An Exploratory Study of the Impact of Valuation Methods on Effectiveness of Privatization of Hospitals through Mergers and Acquisitions in Kenya

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Abstract:
This paper examines the privatization of hospitals through M&A using Kenya as a country of focus. It shows that M&A activities are increasing in Africa and there is a history of privatization of state-owned enterprises (SOEs) / parastatals in Africa and Kenya in particular, which started in the 1990s.

Privatization of hospitals has been popular in North America (U.S., Canada) and Europe (Germany, England) which have included public and not-for-profit (NFP) hospitals. Privatization and M&A activities of hospitals in other countries such as India, China, Saudi Arabia, Africa and Kenya have also increased. The reasons for these trends are industrialization of developing countries, changing lifestyles, aging populations, longer life expectancy, technological advancement, development of new drugs, growth of the middle class, increase of non-communicable diseases (NCDs) and inefficiency of public health systems. With the changing dynamics, it would appear like there is a need for African countries to expand their private sectors, and privatization of healthcare is an attractive area for private equity firms and private hospital chains. Due to growth of the economy and the middle class, higher demand for healthcare services and particularly expansion of NHIF (National Hospital Insurance Fund) coverage in Kenya, privatization of hospitals makes economic sense.

An important aspect of privatization of public or not-for-profit hospitals is determination of fair market value. Therefore, literature concerning theory of valuation, cash flow, agency cost, assumption of discounted cash flow and indirect / direct valuation and cross boarder valuation were investigated.

The research philosophy, methodology and design of this study was based on exploratory, post positivism, deduction and utilization of mixed method (qualitative and quantitative) with focus on verifying the hypothesis. The population of this research included Level 4, 5 and 6 hospitals in Kenya, consisting of 268 hospitals with equal to or more than 50 bed, and sample size of 158 hospitals. Proportionate stratified random sampling methodology was used to determine sample size of each hospital level (Level 4, 137 hospitals, Level 5, 14 hospitals, and Level 6, 7 hospitals).

The hypothesis that there is a negative relationship between valuation methods (X) and the effectiveness of privatization of hospitals (Y) through M&A was tested, there was moderate and positive relationship between the dependent and independent variables and regression model was found to be reliable. The null hypothesis was rejected because of the result of the T-test.

It is recommended that similar studies be conducted in East and South Africa to explore and enable researchers to perform comparative analysis in order to improve the body of knowledge in this area.

Keywords: Valuation methods, effectiveness, privatization, merger and acquisition

1 Introduction

Merger and acquisition (M&A) has been a subject of interest over the past 30 years; it is a multidisciplinary, popular form of corporate growth, it encompasses strategic, financial, operational, behavioural, cross-cultural management challenges, and is used as a response to changing economic conditions and as competitive strategy. If ignored, it might have negative consequences for companies since M&A activities have a clustering pattern that is characterized as waves (Sudarsanam 2003, 2005; Bruner, 2004; Cartwright & Schoenberg, 2006).

The first wave of M&A was from 1897 to 1904 and it was a horizontal consolidation; the second wave started in 1916, it was both horizontal and vertical consolidation, ended in 1929 and resulted in the passing of Clayton Antitrust Act in the U.S. The third wave which was from 1965 to 1969 is described as conglomeration; the fourth wave started in 1981 and is identified as the retrenchment era and marked by rise of hostile takeover and ended in 1990. The fifth wave from 1992 to 1999 is described as the strategic management era and there was a record number of transactions because of globalization; it ended in 2002. The sixth wave from 2003 to 2008 was considered as the rebirth of leveraged buyout due to low interest rates, globalization, high commodity prices and ended during 2008 stock market crash. The year 2011 was the beginning of the seventh wave of M&A and the rise of transactions in Brazil, Russia, India and China (BRIC) and more recently, South Africa (DePamphilis, 2015; Camaya Partners, 2014).

The number of transactions in Africa grew from 3 in 1996 to 29 in 2010, the total number of transactions in Africa was 1% of the global transactions; in 1996 with a value of US$2 billion and grew immensely from 2003 to 2007 and declined thereafter possibly due to the financial crisis of 2008. South Africa was number one and Kenya ranked number eight in deal making among top ten target African countries which included Egypt, Nigeria, Morocco, Mauritius, Zimbabwe, Namibia, Tunisia and Mozambique (Holthausen & Zmijewski, 2014; Ellis et al., 2015).

It has been argued that there is a need for sub-Saharan African countries to expand their private sectors and create more dynamic economies. State owned enterprises (SOEs) in African countries provide poor services and lose money hence the intervention by the International Monetary Fund (IMF) in the early 1990s that brought about Structural Adjustment Programs to advocate for financial discipline and market-oriented reforms. The number of privatization transactions in Africa were 2,270 in the 1990s; Mozambique, Zambia and Tanzania led the pack with Kenya following in the fourth position and the major privatization activities were in Manufacturing and Industry, Agriculture, Service and Real Estate sector. Governments retained 46% of energy and 42% of telecoms shares after privatization and average share of equity of government was 10% after privatization (Nellis, 2005). Governments retained shares in divested privatized companies under the pretense of protecting public interest with the intention to sell the retained shares at a higher price at a later date when the value had increased. Privatization of hospitals was a minimal affair and was achieved in Kenya through opening up private wings in major government hospitals.

Muindi (1992) states that the Kenyan government directly participated in production and trade after independence in 1963. In 1970s, the government realized that its involvement had grown beyond the original intent, therefore, in 1979 it formed the Parastatal Advisory Committee. In 1982, the Working Committee on Public Expenditure released a report which identified deficiencies in financial and economic performance of Public Enterprises (PEs) and this report set the stage for change.

Privatization involves divestiture, transfer of a function, activity and assets from the public sector to the private sector (Klos, 2000). There are about 240 Kenyan PEs with government ownership, 33 of them have been classified as strategic institutions since they provide essential services such as healthcare, environmental protection or are vital for national security. The remaining 207 PEs were classified as non-strategic companies and were included in the Kenyan government privatization program. According to Privatization Commission of Kenya website (2016) most of the non-strategic assets had been either fully or partially privatized by 2002.

Kenyan government privatized a number of key enterprises under the Economic Recovery Strategy for Wealth and Employment Creation (2003-2007) which included the following companies: Kenya Electricity Generating Company (KENGEN), Concession of Kenya Railway Operations, Mumias Sugar Company, Kenya Reinsurance Corporation, and sale of 51% of Telecom Kenya. These transactions generated Ksh.80 billion for the government. The following firms are currently seeking privatization in Kenya: Agrochemical and Food Company Limited, Kenya Meat Commission, New Kenya Cooperative Creameries Ltd, Kenya Wine Agencies, Development Bank of Kenya, National Bank of Kenya Ltd, Tourism Finance Corporation, Kenya Ports Authority, Consolidated Bank of Kenya Ltd, Kenya Pipeline Company Ltd, East African Portland Cement Company, and five sugar companies (Privatization Commission of Kenya, 2016 and Reuters, 2015).In Africa, the challenge is how to privatize SOEs in a transparent and corruption-free manner. Although all the methods are prone to manipulation, Nellis (2005) argues that the sale of shares through a public offering is more transparent.

1.1. Healthcare Financing

The population of Africa is expected to grow to 2 billion by 2050 necessitating the need for greater heath care and other social expenditure and this shift will increase demand for healthcare. Kenya experienced an 18.56% population growth from 2008 to 2015 and spent less than 5% of its GDP on health care (KPMG, 2011; Canning, Raja & Yazbeck, 2015).

Healthcare financing is raising or collecting funds to pay for operations of a healthcare system and the intent is to collect revenue from a variety of sources, such as public or private, pool funds and spread risks across larger population groups (World Health Organization, 2000; Mills and Ranson, 2001; Carrin and James, 2005). Pooled healthcare financing arrangements reduce risk and are accomplished by being an insurance enrollee or a citizen eligible to receive publicly provided healthcare care. Risk pooling has two redistributive impacts: cross subsidy from the healthy to the sick, and differential contribution transfer from the rich to the poor (WHO, 2000; Fan & Savedoff, 2014). Approaches to risk pooling are: no risk pooling, fragmented risk pools, integrated risk pool and unitary risk pool. Progressive integration of risk pooling reduces the risk and minimizes it under a unitary risk pool (Smith & Witter, 2004).

Social health insurance (SHI) was introduced in Kenya in 1960, Namibia in 1980 and Burundi in 1984 (Witter *et al.*, 2000). Chuma and Okungu (2011) argue that Kenya has not had a consistent health policy for its population. Table 1 summarizes healthcare financing in Kenya since independence.

Years	Policy	Equity impacts
Colonial period	User in all public facilities.	Discriminative policy against Kenyans, imposed by colonial government
1963-1965	User fees initially introduced continued to exist for two years after independence	Negative impacts of affordability and utilization of health care services
1965	User fees removed at all public health facilities. Health services provided free and funded predominantly through tax revenue.	Potential for equity provided there are mechanism to ensure that the poor benefit from tax funded system
1989	User fees introduced in all level of care.	Negative impact on demand for health care especially among the poorest population: decreased utilization including essential services like immunization.
1990	User fees suspended in all public health facilities. Waiver and exemption put in place to protect the poor and vulnerable failure linked to poor policy design and implementation.	Increase in utilization patterns, confirming previous reports that user fees are a barrier to access.
1991-2003	User fees were re-introduced in 1991, through a phased implementation approach starting from hospital level. Children under five, special conditions/services like immunization and tuberculosis were exempted from payment. User fees continued to exist in Kenya at all level of care.	User fees major barrier to access high out-of-pocket payment, catastrophic impacts, and negative implications for equity.
2004	User fees abolished at dispensaries and health centers (the lowest level of care), and instead a registration fees of Kenya shillings 10 and 20 respectively was introduced. Children under five, the poor, special conditions/services like malaria and tuberculosis were exempted from payment.	Utilization increased by 70% the large increased was not sustained although in general utilizations was 30% higher than before user fee removal. Adherence to the policy has been low, due to cash shortages.
2007	All fees for deliveries at public health facilities were abolished.	No data on extent to which policy was implemented and no evaluation has taken place.
2010	A health sector services fund (HSSF) that compensates facilities for lost revenue associated with user fee removal introduced. Dispensaries and health Centre receive funds directly into their bank accounts from treasury.	Possible positive impacts on adherence to fee removal policy and equity

Table 1: Development of Healthcare Financing Policies in Kenya
Source: Chuma & Okungu (2011)

This table shows that the Kenyan government policy has not been constant in regard to healthcare financing since independence.

A World Bank Report (2012) defines total healthcare expenditure as a percentage of GDP as the sum of public and private health expenditure that covers the provision of preventive health service, curative health services, family planning activities, nutrition and emergency aid designated for health. It does not include provision for water and sanitation and healthcare expenditure per capita (H_eP_C) is the sum of public and private health expenditures as a ratio of total population for provision of health services (The World Bank, 2012).

In April 2001, the heads of states of the Organization of African Unity (OAU) pledged to allocate at least 15% of their annual budget for improving the health sector (Organization of African Unity, 2001). This commitment was reaffirmed in 2003 (African Union, 2003). Four African countries – Zambia, Togo, Rwanda and Burkina Faso – have achieved this target. In contrast, Kenya's expenditure on health dropped from more than 10% in 2000 to approximately 7% in 2009 (Sambo, Kirigia & Orem, 2013). This was allegedly due to lack of healthcare financing.

The World Health Organization Commission for Macro-economics and Health estimated that governments must spend minimum of US$34 per person every year in order to provide an essential package of public health intervention which can be defined as promotive, preventive, curative and rehabilitative care (Kirigia *et al.*, 2006). Table 2 presents healthcare expenditure as a percentage of GDP and per capita from 2010 to 2012 for Middle East, Africa and selected countries (The World Bank, 2012).

