial performance before and after public private partnership (PPP).This study decomposed the analysis into six financial ratios which measure hospitals' financial viability. Specifically, the study used specific hospitals financial ratios to examine CDHs financial viability in terms *Operating Margin, Growth Rate in Equity, Current Ratios, Days Cash on Hand, Equity Financing and Average Age of Plant*, the study's focus being to establish if there was changes in financial viability (in terms of *liquidity, profitability, capital structure and assets management or efficiency*) before public private partnership(2003/4-2006/7) and public private partnership(20010/11 – 2013/14).

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Operating margin measure the hospitals ability of the hospitals to generate profit, it is applied as the measure of the control of expense relative to revenue. Chu et al.,(1991) and Kane Consulting Group (2008)proposed the profitability as the characteristics of hospitals financial performance. *Current ratio* and *days' cash on hand* measure *liquidity,* liquidity ratios measure the ability of the hospitals to settle short term financial obligations. Current ratio is obtained by dividing the current assets over current liability. During the process of hospitals operation, hospitals have many short term obligations to pay to its suppliers and settlement of the obligations which become due. Therefore ability of CDHs hospitals to meet short term obligations (in this study) was measured by current ratio and day's cash on hand. *Equity finance* - This ratio gauges the ability of the hospitals to finance its assets using the equity financing (internal sources of financing). As the percent of equity financing become less it reflects the extent to which the hospital depends on the external source of financing (debt financing). It is appropriate indicator of the level of leverage used by hospitals (Kane Consulting Group, 2008). Generally, higher equity financing is healthier, although most financially healthy hospitals should have some debt for working capital as the way to minimize overall cost of capital (Pink et al., 2006). *Growth in equity,* this measure an increase in the value of equity after the end of each financial year, the hospital will experience increase or growth in equity if it generates the surplus, obviously if the hospitals experienced negative or very insignificant operating margin it means there is (nothing or) insignificant amount to be added back to allow growth in equity. *Average age of plant* is the financial measurement indicating how old hospital fixed assets are. It premises on the assumption that hospitals use the straight line depreciation methodology. The median value for the average age of plant provides indications on the replacement cost required for the assets in the near future, It also signify the hospital's ability to generate revenue (it is obtained through examining the accumulated depreciation and gross fixed assets to net fixed assets).

FINDINGS AND DISCUSSION

Table 1 shows the median-financial performance indicators of council designated hospitals (CDHs) in terms of *operating margin, growth rate in equity, current ratio, days' cash on hand, equity finance and average age of plant* before public private partnership (PPP)while Table 2 depicts result for CDHs' median-financial performance indicators of the same after public private partnership (PPP).

Table 1: Median–Financial Ratios of CDHs before PPP 2003/4 – 2006/7

Financial Performance (indicators)	**2003/2004**	**2004/2005**	**2005/2006**	**2006/2007**
Operating margin (%)	-7.024256	0.743754	-2.970115	-0.534499
Growth rate in equity (%)	-0.435124	0.715433	-0.064381	0.706467
Current ratios	6.052945	0.855739	0.781761	4.073811
Days cash on hand	11.58907	19.85876	18.65314	59.01284
Equity financing (%)	-2.28443	-1.19248	-1.5088	-8.971387
Average age of plant(years)	2.596999	5.764345	4.971124	7.87284

Source: Research Findings, 2016

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Result summarized in Table1 indicates that before public private partnership (PPP) ***operating margin*** of hospitals under the study was not healthy. Hospitals experienced negative or zero ability to generate profit since the median for the operating margin was ranging between -7.02% in 2003/4 and -0.53% in 2006/7*(Ref Fig 1)*. After public private partnership (PPP) result in Table 2 revealed that there was slight improvement in hospitals ability to generate profits, though the performance was still ranging between zero and negative percent. In the year 2010/11 operating margin was -0.11% while in 2013/14 it was -0.46%.In this study operating margin was employed to measure hospitals' profitability. In the study conducted by Pink et al, (2007) on hospitals financial performance in Ontario, it was proposed that a hospital should be considered to have good financial performance if it has the operating margin ranging between *0% and 5%*, therefore in the case of council designated hospitals (CDHs) in Tanzania, all hospitals under the study are considered to have been performing poorly in terms operating margin before and after public private partnership (PPP). When compared to previous study by Watkins (2000) conducted on financial health of Canadian community, small and teaching hospitals, it was found that community hospitals were experiencing negative total margin while teaching hospitals and small hospitals manifested small positive margin (operating margin). Therefore during the period under the study the performance of council designated hospitals (CDHs) in Tanzania was similarly the same as the community hospitals (with negative operating margin) in Ontario. Further, it can also be argued that during the period under the study CDHs in Tanzania relatively poor compared to small and teaching hospitals in Ontario in terms of operating margin.

The study revealed there was almost a very small improvement in ***Growth in equity*** of CDHs after public private partnership (PPP).Before PPP growth in equity was -0.43percent in 2003/4 while in the year 2006/7 it was 0.71 percent an improvement of 1.14 percent. After PPP findings reveled that CDHs experienced a slight decline in the growth in equity from 0.026 percent in 2010/11 to 0 percent in 2013/14.Therefore, improvement in the equity growth before and after public private partnership (PPP) was very insignificant *(Ref.Fig.1).*

Table 2: Median–Financial Ratio for CDHs after PPP (2010/11 – 2013/14)

Financial Performance(indicators)	**2010/2011**	**2011/2012**	**2012/2013**	**2013/2014**
Operating margin (%)	-0.109082	-0.050969	-0.001785	-0.468977
Growth rate in equity (%)	0.026615.	-0.327327	1.154752	0
Current ratios	1.852557	0.472149	3.423267	5.353724
Days cash on hand	110.021789	117.999899	120.665655	123.059452
Equity financing (%)	-4.384568	-14.717859	-4.119960	-4.936417
Average age of plant	8.633151	12.7611203	8.713363	11.827273

Source: Research Findings, 2016

As far as liquidity is concern, the result revealed that before public private partnership (PPP) *current*

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ratio of CDHs hospitals declined from 6.05 in the year 2003/4 to 4.07 in 2006/7.While *Days Cash on Hands* increased from 11.5 days in 2003/4 to 59days in 2006/7, in this study liquidity is measured using both current ratio and Days Cash on Hand (DCH). On the other hand after public private partnership (PPP) current ratio of CDHs increased from 1.85 in 2010/11 to 5.35 in 2013/14. It was also observed that Days cash on hand increased from 110.02 days in 2010/11 to 123.06 days in 2013/14*(Ref Table 2)*, implying relative substantial improvement in liquidity position of hospitals after public private partnership (PPP). From the survey conducted in Ontario in 2005 it was established that the hospital is considered to have a good liquidity position if it has the current ration of at least 2.0 (Pink et al., 2006). When compared to previous studies, community and teaching hospitals manifested the current ratios of less than 1.0 while the small hospitals had current ratio of 2.0 in Ontario (Watkins, 2000), this implies that after PPP the current ratio of CDHs in Tanzania was relatively better compared to that of community and teaching hospitals in Ontario. In a study by Pink et al., (2009) on Critical Access Hospitals in USA, it was established that Days cash on hand of 60 days should be used as the appropriate benchmark. This means that after public private partnership (PPP) CDHs manifested day's cash on hand which was above the benchmark, implying improvement in ability of the hospitals to meet requirements of lenders and other financial obligations. Table 1 and Table 2 also present result of the *equity finance* before and after public private partnership (PPP). Generally, *equity financing* was poor before and after public private partnership (PPP), it largely involves negative percentage in both cases. In the study conducted by Pink et al., (2006) on the US Acute non-profit hospitals, it was pointed that the appropriate range is between 40% and 70% equity financing. CDHs hospitals in Tanzania have equity financing which is far below the proposed benchmark; this implies the ability of these hospitals to finance their assets from internal sources is obviously questionable over the sampled period. Compared to previous similar studies, in the study by Pink et al.,(2006) all Critical Access Hospital (CAH) of New Hampshire Hospitals falls within the benchmark of inter-quartile range of equity financing, and hospitals increased their proportion of equity financing, this is contrary to the findings in this study, where equity financing ratios (range below the proposed benchmark). Therefore ability of the Critical Access Hospitals (CAHs) in New Hampshire to finance their assets using internal sources was relatively better than that of the council designated hospitals (CDHs) in Tanzania. In study by Pink et al., (2009) on financial performance of US Critical Access Hospitals (CAHs), it was found that on average 40% of hospitals under the study (421 hospitals) meet the benchmark of equity financing. Therefore, compared to the above mentioned previous studies, it implies that CDHs in Tanzania are less capable of financing their assets using equity compared to non-profit acute care hospitals and critical access hospitals in US. The main reason is that CDHs in Tanzania are less capable of generating/increasing profit hence less growth in equity.