Middle East	Expenditure Percentage of GDP			Expenditure Per Capita		
	2010	2011	2012	2010	2011	2012
Israel	7.6%	7.6%	7.5%	$2,165	$2,373	$2,289
Jordan	8.5%	8.8%	9.8%	$361	$386	$388
UAE	3.2%	3.1%	2.8%	$1,283	$1,375	$1,343
Africa	Expenditure percentage of GDP			Expenditure per capita		
	2010	2011	2012	2010	2011	2012
Kenya	4.4%	4.4%	4.7%	$35	$35	$45
Tanzania	7.2%	7.4%	7.0%	$37	$38	$41
Uganda	9.2%	9.3%	8.0%	$43	$41	$44

Table 2: Healthcare Expenditure By Region And Country

In Kenya, healthcare expenditure as a percentage of GDP is growing. Trends show 28.6 % growth in per capita expenditure from 2010 to 2012 (Sambo, Kirigia & Orem, 2013). The reasons for healthcare cost escalation are industrialization of developing countries, change of lifestyles, ageing populations, longer life expectancy, rapid technological advancement in medicine, development of new drugs, and prevalence of non-communicable diseases (NCDs) such as cardiac problems, hypertension, diabetes and other chronic diseases. Increase in expenditure for healthcare will impact government policy concerning provision of healthcare and the possibility of privatization of the public hospitals.

1.2. Privatization of Hospitals

Numerous activities on privatization, M&A of healthcare facilities are documented in the developed world and change of status of the hospitals from government-owned to not-for-profit in order to improve efficiency of the public hospitals by transferring assets from public to private ownership since majority of the public hospitals are inefficient and non-responsive to the needs of the population. It has been suggested that the reason is the relationship between stakeholders, the citizens and managers is mediated by politicians and their interference (Villa & Kane, 2013). Not-for-profit hospitals have also been converted to private for-profit hospitals. In the U.S., a total of 1,653 hospitals have been consolidated from 1980 to 2015 (Irving Levin Associates, 2012; Villa & Kane, 2013; Kaufman Hall, 2015). Trends in privatization of healthcare is ongoing in the U.S., Canada, Germany, India, China, Saudi Arabia and Africa (Himmelstein & Woolhandler, 2008; Martin & Dhalla, 2010; Doherty, 2011; Sinha, 2012; DeNoble, 2013; Villa & Kane, 2013; Action Platform Health and Solidarity, 2014; Hail, 2016). It is anticipated that these activities will increase in Africa and Kenya due to future demand for healthcare; a trend that occurs as a consequence generally. The New Public Management (NPM) orthodoxy advocates for more limited and efficient government for delivery of public goods through re-engineering, deregulation, decentralization, performance management and privatization (Battaglio & Legge, 2008). This thinking has been embraced in the nation of Kenya.

The African Health Fund has invested a total of US$6.5 million in the Nairobi Women's Hospital, the Avenue Medical Group has partnered with Abraaj and Kenya is a target by equity firms for expansion (Avenue Group Profile, 2016; Collins, 2013; Mohandas, 2016; Thomas, 2016). This can be considered as a first step of involvement of equity firms in development of for-profit health systems in Kenya and IFC identified the health sector as one of the top 5 promising investment opportunities in Africa (Doherty, 2011).

A study of privatization of hospitals in Kenya through M&A is optimal at the moment since Kenya is an attractive target for CBA by private equity funds due to its projected economic growth, increased demand for healthcare services and expansion of NHIF.

1.3. Motivation for Merger and Acquisition

M&As create synergies, expand corporate operations and markets, eliminate inefficiencies, improve productivity, profit and economies of scale that ultimately leads to better financial performance and competitive advantage; create shareholder gains, diffusion of know-how, research and development opportunities, internal capital markets, diversification; raise entry barriers, spread portfolio and obtain multimarket contacts (Motis, 2007; Chand, 2009).

There are four motivation categories for M&A: exploitation, exploration, status and survival (Angwin, 2007) and the main motives are strategic (synergy), managerial, financial and third-party motives (Motis, 2007; Angwin, 2007; Riley, 2012; Arnold, 2013).

1.4. Privatization, Merger and Acquisition Process

Privatization is the deliberate sale of state-owned enterprises or assets by government; it is the process of transferring assets from public to private ownership, control and liquidation of the organization previously using those resources (Battaglio & Slegge, 2008; Klos, 2000; Megginson & Netter, 2001). In its most basic form, merger and acquisition takes place when one firm acquires another firm; there are typically two parties involved: a buyer (the acquirer or bidder); a seller or (target firm) and the successful transaction is called takeover. Takeover can occur by acquisitions, proxy contests, going-private transactions, and encompasses a broader set of activities than acquisitions (Ross, Westerfield & Jaffe, 2010; Berk, DeMarzo & Harford, 2013). Acquisition of another firm can follow one of the following three basic forms: merger or consolidation, acquisition of stock, and acquisition of assets. A merger refers to the absorption of one company by another company (acquiring company) that assumes control of all assets and liabilities. A consolidation is the same as merger except that a new company is created and stockholders must approve the transaction.

A merger or acquisition can be classified in one of the following categories: horizontal - when both acquirer (buyer) and acquired (seller) are in the same industry, vertical - when the firms are in different steps of the production process, conglomerate - in this case the firms are not related to each other (Finkler, Ward & Baker, 2007; Chartered Financial Analyst Institute, 2013).

The process of mergers and acquisitions can be broken down to the following 6 main stages: corporate strategy; pre-merger; organizing for acquisitions; deal structuring (affiliation, joint venture, joint operating agreement, merger, acquisition); financial due diligence; non-financial due diligence; post-acquisition integration and post-acquisition audit (balance scorecard, operational audit). Figure 1.7 summarizes this process (Evans, 2000; Dixon Hughes Goodman, 2013; Ruppert, 2009; Kaplan & Norton, 1996).

1.5. Statement of the Problem

Nellis (2005) states there is a need for sub-Saharan African countries to expand their private sector. Privatization of healthcare has been ongoing in the U.S. since 1980s and studies by Shah and Mohanty (2010), Doherty (2011), Sinha (2012), Villa and Kane (2013), DeNoble (2013), Action Platform Health and Solidarity (2014) and Hail (2016) show that this trend is continuing in the U.S., Germany, India, China, Saudi Arabia and Africa.

Discussions with key informants in Kenya and in the Kenyan financial industry indicate that the activities of private equity funds in Kenya are increasing and the country is a target for expansion of for-profit hospital systems from abroad according to recent articles by Mohandas (2016), Thomas (2016) and Business Daily (2016). The fastest way for a health system or equity fund to expand is to acquire existing public and NFP hospitals. There is pressure on central and county governments to improve delivery of healthcare and one approach is to use NPM strategy and privatize public hospitals to improve delivery of healthcare in Kenya. Studies in Africa or Kenya regarding privatization are scarce or nonexistent. Review of existing studies indicates that they are more focused on banking and other sectors such as consumer products, pharmaceuticals, tourism, agriculture, insurance and mining. Therefore, the intent of this research was to determine the effectiveness of hospital privatization through merger and acquisition in Kenya by exploring the following hypothesis.

- H_0: There is a negative relationship between valuation methods and the effectiveness of privatization of hospitals through M&A.

2. Literature Review

This section starts with review of the theory of valuation and then the theory of free cash flow, agency cost, assumption of discounted cash flow, valuation, valuation methods, cross border acquisition and valuation; all found relevant at the start of this research.

2.1. Thoery of Valuation

There is a difference between valuation theory and the theory of valuation. Valuation theory is a mathematical theory in algebraic geometry or algebraic number developed by Hungarian mathematician Kürschák (1912) (Roquette, 2003).

The major building blocks of the modern theory of financial economics are: efficient market theory, portfolio theory, capital asset pricing theory, option pricing theory, agency theory (Jensen & Smith, 1984) and Modigliani and Miller (1958) and Black and Scholes (1973) enhanced theory of valuation, examining the equilibrium condition with no arbitrage opportunities (Constantinides, 1978).

The basic and essential premise of theory of valuation is that mergers are planned and executed by investors or "managers who have better information about the target's value than the stock market" (Trautwein, 1990, p.286). The bid price does reveal clues to private information held by the bidder; a winner's-curse situation can arise from a rising stock price (Ravenscraft & Scherer, 1987; Trautwein, 1990). Wensley (1982) observed that a bidder's sensitivity analysis can further reveal ambiguity in such private information and Shackle (1969, 1972) describes this revelation as genuine uncertainty. At the

same time, other bidders' valuations also reveal clues regarding the valuation method – ultimately each bidder would need to validate their expectations but changes in the market price do not incorporate this private information (Trautwein, 1990). The bid price also includes other critical strategies, such as discouraging other bids and paying lower premiums. Instead, Trautwein (1990) and Wensley (1982) argue that the theory of valuation, unlike other theories of merger and acquisition, upholds a bidder's genuine uncertainty and private information as pivotal levers in such strategic decisions.

The capital asset pricing model and option theory are applicable to M&A since CAPM impacts the cost of equity and cost of equity influences weighted average cost of capital (WACC) which is used for valuation of the unlevered firm and interest tax shield when discounted cash flow is used. Option pricing model can also be used in M&A for valuation when a company has investment opportunities that have option-like features.

2.2. Theory of Free Cash Flow, Agency Cost and Application of Free Cash Flow

Free cash flow is a cash flow in excess of cash that is required to fund all available projects that have a positive present value (PPV) when discounted at an appropriate rate of the cost of capital to the company and are money available to suppliers and lenders after all operating expenses and necessary investments in working and fixed capital" (Stowe, 2007; DePamphilis, 2005). When a firm has sufficient free cash flow at its disposal, managers tend to enter into mergers and acquisitions as a means to use these funds since other investment and buy back options do not prove to be that lucrative, increase their empire hence market power, and distribution of cash flows as dividends would lead to reduced cash at their disposal and loss of power (Jensen, 1986; Wubben, 2007).

Jensen (1986) argues that there is a conflict of interest between managers as the agents of shareholders (owners) and the owners of the companies (Agency theory). When a company pays shareholders, it reduces the amount of resource available to the managers, reduces their power and if they need to borrow money they will be monitored by capital market. Financing projects internally from available resources mitigates this problem. The control hypothesis states that the benefit of debt is that it motivates managers and their organization to be efficient (Jensen, 1986). Jensen (1986) explains that free cash flow is one of the dozen theories of takeovers and it shows the creation of additional debt increases the efficiency of an organization with large cash flow, which has few high return investment projects. Therefore, giving cash to investors avoids wasting of resources on low-return projects.

In a leveraged buyout (LBO) a group of private investors buys the company and uses majority debt to finance the transaction. The ability of the acquired company to support a LBO depends on: the amount of the expected cash flows, the stability of expected cash flows, the outstanding debt, and the condition of the credit markets at the time of LBO (Holthausen & Zmijewski, 2014). LBO and going private help with the control function of debt and agency cost of free cash flow. Lang, Stulz and Walking (1991) developed a measure of free cash flow using Tobin's Q ratio defined as the ratio of the total market value of a firm's assets to their replacement cost, as shown below, in order to distinguish between firms that have positive NPV investment opportunities and those that do not. Companies with high Tobin's Q are likely to have positive NPV projects and therefore, for these companies, acquisition of other companies is expected to be a positive NPV project which can increase stock price. Companies with low Tobin's Q ratio are not likely to have positive NPV projects. Therefore, these companies should pay out their cash flow to the shareholders or invest in zero NPV projects if such projects are available and should not make acquisitions that decrease value of the company and shareholder wealth.

$$Q_{ratio} = \frac{\text{Total Market Value of A Firm}'\text{S Assets}}{\text{Replacement Cost}} \quad \text{Or} \quad Q_{ratio} = \frac{\text{Total Market Value of A Firm}}{\text{Total Assets Value}}$$

2.3. Assumption of Discounted Cash Flow

The discounted cash flow (DCF) method is based on forward looking data and requires a large amount of predictions concerning the future of the economy in general and the company in particular (Steiger, 2008). This method is used for valuing companies price of initial public offerings (IPOs), other financial assets and capital budgeting process. The DCF method contains the following steps: prediction of future free cash flow (FCF) for 5 to 10 years, appropriate discount rate, the weighted average cost of capital (WACC) in order to discount all future FCF and determine their net PV, and establishment of terminal value (TV) which is the net PV of all the future cash flows that accumulate after the time period covered by the scenario analysis and beyond the planning period (DePamphilis, 2015). In this step the net present values of all cash flows are summed up with terminal value. Free cash flow can be used in two ways to calculate DCF: the free cash flow to the firm and the free cash flow to equity investors (Steiger, 2008; Ferris & Petitt, 2013).

2.4. Valuation

The principles of modern valuation can be traced back to Irving Fischer who published two books: The Rate of Interest in 1907 and The Theory of Interest in 1930 (Damodaran, 2006). Valuation topic is of interest for economists who are engaged in either practice or theory and for individuals in finance. Valuation is a method of quantifying how much money something should be exchanged for today, considering future benefits. In valuations, most of the time the company is valued as an ongoing business, going concern value or going value; it can also not operate in the future and in this case liquidation value (forced and orderly) or breakup value will be considered (Holthausen & Zmijewski, 2014).

Financial owners and investors are interested to know the answer to the question as to what economic value future earnings have today (Kruschwitz & Loffler, 2006). Damodaran (2012) considers three approaches to valuation: intrinsic valuation, relative valuation, and contingent claim valuation (option pricing). Bruner (2004) identifies at least nine valuation approaches: book value, liquidation value, replacement cost, current market value, trading multiples of comparable firms, transaction multiples of comparable acquisitions applied to the target, venture capital / private equity approach, option theory valuation of target firm, and discounted cash flow.

2.5. Valuation Methods

There are several valuation methods available and are dependent on the following: a company's industry, a company's characteristics such as startup or mature company, and the analyst's preferred valuation method. Mainstream valuation methods are classified into two categories: indirect or relative valuation methods, direct or absolute valuation methods. Figure 2.1 summarizes these mainstream methods.
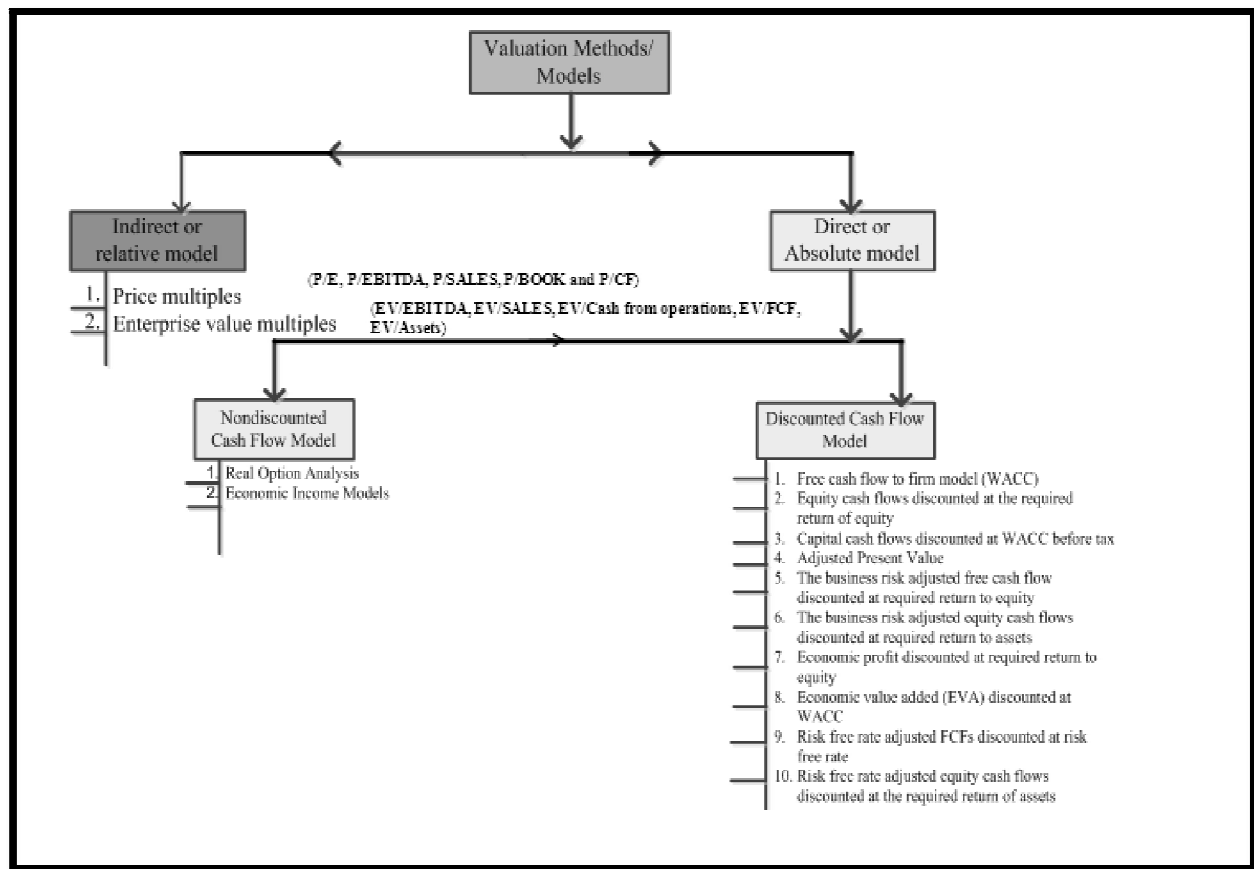

Figure 1: Valuation Methods / Models
Source: Author

2.5.1. Indirect or Relative Valuation Models

Indirect or relative valuation methods give corporate leadership and analysts a quick way to estimate the value of a company and rely on the use of multiples. A multiple is defined as a ratio between two financial variables. Normally, the numerator of the multiple is either company's market price (market capitalization) or its enterprise value. Market price equals current share price times the number of outstanding shares and enterprise value is the market value of a company's capital (debt + equity), net of cash. The denominator of the multiple is an accounting metric, for example, a company's earnings, sales, or book value (Ferris & Petitt, 2013).

Indirect or relative value model determines the value of assets based on how similar assets are valued in the marketplace based on the approximate value of comparable companies, transactions or industry averages (DePamphilis, 2015). This method estimates the value of a company by applying the valuation multiples of peer or similar companies and is widely used in the financial community (Bruner, 2004).

Table 3 summarizes price multiples and enterprise value methods and multiple ratios used in indirect valuation or relative valuation models.

Method	Multiple Ratios
Price multiples	P/E, P/EBIT, P/EBITDA, P/SALES, P/Book and P/CF
Enterprise value	EV/EBITDA, EV/Sales, EV/Cash from operation, EV/FCF, EV/Assets

Table 3: Summary of Multiple Ratios
Source: Author (2016)

2.5.2. Direct Valuation Method

Direct valuation methods provide a direct estimate of a company's fundamental values. The fundamental value of a company is its future cash flows and other factors might be sales, accounting earning, book value or economic income which might drive share price. However, the dominant viewpoint is that changes in future cash flows impact changes in share prices (Ferris & Petitt, 2013).

2.6. Discounted Cash Flow Valuation

Parker (1968) states that the earliest interest rate tables were developed by Francesco Balducci Pegolotti who was a merchant in Florence in 1340 and his work was not published till 1766. A. M. Wellington and Walter O. Pennell, both engineers, discussed the time value of money and development of present value equations for annuities. Analysts have used 1938 John Burr Williams' PhD thesis, "The theory of investment value" to develop a group of DCF valuation models (Investice Do Rozvoje Vzdelavana, 2016). Fernandez (2007) identifies 9 theories and 10 methods for valuing companies by discounted cash flow.

The main assumption of DCF is that the value of a firm today is equal to the present value (PV) of the future cash flows to be generated by the firm, discounted at a rate that reflects the riskiness or uncertainty of those cash flows. The DCF determines the value of an asset as the sum of the projected cash flows generated by the asset after adjusting each projected cash flow for its timing and risk by an appropriate discount rate (Holthausen & Zmijewski, 2014). In his paper, Fernandez (2007) also describes the ten models of DCF which are: free cash flow discounted WACC, equity cash flows discounted at the required return of the equity, capital cash flows discounted at WACC before tax, adjusted present value (APV), the business risk-adjusted free cash flow discounted at required return to assets, business's risk adjusted equity cash flows discounted at required return to assets, economic profit discounted at the required return to equity, economic value added (EVA) discounted at WACC, risk-free rate-adjusted FCFs discounted at risk-free rate, and risk-free rate adjusted equity cash flows discounted at the required return of assets. The only difference among the 10 models of DCF is in the cash flows taken as the starting point of valuation.

Cost of equity (K_e) is an important component in determining WACC. K_e is the rate of return to induce investors to purchase a firm equity (stock) and K_e is estimated using the capital asset pricing model (CAPM) (DePamphilis, 2015). The CAPM was developed in 1960s by Sharpe, Linter, Treynor and Markowitz. It describes the relationship between security's expected return, the risk-free rate of return (measure of the risk of security) and its risk premium per unit of risk measured against the return on the risk-free assets. There are also other models of CAPM such as: modified CAPM, three-fold model, arbitrage pricing model, Gordon constant growth dividend model, implied cost of capital model, and build-up method (Holthausen & Zmijewski, 2014).

2.7. Cross Border Valuation

Erel, Liao and Weisback (2012) argue that two thirds of worldwide M&As combine companies from two different countries. Authors identified currency movement as a major factor in determining the cross-border M&A patterns. Firms in the superior performing countries target firms in the worse performing countries. Froot and Stein (1991) state that companies from developed countries have a tendency to acquire companies from poorer countries because of the wealth effect due to lower cost of capital.

Review of financial text books (Bruner, 2004; Ferris & Petitt, 2013; Holthausen & Zmijewski, 2014; DePamphilis, 2015) consider DCF an appropriate method for valuing cross border companies. However, the following factors should be taken to consideration and DCF should be adjusted accordingly: exchange rate forecast, taxes, nominal or real forecasts and discount rates, timing of cash flows, and country-related risks.

There are two approaches for adjusting DCF in cross border acquisition (CBA): centralized approach, and decentralized approach (Holthausen & Zmijewski, 2014; Bruner, 2004). Another important factor is taxation and cost of equity K_e. There are two options for paying tax: worldwide tax, and territorial tax (DePamphilis, 2015). The bigger challenge is how to determine cost of equity K_e for cross border valuation using CAPM when capital market is integrated or segmented. There are at least twelve (12) different approaches to determine the cost of equity in emerging markets (Harvey, 2005). Table 4 summarizes the appropriate approach (Bruner, 2004) and Table 5 shows common methodologies for valuation of CBA.