Result also revealed that *Average Age of Plant* was ranging between 2.5years in 2003/4 and 7.8years in 2006/7 signifying an increase of 212 percent before public private partnership (PPP). On the other hand, result in *Table 2* shows average age of plant continued to increase even after public private partnership (PPP), where in 2010/11it was 8.6 years while in 2013/14 it was 11.8 years, signifying an increase of 37.2 percent after public private partnership (PPP), this implies that CDHs had been using assets and technology which was too old, this implies low ability to generate revenue and profit as it was observed in operating margin. Compared to previous studies we noted that, in the study conducted in India by Bhat and Jain (2006), it was found that average age of plant or fixed

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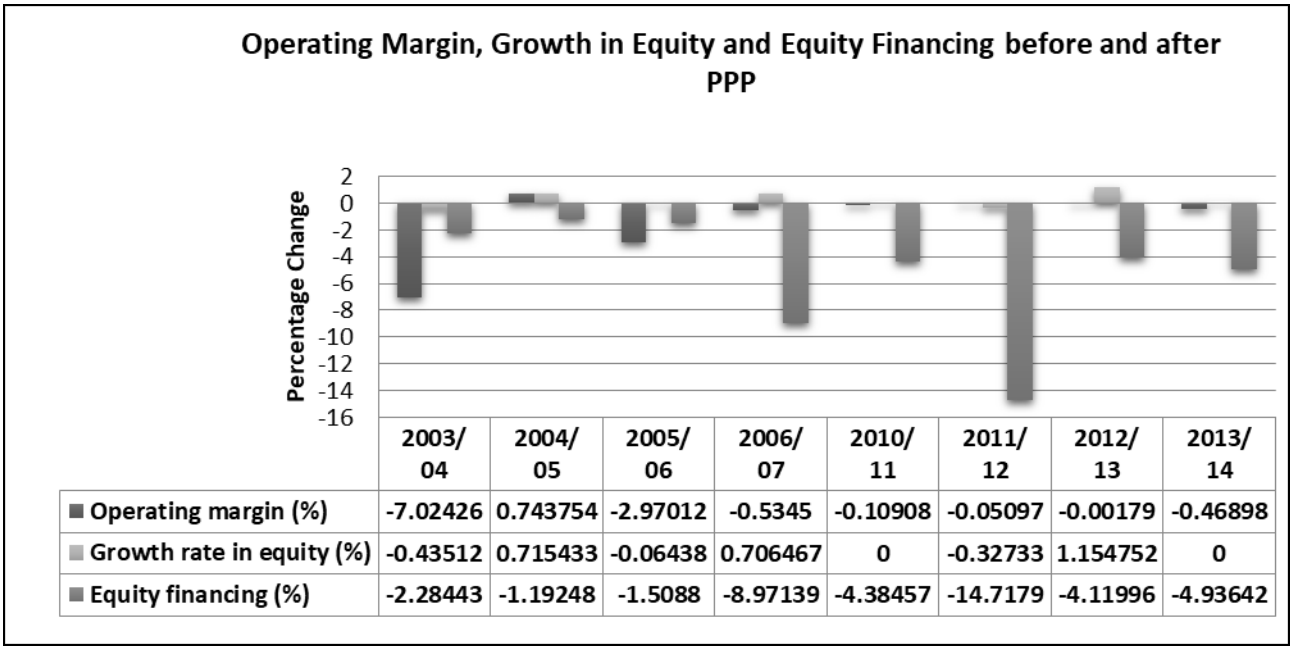
African Journal of Applied Research
Vol. 4, No. 1 (2018), pp. 120-129
http://www.ajaronline.com
http://doi.org/10.26437/ajar.04.01.2018.11

assets increased from 2.2 years in 1999 to 3.0 years in 2004. It was argued that assets structure of hospitals in India was not old. Implying that hospitals in India had the capacity to generate revenue given the assets structure and their ages and they have relatively recent technologies. Comparatively, average age of plant of CDHs in Tanzania seems to be relatively older than that of the hospitals in India. In a study by *McCue and Nayar (2009)* conducted in USA, it was found that non-profit hospitals possessed old plants and equipment which in future may affect their ability to operate and generate enough revenue. Findings in this study regarding average age of plants conform to findings by McCue and Nayar, since CDHs in Tanzania maintain old plants and equipment, and they are incapable of controlling their cost (cost control) and generate enough revenue. Furthermore, CDHs under the scrutiny have less capability of equity financing and they maintain (possess) very old assets or plants they subject themselves into financial hardship during the replacement of plant or assets, which may lead to further usage of very old plant or assets and affect their ability to generate revenue (profit) as well as affect equity financing capability.



	2003/04	2004/05	2005/06	2006/07	2010/11	2011/12	2012/13	2013/14
Operating margin (%)	-7.02426	0.743754	-2.97012	-0.5345	-0.10908	-0.05097	-0.00179	-0.46898
Growth rate in equity (%)	-0.43512	0.715433	-0.06438	0.706467	0	-0.32733	1.154752	0
Equity financing (%)	-2.28443	-1.19248	-1.5088	-8.97139	-4.38457	-14.7179	-4.11996	-4.93642

Fig1: Equity Financing, Profitability and Equity Growth before (2003/4-2006/7) and After Partnership (2010/11-2013/14)
Source: Research Findings 2016

Impact of Public Private Partnership (PPP) on Financial Performance Result

Generally, council designated hospitals (CDHs) in Tanzania manifested zero or negative ability to generate profit over the sampled study period both before PPP (2003/4-2006/7) and after PPP (2010/11-2013/14). Operating margin is normally used as the measure of ability to generate profit as well as control expenses relative to revenue. This implies that PPP has no impact on ability to generate profit as well as control of hospitals' expenses relative to revenue. The meaning derived from this finding implies that council designated hospitals (CDHs)in Tanzania are not careful in cost

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African Journal of Applied Research
Vol. 4, No. 1 (2018), pp. 120-129
http://www.ajaronline.com
http://doi.org/10.26437/ajar.04.01.2018.11

control management (expenses control over revenue). Generally, surplus generation is very important to ensure that the hospital remains financially sustainable in the long run, and also attract new resources as the means of performance evaluation.

As an attempt to measure the impact of public private partnership (PPP) on the *liquidity* position of the CDHs, we examined the current ratio and day's cash on hand before and after public private partnership (PPP). Result revealed that before public private partnership (PPP) current ratio was decreasing while after PPP the current ratio started to increase, on the other hand days cash on hand (DCH) was increasing before PPP and continued to increase after PPP. However, in the first two years after public private partnership (2010/11 & 2011/12) CDHs experienced current ratio below the proposed bench mark 2, followed by above bench mark in the subsequent years. Therefore it can be suggested that PPP has significant positive impact on the (liquidity position or) ability of CDHs to respond to the lenders requirements as well other short term financial obligations. As far as *growth rate in equity* is concerned, assessment of the impact of public private partnership (PPP) on the growth rate in equity of the CDHs shows that PPP has a small negative impact on the growth rate in equity, in line with finding, it can therefore be argued that public private partnership (PPP) has a very small negative impact on the increase in the value of equity at the end of each year. Literatures contend that hospital experiences growth in equity if it generates surplus, this contention is supported by the finding in this study where by CDHs hospitals were experiencing *low operating margin* before and after public private partnership (PPP) which lead to the zero or negative growth rate in equity (Table 1&2). As far as equity *finance* is concerned, the result revealed that equity financing was negative before and after public private partnership (PPP), however after the partnership CDHs increasingly manifested higher negative equity financing compared to before the partnership. Therefore, it can be argued that PPP has negative impact on the ability of the CDHs to finance their assets using the internal sources of financing. As the attempt to measure the impact of PPPs on average age of CDH's plant, result revealed that before partnership there was an increase in the *average age of plant* by 212% while after public private partnership (PPP) average age of CDHs' plant continued to increase by 37.2%. This implies that PPPs were having small positive impact on the average age of CDHs plants. It is obvious that plants utilization rate of CDHs was higher before and after the partnership, which implies that CDHs in Tanzania are using old assets as well as technology and they are likely to face the assets replacements (or incur capital expenditures in the near futures) cost as they are maintaining relatively old assets compared to private not for profit hospitals in other developing countries.