Capital Market Condition	Target Country Is Integrated	Target Country Is Segmented
Foreign capital market information Environment is *strong*.	• CAPM, ICAPM • Multifactor model	• Multifactor model • Credit model • Adjusted CAPM
Foreign capital market information Environment is *weak*.	• CAPM	• Adjusted CAPM • Credit model

Table 4: Suggested Application of Cost of Equity Models by Country Segmentation and Information Environment (Assuming Foreign Cash Flows Are Translated Into Home Currency Cash Flows Using Interest Rate Parity)
Source: Bruner (2004)

Developed countries (integrated capital markets)

Step 1. Project and convert cash flows

a. Project target's cash flows in local currency
b. Convert local cash flows into acquirer's home currency, employing forward exchange rates projected using interest rate parity theory

Step 2. Adjust discount rates

$k_{e,dev} = R_f + \beta_{devfirm,global}{}^a(R_m - R_f) + FSP$
$i = \text{cost of debt}^c$
$WACC = k_e W_e + i(1-t) \times W_d$

a. R_f is the long-term government bond rate in the home country
b. $\beta_{devfirm,global}$ is nondiversifiable risk associated with a well-diversified global, US, or local-country equity index
c. R_m is the return on a well-diversified US, local, or global equity index
d. FSP is the firm size premium
e. t is the appropriate marginal tax rate
f. W_e is the acquirer's target equity-to-total capital ratio, and W_d is $1 - W_e$

Emerging countries (segmented capital markets)

Step 1. Project and convert cash flows

a. Project target's cash flows in local currency
b. Convert local cash flows into acquirer's home currency, using forward exchange rates. Project exchange rates, using purchasing power parity theory if little reliable data on interest rates available

Step 2. Adjust discount rates

$k_{e,em} = R_f + \beta_{emfirm,global}{}^a(R_{country} - R_f)^b + FSP + CRP$
$i_{local} = i_{home} + CRP$
$WACC = k_e W_e + i_{local}(1-t) \times W_d$

a. R_f is the long-term government bond rate in the local country or the U.S. Treasury bond rate converted to a local nominal rate if cash flows in local currency or if cash flows in dollars, the U.S. Treasury bond rate. Note that if the local risk-free rate is used, do *not* add CRP
b. $\beta_{emfirm,global}$ is nondiversifiable risk associated with target's local-country β and local country's global β
c. $R_{country}$ is the return on a diversified local equity index or a similar country's index
d. CRP is the country risk premium
e. i_{home} is the home country cost of debt
f. i_{local} is the local country cost of debt

[a] β may be estimated directly for firms whose business is heavily dependent on exports or operating in either developing or emerging countries by regressing directly the firm's historical financial returns against returns on a well-diversified global equity index. For firms operating primarily in their home markets, β may be estimated indirectly by using Eq. (18.7).
[b] $(R_{country} - R_f)$ also could be the equity premium for well-diversified US or global equity indices if the degree of local segmentation is believed to be small.
[c] For developed countries, either the home country or local country cost of debt may be used. There is no need to add a CRP as would be the case in estimating a local emerging country's cost of debt.

Table 5: Common Methodologies for Valuing Cross-border Transactions
Source: DePamphilis (2015)

2.8. Results of Empirical Studies on Effect of Valuation Methods

Firms use DCF method to determine the value of takeover target and managers consider DCF method and market value more important than other alternative techniques (Baker, Miller and Ramsperger, 1981; Mohan *et al.*, 1991). There are various valuation methods and according to Marren (1993), the DCF method is the soundest method based on theoretical grounds. Studies by Trahan and Gitman (1995), and Graham and Harvey (2001) also confirms the trend using DCF method in decision making.

Bruner*et al.* (1998) conducted a study and concluded that DCF method was the dominant valuation method among the participants, WACC was used as the discount rate and CAPM was used for estimating the cost of equity. In the United Kingdom financial analysts choose either DCF method or P/E method and support them by supplementary methods to double check them (Demirakos, Strong & Walker, 2004). Financial advisors in Denmark use DCF method as the dominant valuation method and ninety five percent (95%) of survey participants used it (Peterson, Plenborg & Scholer, 2006). In the U.S. consultants preferred a comparable transaction method as their first choice, comparable multiple methods as second and DCF method as the third choice (Fu, 2007). A study conducted by Wright et al. (as cited in Vydrvel & Soukupova, 2012) investigated what venture capital (VC) firms use for valuation. They found a significant association between different legal systems and valuation methods used. For example, in the Germanic legal system, more DCF is used compared to English-based common Law system. In the U.S. VC firms are more likely to use DCF method compared to VC firms from Europe.

Vydrvel & Soukupova (2012) investigated the valuation methods used by consultants in Czech Republic and conducted a survey of 37 private equity funds and investment holdings. The results indicated that transaction multiples were chosen as the first method, DCF method as second choice and market multiples as the third choice.

DCF method, FCFF was the most prevailing method of all DCF modification among financial advisors and FCFE was the second method, the length of forecasted FCFF used by financial consultants was up to 5 years with the following breakdown: private equity ninety four percent (94%) of the time, independent financial consultants seventy nine percent (79%) of the time, and dependent financial consultants sixty three percent (63%) of the time.

Ten-year treasury bond was used fifty percent (50%) of the time to determine the risk-free rate to calculate WACC. Equity risk premium was forty three percent (43%) of the time determined based on investors' expectation and historical equity premium.

In Ukraine, in order to make a reasonable decision concerning the value of a bank, the following valuation methods are used: the book value, and the return of investment which is based on the use of discount cash flow method (Knysh, 2015). KPMG (Klynveld Peat Marwick Goerdeler) prepared valuation of Danubius Hotel and Spa chain in Hungary based on income approach using DCF method. One major problem for KPMG was to determine the appropriate discount rate. In order for them to overcome this problem, they considered the average required return on equity of comparable firms (Borda & Saudagaran, 1994).

In a study conducted by Mukherjee, Kiymaz and Beker (2004), forty nine percent (49%) of the firms used DCF method in conjunction with the market multiple methods to value a publicly held company, and approximately eighty three percent (83%) of firms used DCF method for valuation, sixty one percent (61.3%) of the firms used DCF valuation method considered their own WACC as discount rate, eight percent (8%) use target companies' WACC and nineteen percent (19%) used cost of equity as discount rate. The results also showed that ninety eight percent (98%) of the firms used DCF valuation method to value closely held companies and thirty seven percent (37%) used industry multiple approaches. Forty nine percent (49%) used DCF for publicly held and forty eight percent (48%) use DCF for closely held companies to value them.

Fernandez (2013) argues that the methods for determining fair market value of a company can be organized into six groups: balance sheet; income statement; mixed (goodwill); cash flow discounting; value creation; options. DCF methods are used to identify the firm's value by estimating the amount of cash flow it will generate in the future. However, these cash flows must be discounted at an appropriate rate that matches the risk and a suitable discount rate is determined for each type of cash generated. Table 6 shows appropriate discount rates for different streams of cash flow.

Cash Flows	Appropriate Discount Rate
FCF. Free cash flow	WACC. Weighted average cost of capital
ECF. Equity cash flow	Ke. Required return to equity
CFd. Debt cash flow	Kd. Requires return to debt

Table 6: Appropriate Cash Flow for Discounting
Source: Fernandez (2013)

A study conducted by Bruner *et al.* (1998) which included 27 companies, financial advisers and leading financial text book publishers intended to determine best practices in valuation and estimating the cost of capital. The results were: DCF is considered as the dominant investment valuation technique, WACC is the dominant discount rate when conducting a DCF analysis, when weights of equity and debt are determined they are based on market value and not book value, marginal or statutory tax rates are used to calculate the after-tax cost of debt, and CAPM is the dominant model for estimating K_e and other models are used by a small number of companies.

Fuzzy discounted cash flow takes vague cash flow, growth rate and discount rate into consideration in order to develop a more realistic valuation model and can be considered as an extension of DCF (Yao*et al.*, 2005). Gelinas (2013) proposes a new DCF valuation model that includes the following two factors: the first one is the potential for greater projected net future cash flows when assets of both companies' merge, and the second one is source of synergy which is the potential ability to use a lower discount rate to determine the PV of future cash flows, if the assets are less risky after merger.

Hazelkorn, Zenner and Shivdasani (2004) studied whether acquiring firms create value for their shareholders as a result of M&A transactions by measuring stock price response to announcement of M&A transaction over long and short terms. They found that on average the acquirer's shareholders suffered loss of 0.5% to 0.7% on market adjusted basis around initial announcement.

Aluko and Amidu (2005) examined valuation of corporations during M&As in Nigeria by looking at fair market value, replacement cost, accounting / financial ratios, discounted cash flows evaluation, goodwill and marriage value. They found among other things that the value of holding property needs to be measured against the return on equity that could be achieve both within the business and elsewhere. They also expressed the opinion that the role of a valuer is not one of accountant but interpreter of financial and physical information based on market research along with clear understanding of profit or DCF method including the nature of business under consideration in M&A.

Collan and Kinnunen (2011) studied how to perform rapid pre-acquisition screening of target by investigating total value of an acquisition target's cash flow (economic capital) and companies with the pay-off method of real option valuation to

screen prospective acquisition target companies. They found out that before acquisition one must put weight on the analysis of strategic capital (intellectual and human capital) and synergy investment through three cash flow approaches: maximum possible, most likely and minimum possible in order for M&A to be successful.

2.8.1. Valuation Method of Public and Not-For-Profit Institutions

Kominski (2001) states that one of the fundamental questions raised is the method for valuation of NFP organization(s). He suggests that the following techniques are appropriate: asset-based analyses that include: book value, replacement value, and liquidation value, comparable market analyses that include: trading and transaction multiples, and comparable acquisitions, and income or cash flow analyses. Asset-based analysis is very subjective and comparables need a large number of transactions to be reliable. Therefore, they might not be the best methods because of their shortcomings. DCF, NPV analysis is widely accepted as the most appropriate method of valuation of NFP organizations. However, DCF analysis is difficult and needs considerable amount of historical information and assumption about the future. Australian Accounting Standards (AAS) recommends that NFP organizations and public sectors use AASB13 to determine FMV. This standard recognizes the following three valuation methods for measuring FMV: market approach using prices and other relevant information generated by market transactions involving identical, comparable and similar assets, liabilities or group of assets and liabilities, income approach base on future amounts of cash flows or incomes that are discounted to single current amounts and the technique used is PV or option pricing, and cost approach base on the amount needed currently to replace the service capacity of an asset (current replacement cost) (Ernst & Young Australia, 2013). Therefore, we can infer that DCF method is a dominant method in valuation of not-for-profit organizations.

2.9. Result of Empirical Studies on Effectiveness of Privatization

Concern over increase in government expenditure has led to privatization or denationalization that started in the 1960s by the Adenauer government in Germany and Thatcher government in the 1980s in England as shown in Table 6. Ramamurti (2000) states that only 10% of the SOEs assets in the developing countries and 30%-40% of SOEs assets in the transitional economies (TE) had been privatized as of 1996. He considers privatization at three levels: firm, industry, and country, and states that combined effect of these reforms changes the performance of firms and M&A is not a one-shot event but a process that evolves. The empirical evidence demonstrates that the quality of services provided by private firms might be equivalent or better than services provided by public institutions (Gerber, Hall, & Hines, 2004).

Country	1913 Government Spending as % of GDP	1990 Government Spending % as of GDP	
U.S.	7.5%	33%	25.5%
Spain	11%	42%	31%
Japan	8%	32%	24%
France	17%	50%	33%
Netherlands	9%	54%	45%

Table 7: Government Expenditure from 1913 to 1990 as Percentage of GDP
Source: Gerber, Hall & Hines (2004)

Vickers and Yarrow (1998) state that the reasons for privatization through M&As are: improving efficiency, reducing borrowing by public sector, reducing government involvement in decision making for enterprises, easing problems of public sector by pay determination, increasing share ownership, and gaining political ownership. Megginson (2000) argues that a government pursues privatization in order to: increase efficiency, introduce competition, bring market discipline to public enterprise, encourage involvement by foreigners, increase share ownership, and raise revenue for the government.

The performance of an organization can be measured in terms of the relationship between inputs, outputs and outcomes. Therefore, the ratio between outputs and inputs is a measure of efficiency, technical efficiency, X-efficiency or productivity. Effectiveness measures the degree to which the outcomes match the original goals and objectives by the organization. A study conducted by Majumdar (1996) looked at efficiency between government-owned, mixed and private sector in India which supported the superior efficiency of private and mixed sector firms over SOEs. Table 8 summarizes findings.

Type of Ownership	Average Efficiency Score
SOE	0.658
Mixed	0.92
Private	0.975

Table 8: Type of Ownership and Average Efficiency Score
Source: Majumdar (1996)

Dan et al. (2012) study seeks to assess the impact of New Public Management style reform in European countries and the effects of privatization and agencification. Agencification has been seen as a route to economies of scale, reduction of input and better professional management such as improved processes in order to gain efficiency, improve output, input ratio, and to higher customer service, service quality and or improved outcome. Analysis of 72 studies by Dan et al. (2012) indicates that in many cases, there has been an improvement in management and professionalism of agencies, and deterioration has also been observed. In Austria, there has been an improvement in saving and efficiency. However, studies show that in Belgium and the UK efficiency has been unchanged or at most experienced minor improvement.

There are some factors that impact privatization and its effectiveness. One of the key components of privatization is management change. However, this is contingent upon the following factors: the method of privatization which defines who the new owners are and what kind of corporate governance will be implemented, and the degree of prior restructuring experience, and finally deregulation and liberalization. The cumulative effect of these factors might lead to a change of management which leads to changes in goals, strategies and will impact performance of the firm (Cuervo & Villalonga, 2000).

Empirical studies demonstrate that there is a relationship between firms' ownership and their financial performance. SOEs have a lower financial performance than private firms in both developed and emerging economies (Megginson & Netter, 2001). In their study, Chen *et al.* (2008) found that a change in the largest shareholders at the firm listed on the stock market in China has a positive effect on profitability of the firm when change of control is passed from state to private entity and there is no effect when the transaction is a state entity. This suggests that state ownership weakens the sensitivity of top leadership turnover to firm profitability (Shen & Lin, 2009). Additionally, the study suggests that the partial privatization of SOEs or hospitals is not as beneficial as full privatization and results of a study conducted by Ramasamy, Ong, and Yeung (2005) suggest that ownership is the most important determinant of profitability. They showed that privately owned plantation companies in Malaysia have a higher level of profits than SOEs which is consistent with other empirical studies. International Finance Corporation (IFC) advised the Kenyan government on privatization of Kenya Airways and a study was conducted by Ochieng and Ahmed (2014) to determine the impact of privatization and financial performance of Kenya Airways. The results of the study showed that liquidity, debt ratio, financial efficiency, asset turnover, income efficiency and capital expenditure were all improved post privatization.

A study conducted by Megginson and Netter (2001) summarizes performance of a privatized firm (operating and financial) from three empirical studies analyzing profitability, efficiency, investment, output and employment and it shows improvement in all categories. Megginson, Nash, and van Randenborgh (1994), conducted a study that compared the pre- and post-privatization performance of 61 firms in 32 industries in 18 different countries. The results showed a significant increase in profitability, output per employee, capital spending, and employment after privatization. In Nepal, the impacts of privatization of SOEs are found to be positive and it has accomplished the following results: increased production and diversification, improved technology, reduced financial losses, reduced financial burden of government, increased investment in private sector, and increased quality of goods and services (Raut, 2012).

Chatterjee (2008) and Nadkarni (2010) assert that empirical evidence shows that the reason for the growth of private health sector in India has been failure of the public health sector to meet the needs of patients. The number of admissions in public hospitals in Poland dropped after privatization. The patients' opinion was that the quality of services improved and private hospitals were better. Private hospitals were also more efficient and the length of stay in private hospitals was 5.8 days versus 6.9 days in public hospitals. The number of patients admitted per bed in private hospitals was 38.7 versus 38.2 in public hospitals, which is a clear indication that private hospitals were more productive (Siuda & Romaniuk, 2006).

Harris, Ozgen & Ozgen (2000) showed that after horizontal merger hospital efficiency increased and input utilization was reduced (scale efficiency). According to Villa and Kane (2013), following privatization of public hospitals, they increased operating margins, reduced their length of stay and improved their occupancy. Tiemann and Schreyögg (2012) investigated the impact of privatization on efficiency of hospitals in Germany. They demonstrated that conversion from public to for-profit private hospitals improved efficiency between 2.9 to 4.9%.

3 Research Philosophies and Methodology

3.1. Research Philosophy

The research philosophy for this study was applied exploratory and is based on post-positivism which is a philosophical approach that focuses on verifying hypotheses; rationalism, capacity to reason, and empiricism based on sensory experience. "Post-positivist research emphasizes on inferential statistics with its attention on assigning probabilities that observed findings are correct" (Gray, 2014).

3.2. Research Design

3.2.1. Exploratory Research

A focus group is useful for exploring ideas and concepts to obtain in-depth information and how participants think about an issue, it allows probing, the facilitator must be skilled, and should not be the only method for data collection (Christensen, Johnson & Turner, 2011). Focus group and in-depth interviews with 4 to 6 participants from the target

population, (Levels 4, 5, and 6 hospitals) which included one of the following individuals: Chairperson of the Board, Chief Executive Officer, Chief Operating Officer, and Chief Financial Officer) were conducted in order to understand the participants' viewpoint regarding determinants of effectiveness of hospital privatization through mergers and acquisitions and to solicit their views regarding the research topic which led to refinement of the developed self-administered questionnaire before piloting it.

3.2.2 .Mixed Method

This research used mixed method (qualitative and quantitative) to collect data. Qualitative or unstructured method is used to explore the nature of problem. The quantitative or structured study is more appropriate to determine the extent of a problem. "This method is based on the compatibility thesis and follows the philosophy of pragmatism and the idea is that quantitative and qualitative methods are complementary to each other and can be used effectively together in a single research study" (Christensen, Johnson & Turner, 2011). The qualitative approach assisted to explore the determinants of effectiveness of hospitals privatization through M&A and comments were obtained from participants through focus group and in-depth interviews. A self-administered structured questionnaire, the quantitative approach was used to explain the relationship among determinants. Mixed method approach yields a better result and allows for opportunity to compensate for the weakness of each method, capitalizes on strengths of each method and offsets inevitable method biases (Green, 2013).

3.3. Population, Sampling Frame and Sampling Technique

The population or sampling frame of the study was hospitals in Kenya designated as Levels 4, 5 and 6 with equal to 50 or more than 50 beds.

3.4. Sampling Design

In quantitative research randomization is used to ensure that a sample is selected in such a way that it represents the study population (Levels 4, 5 and 6 hospitals) and avoids bias. Therefore, simple random sampling, clustering, stratification and random or probability sampling is used which will give each element of the population equal and independent chance of selection (Bryman & Bell, 2011; Kumar, 2014).

3.4.1. Sampling Frame

In order to develop the sampling frame, the Ministry of Health portal was accessed on March 11, 2016 and the list of all the healthcare facilities in Kenya was retrieved (total population of 10,068 institutions). Kenya Medical Practitioners and Dentists Board portal was also accessed on March 14, 2016 and the list of healthcare facilities was retrieved which included 2,360 facilities. Both lists were merged to develop a comprehensive list of healthcare facilities (sampling frame) in Kenya. During this exercise, discrepancy between both lists such as number of beds and level was discovered.

Both lists were further refined by eliminating the following columns: county, district, division, sub location, constituency, nearest town, plot number, open 24 hours, open weekends, cost, and operational status. Seven columns were chosen: facility name, type, owner, province, location, Kenya Essential Package for Health (KEPH) levels, and number of beds. A list was developed including these columns and all the Levels 4, 5, and 6 hospitals. This list was further refined to include Level 4, and Level 5 and 6 hospitals with fifty (50) or more than fifty bed which resulted in sample (population) frame of 571 Level 4, 25 Level 5, and 9 Level 6 hospitals. This list was further refined to include only hospitals with equal to or more than 50 beds in Level 4 according to the definition by Kenya Medical Practitioners and Dentists Board. Therefore, the sampling frame was reduced to 234 hospitals in Level 4 and resulted in a total population of 268 hospitals.

3.4.2. Stratified Random Sampling

This research used multistage stratified random probability sampling. The first stage was to stratify hospital population by Levels 4, 5 and 6 (stratum). The second stage was to determine the procedure for selecting a stratified sample which was proportionate stratified sampling and the last stage was randomly selecting units from each hospital level. This method allowed representation from each hospital level (Bryman & Bell, 2011; Kumar, 2014).

3.5. Sample Size

Sample size was determined as 158 hospitals after triangulation of different methods and proportionate stratified sampling was used to determine sample size of each hospital level as shown in Table 9.

Hospital Level	Population By Level N	Proportion P %	Total Sample Size	Sample Size By Level PXN
4	234	87%[1]	158	137
5	25	9%	158	14
6	9	4%[2]	158	7
Total	268	100%	158	158

Table 9: Sample Size by Hospital Level
Source: Author (2016)

- $\frac{234}{268}$ x 100 = 87%
- Level 6 numbers were rounded from 3.35% to 4% and sample from size 6.32 to 7.

3.6. Data Collection Methods and Analysis

This study was a cross-sectional research and data was collected at a single point in time. Sources of the collected data were primary data and secondary data (Simam & Rotich, 2011). Primary data was collected through in-depth interviewing that can be structured or unstructured and self-administered questionnaire through mail and online.

In September 2016, twenty-eight questions were drafted and after consultation with academic supervisors 14 questions were selected for information gathering concerning the determinants of effectiveness of hospital privatization through mergers and acquisitions in order to utilize the results to refine the drafted research instrument.

The first interview was conducted with the help of two research assistants in late September 2016 in order to pilot the questions and the participant was a CEO of a Kenyan private hospital who recently sold stake to a foreign equity firm. There was a consensus that the questions were appropriate and question number 15 was added at the conclusion of the interview. In the second phase 16 individuals were targeted for focus group or in-depth interviews: 4 Chairpersons of the Board, 4 Chief Executive Officers, 4 Chief Operating Officers and 4 Chief Financial Officers. 11 individuals participated including 7 individuals in in-depth interviews and 4 in a heterogeneous focus group. It was difficult to get individuals who participated in focus group willingly to share opinion. Therefore, it was decided to conduct in-depth interviews and discontinue focus group since it was difficult to get individuals in leadership positions to participate and share sensitive information. The participants were from Level 4, 5 and 6 hospitals.

Responses to exploratory questions 1 to 15 were combined. Microsoft Excel, IBM text analysis, SPSS software and natural language processing technique were used to perform sentiment / keyword extraction analysis. The results were used to finalize the research instrument (self-administered structured questionnaire). Literature search based on proposed theoretical framework for privatization through M&A and conceptual framework generated additional questions based on theories, motivations and empirical studies. These questions were added to the research instrument and after meeting with the academic supervisors and revision, permission was granted to pilot the questionnaire.

3.7. Reliability and Pilot Testing

Castillo (2009) suggests the following Cronbach Alpha Coefficient (CAC) as rules of thumb for internal reliability: CAC > 0.9 – excellent, CAC > 0.8 – good, CAC > 0.7 – acceptable, CAC > 0.6 – questionable, CAC > 0.5 – poor, and CAC < 0.5 – unacceptable.

Twenty (20) questionnaires were administered during one-on-one interviews and information was collected to establish the reliability of the survey questionnaire. IBM SPSS statistical software was used to measure Cronbach's alpha using SPSS's reliability analysis procedure.