CONCLUSION AND RECOMMENDATIONS

The study examined the impact of public private partnership (PPP) on financial performance of CDHs in Tanzania using specific hospitals financial ratios. Conclusively, result of the analysis revealed that, public private partnership (PPP) has a very small negative impact on the CDHs' ability to generate profit as well as control cost over the revenue. The partnership also hampered the improvement in annuals' growth in CDH's ability to finance assets using internal sources of financing. On the other hand public private partnership (PPP) has positive significant impact on CDHs' ability to meet short term financial obligations as well as lenders' requirements, steady and significant increase in the current ratio as well as day's cash on hand after the partnership between the government and hospitals owners evident the case. The result also revealed that PPP has a very

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African Journal of Applied Research
Vol. 4, No. 1 (2018), pp. 120-129
http://www.ajaronline.com
http://doi.org/10.26437/ajar.04.01.2018.11

small positive impact on the average age of CDHs' plant, however the observed improvement in the age of plant after public private partnership (PPP) was almost insignificant. As far as CDHs' ability to finance their assets using internal sources is concerned CDHs experienced deterioration in both before and after public private partnership (PPP), therefore there is no any relationship between the partnership and ability to finance using internal sources. Lesson drawn from the findings of this study is that CDHs in Tanzania are characterized by high liquidity but no growth in profitability, no growth rate of equity, no or sometimes negative equity financing and very old assets or outdated technology maintained. In totality of the findings, this study concludes that CDHs are manifesting features of not being able to remain in the business over a long period without government support. Therefore, the study suggests that management of hospitals should increase their control over the hospitals costs, so as to enhance ability to generate profit. Improvement in profitability will have impact over the increase in growth rate of equity. CDHs should also increase their cash flow so as to access tax exempt debt market that can be used to finance future capital expenditure and replace existing old assets which affect ability of hospitals to generate revenue as well as profit. This study suggests that futures similar studies should assess the impact of public private partnership (PPP) on financial performance of CDHs using different techniques other than financial ratio analysis.

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ISSN: 2408-7920
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African Journal of Applied Research
Vol. 4, No. 1 (2018), pp. 120-129
http://www.ajaronline.com
http://doi.org/10.26437/ajar.04.01.2018.11

Appendix 1: Hospitals Financial Ratios Used in this Study and Their Meaning

S/N	Ratio	Formula	Meaning and implications
1	Operating margin =	$\frac{Total \cdot revenue - (operating \cdot \exp + taxpaid)}{tota \cdot revemue}$	Measure whether the particular hospital is profitable or not, it also implies the hospitals' ability to cover the operating expenses with operating revenues.
2	Growth in equity=	$\frac{Change \cdot in \cdot fund \cdot balance}{fund \cdot balance}$	The Equity Growth Rate in equity measures the amount of additional equity added to the stockholders equity.
3	Current ratios =	$\frac{current \cdot assets}{current \cdot liabilitie\, s}$	Measure the hospitals liquidity position. Implies access to the unrestricted cash which is used or employed in the financing of the short-term needs. Ability to meet short term lender requirements.
4	Days cash on hand (DCH)=	$\frac{cash + marketable.\sec urities}{operating.\exp enses - depreciation * 1/365}$	Measure how many days the hospitals could continue to operate if no additional cash were collected from clients (in this case patients).
5	Equity financing ratios(EP)=	$\frac{Fund \cdot balance}{total \cdot assets}$	Shows inclusion of equity in the capital structure of hospitals (the part of capital structure that is equity).measure the ability of the hospitals to finance its assets using internal sources of financing.
6	Average age of plant (AAP)=	$\frac{Accumulated \cdot depreciation}{depreciation \cdot \exp enses}$	Measure the relative age of fixed assets and technology used in provision of hospitals service

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