3.8. Administration of the Instrument

In May 2017, permission was granted by the academic supervisors to carry out the field study. The research instrument, a self-administered questionnaire with Likert scale of 1 to 5 which consisted of the following constructs (sections): demographic - consistent of 10 questions, top leadership - consistent of 19 questions with $\alpha = 0.83$, was sent to the senior hospital leadership who were COB, CEO, COO, CFO and other senior managers of randomly selected hospitals, to be completed.

3.9. Data Analysis

Sullivan and Artino (2013), Norman (2010), Carifio and Perla (2008) argue that it is permissible to use parametric tests when using Likert scales. Consequently, parametric tests were used to analyze the collected data. Hyndman (2008) states that data processing includes translating the answers to the questionnaire into a format that can be manipulated to produce statistical results and the response rate to self-administered questionnaire was calculated using the following formula (Bryman & Bell, 2011).

$$\frac{\text{numbers of usable questionnaire}}{\text{total sample} - \text{unsuitable or uncontactable numbers of the sample}} \text{ x 100}$$

The Statistical Package for Social Sciences software (SPSS) was used for descriptive and inferential statistical analysis to draw a conclusion from the sample population.

<u>3.9.1. Descriptive and Inferential Statistics</u>

3.9.1.1. Descriptive Statistics

Descriptive statistics starts with data sets and deals with arranging and describing the collected data and these measures also give the idea of overall distribution of observations in the data set (Weiss, 2012; Kothari & Garg, 2014). Elements of descriptive statistics are: graphic distribution, central tendency, variability (range, variance and standard distribution), frequency distribution, and relations among variables which include correlation coefficient, regression analysis, difference between means and contingency table (Christensen, Johnson & Turner, 2011; Levine *et al.*, 2013). Descriptive statistics helps researchers to communicate the important characteristics of the collected data.

3.9.1.2. Inferential Statistics

Researchers use sample data and statistics to calculate numerical index ($\bar{x}$, r) to make generalizations about populations. When numerical index (mean and correlation coefficient) is calculated using data from the entire population it is called population parameter. Inferential statistics uses random sampling and data to make generalizations about a population. Inferential statistics deals with methods that can use collected data from a sample (small group) to draw conclusions about a population (larger group) (Levine *et al.*, 2013).

4. Results and Findings

4.1 Response Rate and Demographics

The intent of the research was to collect data from a sample of 158 hospital top leaders (COB, CEO, COO, CFO and CNO) of Level four (4), five (5) and six (6) hospitals in Kenya. Out of the one hundred fifty-eight (158) targeted hospital leaders, only fifty (50) respondents provided information and a response rate of thirty two percent (32%) was achieved.

Demographic analysis indicated that fifty two percent (52%) of the participants were from Level 4 hospitals. Eighty six percent (86%) of the respondents were senior management of the hospitals and sixty three percent (63%) of them had background in medicine; followed by twenty three percent (23%) in business administration. Ninety six percent (96%) of participants had Bachelors and Masters degrees and seventy six percent (76%) of them had less than 5 years of experience in their position. Sixty four percent (64%) of the hospitals were government and county sponsored NFP hospitals and twenty one percent (21%) were private NFP and religious NFP hospitals. Therefore, eighty five percent (85%) of the hospitals that participated in this study were NFP and fifteen percent (15%) of the hospitals were for-profit (FP). Seventy percent (70%) of the hospitals had experienced revenue growth ranging from 1% to 19% and eighty eight percent (88%) of participating hospitals had not experienced any decline in revenue growth (see Appendix 1).

4.2. Effect of Valuation Methods on Effectiveness of Privatization of Hospitals through M&A

The intent of the study was to determine the influence of valuation methods on effectiveness of privatization of hospitals through M&A. This was examined by evaluating the awareness of top managers on how valuation methods could influence privatization of hospitals. The findings are portrayed using both descriptive and inferential statistics and evaluation of statistical assumptions was also performed. The responses were rated on a Likert scale (1 through 5), frequency percentage, mean (M) and standard deviation (SD) of responses were calculated as shown in Appendix 2 organized in descending order.

4.3. Descriptive Findings for Valuation Methods

Results indicate that mean scores ranged from 2.58 to 4.09. The highest mean score (M = 4.09, SD = 0.62 and majority of 95.7% agreeing) was related to definition of valuation methods. However, understanding of different methods was average.

Participants expressed that they understood the meaning of free cash flow (M = 3.63, SD = 0.959 and majority of 64.5% agreeing) followed by familiarity of financing by equity firms (M = 3.57, SD = 0.950 and majority of 63.8% agreeing), then by commercial institutions (M = 3.50, SD = 1.031 and majority of 58.3% agreeing) and last one venture capitalist (majority of 58.3% agreeing). Market approach was identified as the preferred method for valuation by participants (M = 3.48, SD = 0.772 and 43.7% indicating agreement), followed by cost and then income approach and 42.6% to 50.0 % of participants were uncertain about the best method.

The participants stated they would sell their shares if the offer price is more than initial investment (M = 2.58, SD = 0.986 and majority of 54.2% including uncertain the proportion increased to 79.2%) followed by appropriate time frame for projection of free cash flow (M = 2.77, SD = 0.684, majority of 62 to 69.8% being uncertain about time frame). Majority of

respondents were uncertain about time frame for projection of FCF and also did not know how a company is valued during M&A (M = 2.77, SD = 1.057 and majority of 52.1%) (see Appendix 2).

4.4. Normality Test of Data for Valuation Methods

Prior to analyzing data using inferential statistical techniques, normality of the data set was tested by conducting the following tests: detrended normal Q-Q plot, normal Q-Q plot, normal histogram plot, skewness, Shapiro-Wilk test, Kolmogorov-Smirnov test and homoscedasticity test. Results indicated that data distribution was normal.

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Valuation methods	47	-1.422	.347	2.409	.681

Table 10: Skewness - Kurtosis Values for Valuation Methods
Source: Author (2017)

Effectiveness of Privatization	Valuation Methods	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
	1.00	.260	2	.			
	2.50	.260	2	.			
	2.60	.260	2	.			
	3.50	.260	2	.			
	3.67	.260	2	.			
	3.83	.385	3	.	.750	3	.100
	3.90	.260	2	.			
	4.00	.389	13	.000	.600	13	.152

Table 11: Normality Test for Valuation Methods
A. Lilliefors Significance Correction
Source: Author (2017)

The findings as shown in Table 12 indicate that data were normally distributed for valuation methods as p-values obtained were all above P>0.05.

Levene Statistic	df1	df2	Sig.
5.593	10	24	.000

Table 12: Homoscedasticity Test for Valuation Methods
Source: Author (2017)

Levene's test of equality of variances was performed. The $F(10,24) = 5.593$ with a p-value P<0.005 is highly significanct at 5% level and the study concluded that the variance is not homogenous.

4.5. Results of Hypothesis Tests

4.5.1. Correlation Analysis between Valuation Methods and Effectiveness of Privatization

Pearson correlation test was performed to determine the relationship between valuation methods (IV) and effectiveness of privatization (DV). The correlation coefficient (r) depicts the relationship between two variables. Results indicate that there is a positive and moderate correlation between variables with ($r = 0.346$) and ($P = 0.017$) at 5% significance level as shown in the Table 13.

		Effectiveness of Privatization	Valuation Methods
Effectiveness of Privatization	Pearson Correlation	1	.346*
	Sig. (2-tailed)		.017
	N	48	47
Valuation methods	Pearson Correlation	.346*	1
	Sig. (2-tailed)	.017	
	N	47	47

Table 13: Correlation between Valuation Methods and Effectiveness of Privatization
*. Correlation Is Moderate at the 0.05 Level (2-Tailed).
Source: Author (2017)

4.5.2. Regression Analysis for Valuation Methods and Effectiveness of Privatization

The study found that valuation methods explained a moderate proportion of variance in the effectiveness of privatization, coefficient of determination (R^2) is equal to 0.120 ($R^2 = 0.120$). This implies that 12% of the proportion in effectiveness of privatization can be explained by valuation methods in hospitals. Other factors not covered by this study, therefore, contribute to 88% which cannot be explained by the model summary.

4.5.3. Simple Regression Model for Valuation Methods and Effectiveness of Privatization

Based on the simple regression model $Y_i = \beta 0_i + \beta_1 X_1 + \varepsilon_i$ and the findings, the model for valuation methods and effectiveness of privatization yielded the following regression equation (see Table 14):
$\hat{Y} = 2.729 + 0.320 X_1 + 0.479$
Y = effectiveness of privatization
X_1 = valuation method
The model implies that for every unit increase in valuation methods, effectiveness of privatization increases by 32% in Kenyan hospitals.

4.5.4. Inferential Statistics T-test for Hypothesis Testing

T-test for population correlation coefficient ρ (rho) and regression slope β_1 (Beta) were performed to depict the relationship between variables to establish the influence of valuation methods on effectiveness of privatization by testing the following hypothesis:
Hypothesis - There is a negative relationship between valuation methods (X) and the effectiveness of
privatization of hospitals through M&A (Y).

H_0:ρ = 0 (there is no correlation between X and Y)
H_A:ρ # 0 (there is a correlation between X and Y)
H_0:β_1 = 0 (X or predictor value is not useful for predicting Y or the slope is zero)
$H_{A:1}$# 0 (X or predictor value is useful for predicting Y or the slope is not zero)

The study indicated that valuation methods moderately predicted effectiveness of privatization since its slopeβ_1 = 0.32(t = 2.476) with a p-value (0.017) which is significant at 5% level. These findings and observed significance and p-value (P<0.05) implied rejection of the null hypothesis (H_0) and acceptance of (H_A). The study, therefore, concluded that valuation methods and effectiveness of privatization are moderately and positively correlated (r = .346) and valuation methods moderately influences the effectiveness of privatization in hospitals. This implies that for every unit increase in evaluation methods, the effectiveness of privatization increases by 32% in Kenyan hospitals.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.729	.479		5.692	.000
	Valuation methods	.320	.129	.346	2.476	.017

Table 14: Coefficients for Valuation Methods
a. Dependent Variable: Effectiveness of Privatization
Source: Author (2017)

4.5.5. ANOVA Test for Significance of the Regression Model for Valuation Methods and Effectiveness of Privatization

The study found that $F(1, 45) = 6.132$ with a p-value = 0.017 which is significant at 5% level as shown in Table 4.37. Therefore, we can conclude that the model was reliable in predicting the relationship between these variables, and valuation methods influence effectiveness of privatization.

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.324	1	3.324	6.132	.017b
	Residual	24.395	45	.542		
	Total	27.719	46			

Table 15: ANOVA Test for Regression Model of Valuation Methods and Effectiveness of Privatization
a. Dependent Variable: Effectiveness of Privatization
b. Predictors: (Constant), Valuation Methods Source: Author (2017)

4.5.5.1. One Way ANOVA between Education Background and Valuation Methods

The next test was a one-way ANOVA to establish if there was significant difference between the mean of valuation methods selected with the educational background of participants. The purpose was to determine if there was greater variability in the rating between groups and within groups concerning valuation methods. The test established that the means for valuation methods were the same for the education level of participants, $F(3, 42) = 0.889$, $P = 0.455$ as shown in Table 16.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.884	3	.628	.889	.455
Within Groups	29.665	42	.706		
Total	31.549	45			

Table 16: One Way ANOVA between Education Background and Valuation Methods
Source: Author (2017)

5. Summaries, Discussion, Conclusion and Recommendation

5.1. Effect of Valuation Methods on Effectiveness of Privatization of Hospitals through M&A

During the exploratory phase, focus group and in-depth interviews, it was determined that knowledge of valuation among participants was limited. Analysis of collected data showed that ninety six percent (96%) of participants stated that they understood the meaning of valuation which is receiving FMV for assets, sixty five percent (65%) of respondents expressed an understanding of what free cash flow is and were familiar with financing by commercial and equity firms.

The major finding was that majority of participants were uncertain about valuation methods. Only thirty seven percent (37%) were familiar with indirect and direct valuation methods and understanding of these methods ranged between thirty nine percent (39%) and forty three percent (43 %) among participants. Only forty three percent (43%) of participants knew about the proper discount rate that should be used for valuation and forty four percent (44%) understood what WACC is. Forty eight percent (48%) of participants stated that they knew how valuation is done during M&A and only thirty seven percent (37%) knew whom to contact to assist them with determining FMV during M&A. They stated that they would rely on equity firms to determine FMV.

Twenty three percent (23%) of participants preferred DCF method for valuation and forty four percent (44%) preferred market approach. Participants did not have a good understanding concerning appropriate timeframe for projection of free cash flow which is crucial for valuation. Their knowledge on this topic ranged between eight percent (8%) and thirty two percent (32%). These findings are contrary to results of empirical studies.

Baker, Miller and Ramspeger (1981) affirm that firms use the DCF method to determine FMV. A study by Mohan *et al.* (1991) argue that managers considered DCF method and market value to determine FMV. Bruner *et al.* (1998) determined that DCF was the dominant method and WACC was used as discount rate. A study by Peterson, Plenborg and Scholer (2006) concluded that DCF was the dominant method in Denmark. In a study conducted by Vydrvel and Soukupova (2012) in the Czech Republic they found that DCF method was used eighty nine percent (89%) of time and it was the second choice after market multiple. Free cash flow was used eighty eight percent (88%) of the time for valuation, the length of forecast for FCF was five years, CAPM was used to determine cost of equity and ten-year Treasury bond was used fifty percent (50%) of the time to determine the risk-free rate to calculate WACC. According to Borda and Saudagaran (1994), KPMG used DCF method to valuate Danubius Hotel and Spa chain in Hungary. In a study conducted by Mukherjee, Kiymaz and Baker (2004) forty nine percent (49%) of CFOs of companies involved in M&A used DCF for valuation in conjunction with market multiple method. Fernandez (2013) argues that DCF should be used for valuation since it is the only conceptually correct method and suitable discount rate should be determined for each type of cash generated, taking risk to account for discount rate. Collan and Kinnunen (2011) investigated how to perform rapid pre-acquisition screening of the target with the focus that total value of an acquisition target is cash flow.

Analysis of collected data from participants indicated that there was a moderate and positive correlation ($r = 0.346$) between valuation methods (X) and effectiveness of privatization of hospitals (Y). Regression model was determined to be reliable and for every unit increase of valuation methods, effectiveness of privatization would increase by thirty two percent (32%). The findings and t-test also confirmed that there was a positive relation between valuation methods (X) and effectiveness of privatization (Y).

Another notable finding was that only twenty three percent (23%) of participants were knowledgeable about the appropriate method for valuation of public and private NFP hospitals which is different from the results of empirical studies. A study conducted by Bruner *et al.* (1998) which included companies, financial advisors and leading financial textbook publishers determined that DCF is considered as the dominant investment valuation method and WACC as the dominant discount rate. According to Kominski (2001) asset-based analyses (book value, replacement value and liquidation value), comparable market analyses (trading and transaction multiples, comparable acquisitions) and income or cash flow are appropriate methods to value NFP organizations. A study by Ernst Young (2013) in Australia recommended market approach, income approach and cost approach (current replacement cost) according to Australian accounting standard (AASBB) for determining the value of NFP organization such as hospitals.

Since empirical studies identify DCF as a reliable method of valuation, familiarity with new approaches such as fuzzy discounted cash flow model (Yao *et al.* 2005) and discounted cash flow version 2 (Gelinas, 2013) is important for leaders considering M&A.

We can conclude that the best method for valuation of NFP hospitals in Kenya is DCF or replacement cost since there is not sufficient data for comparison. The findings of this section also indicate that understanding of valuation and appropriate methods is scarce among the leadership of hospitals in Kenya.

5.2. Conclusions

5.2.1. Effect of Valuation Methods on Effectiveness of Privatization of Hospitals through M&A

The study explored the relationship between valuation methods and their impact on effectiveness of privatization. The results of the study showed that there was a moderate and positive relationship between these two variables. The findings also indicate that majority of respondents understand the meaning of FMV. However, they do not understand the valuation methods (direct, indirect), DCF, WACC, duration of projection of DCF and how to determine the risk-free rate. Respondents stated that they would rely on equity firms to determine FMV.

The conclusion is that knowledge of valuation methods among top leadership is insufficient to effectively participate in privatization and M&A activities and this might explain the moderate relation between these two variables. The results of one-way ANOVA test determined that there was no difference among participants' education background and understanding of valuation methods.

5.3. Suggestions for Further Research and Recommendations

A study conducted by Ellis, Lamont, Reus and Faifman (2015) reviewed 30 papers related to M&A in Africa. Majority of these papers were related to banking and there was none addressing M&A in the healthcare industry in Africa. Therefore, further research in this area is justified and it is recommended to study hospital leadership's knowledge of valuation and use of preferred approach / method for conversion of public and NFP hospitals to private for-profit hospitals.

This study should be repeated in other East African countries to understand if this determinant of effectiveness of privatization is valid in other countries such as Tanzania and Uganda. South Africa will be a good place to conduct further research since its market is more mature and there are at least three FP health systems. The aforementioned suggested studies will enable researchers and practitioners to identify potential differences in these countries and conduct comparative analysis.

These further studies can contribute to understanding of privatization and M&A process of hospitals in Africa and it is important since this research revealed that there is insufficient knowledge concerning privatization and M&A of hospitals and relevant literature concerning this topic is scarce in Africa.

Universities should offer a course regarding the process of privatization of public institutions/hospitals to benefit leadership of these organizations, policy makers, and government officials. Government must develop a clear definition of property rights, relevant laws, regulations and antitrust statutes to facilitate privatization process and use of the proceeds for setting up of conversion foundations.

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Appendix

Appendix 1: Graphic Distribution of Responses to Demographic Section
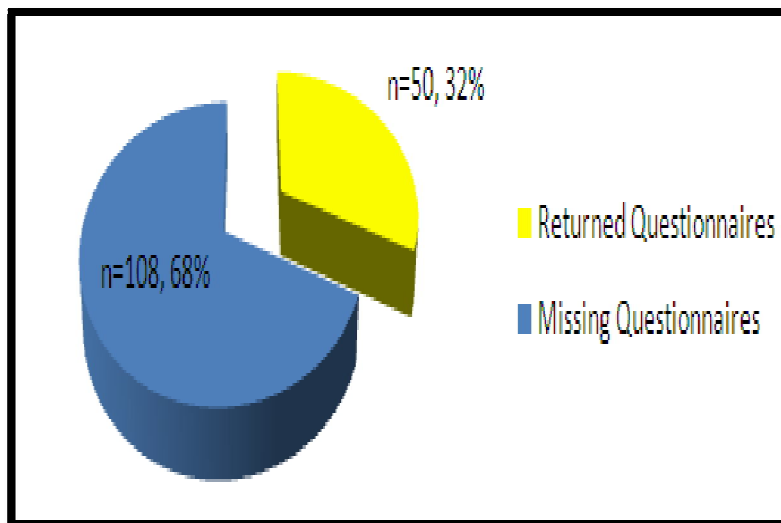
Figure 2: Response Rate to Self-Administered Questionnaire
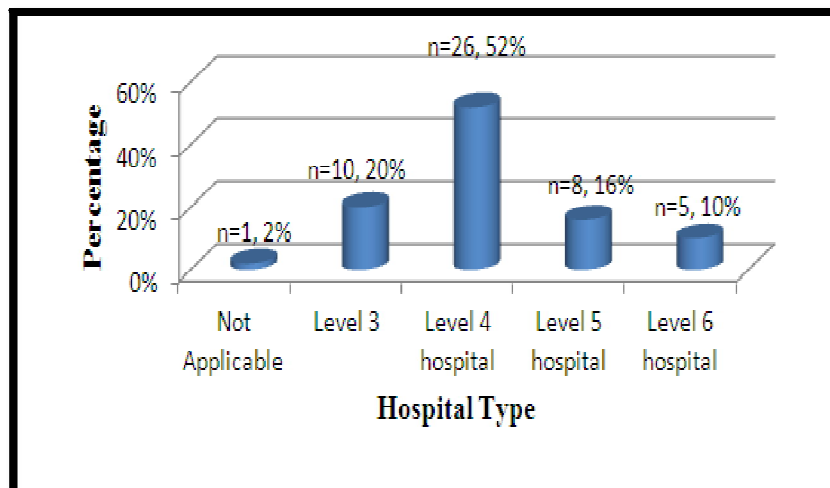*Source: Author (2017)*

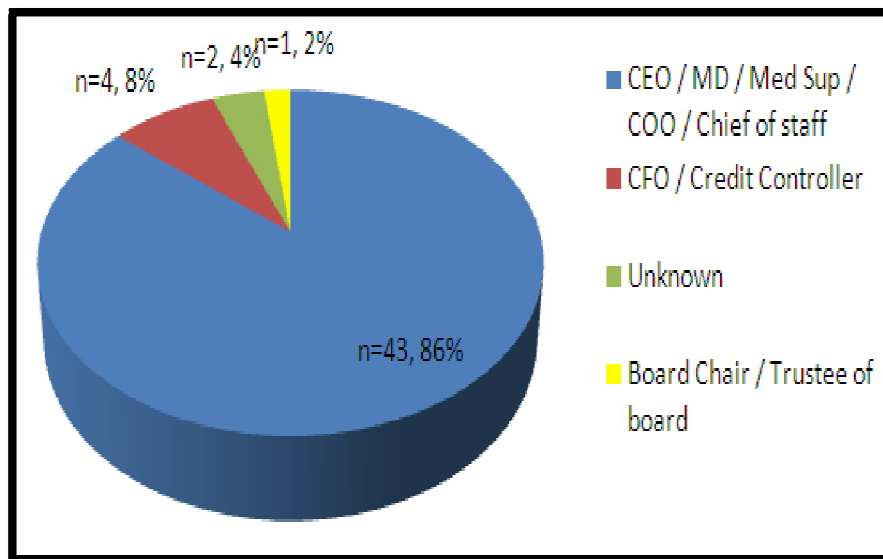*Figure 3: Type of Hospital Studied*
Source: Author (2017)

Figure 3: Position of Respondents in Hospital
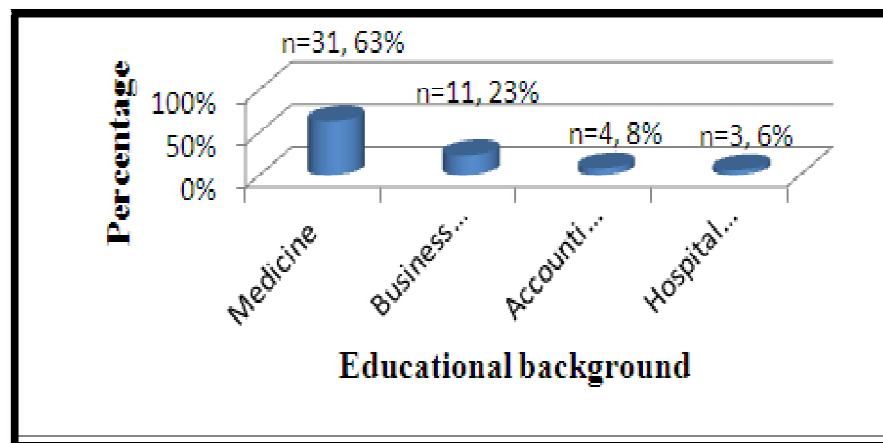*Source: Author (2017)*

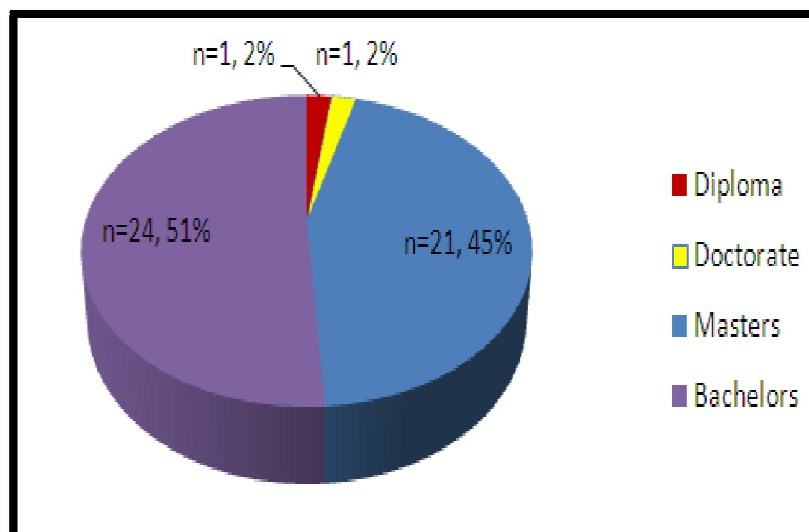*Figure 4: Education Background*
Source: Author (2017)

Figure 5: Level of Education Obtained
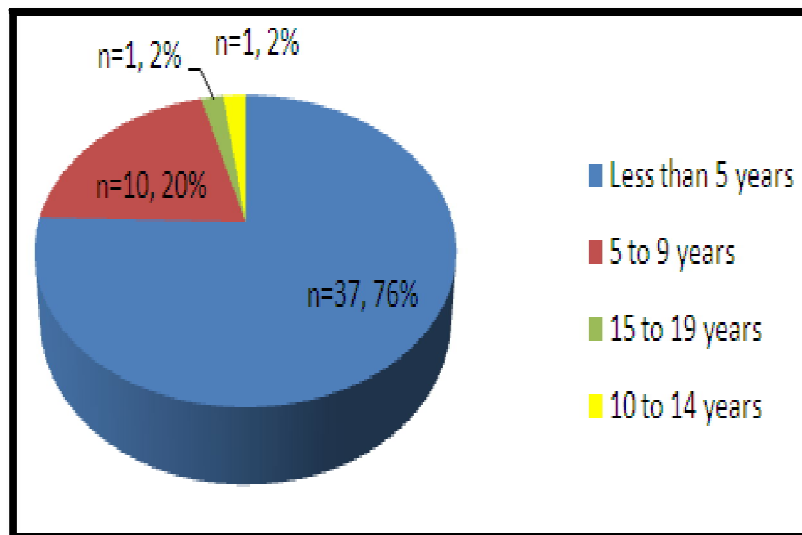*Source: Author (2017)*

Figure 6: Length of Service with the Organization
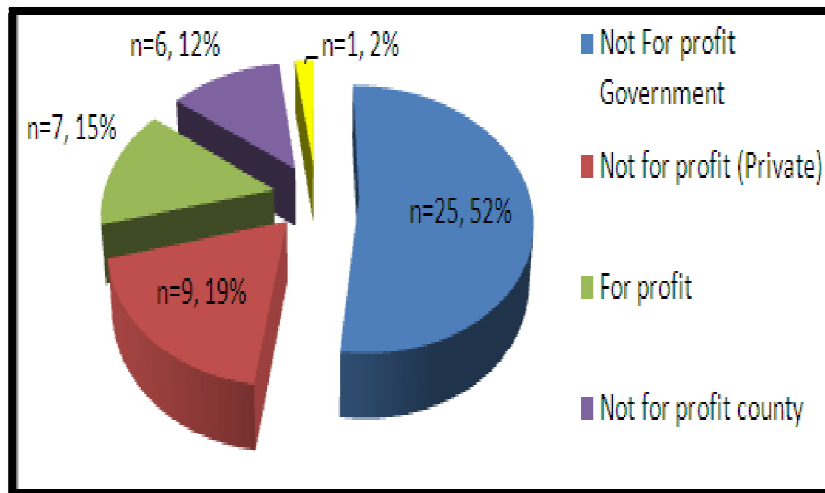*Source: Author (2017)*

Figure 7: Legal Form of Hospitals
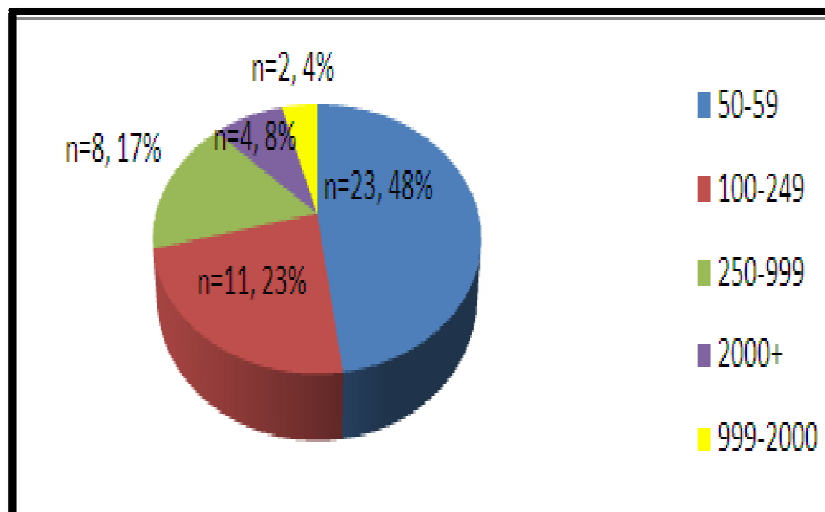*Source: Author (2017)*

Figure 8: Staff Size of Hospitals
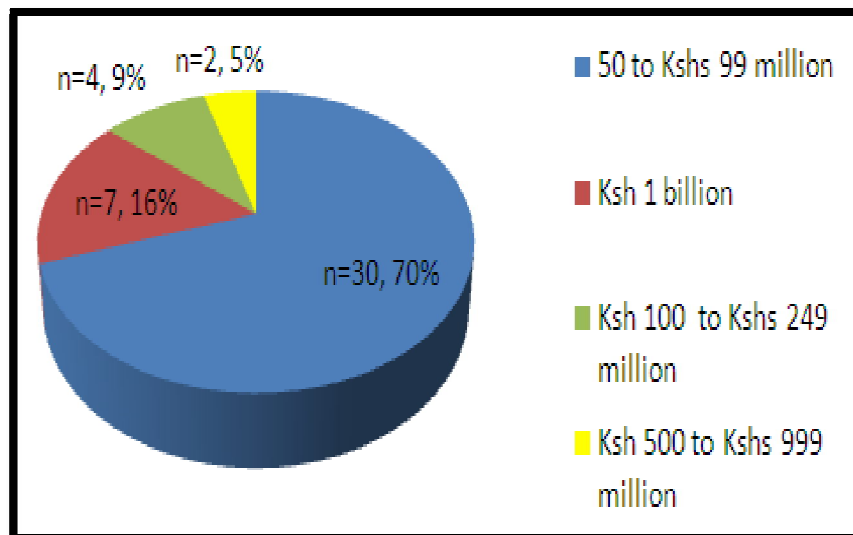*Source: Author (2017)*

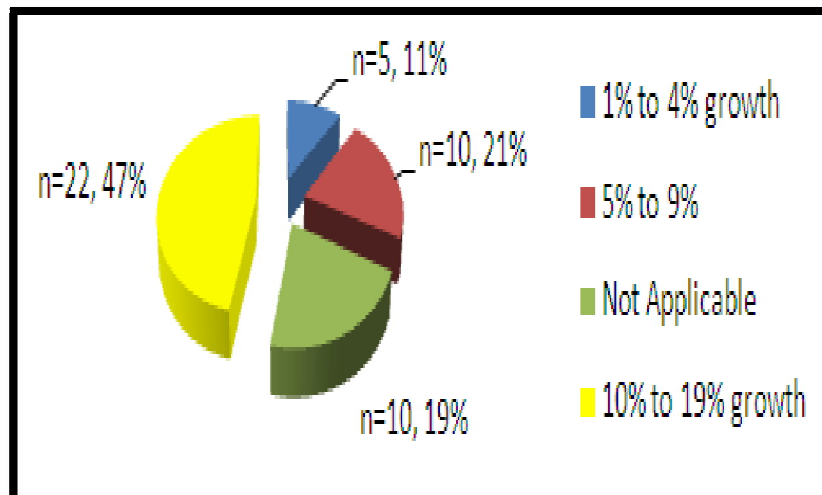*Figure 9: Net Revenue of Hospitals*
Source: Author (2017)

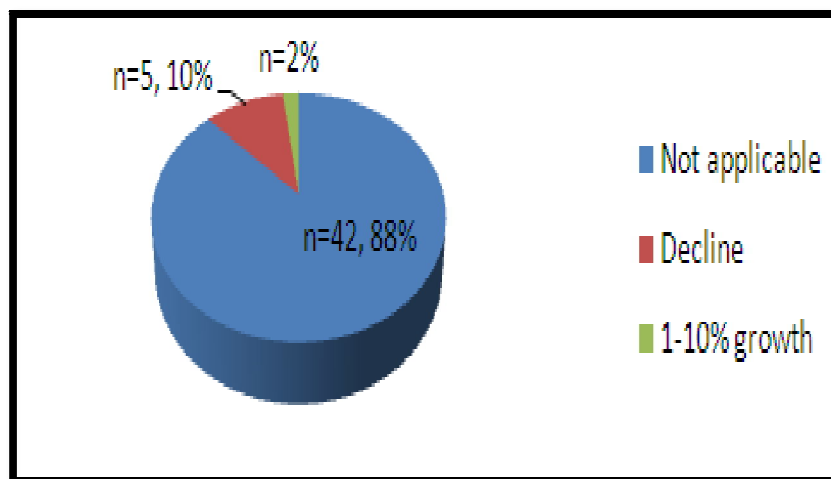*Figure 10: Hospital Growth in Revenue*
Source: Author (2017)

Figure 11: Hospital Decline in Revenue Growth
Source: Author (2017)

Appendix 2: Descriptive Findings for Valuation Methods in Descending Order

Ques No	Valuation methods	Strongly Disagree		Disagree		Uncertain		Agree		Strongly Agree		Mean	Std. Dev
1	Valuation is the method of quantifying how much money something should be exchanged for today	1	2.1%	0	0.0%	1	2.1%	37	78.7%	8	17.0%	4.09	.620
2	I understand the meaning of free cash flow	2	4.2%	3	6.2%	13	27.1%	23	47.9%	7	14.6%	3.63	.959
3	I am familiar with the following financing methods of privatization mergers and acquisitions in healthcare: Equity firm	2	4.3%	4	8.5%	11	23.4%	25	53.2%	5	10.6%	3.57	.950
4	I am familiar with the following financing methods of privatization mergers and acquisitions in healthcare: Venture capitalist	2	4.2%	4	8.3%	14	29.2%	22	45.8%	6	12.5%	3.54	.967
5	I am familiar with the following financing methods of privatization mergers and acquisitions in healthcare: Commercial Institution	3	6.2%	4	8.3%	13	27.1%	22	45.8%	6	12.5%	3.50	1.031
6	The best method for valuation of public hospitals, not-for-profit hospital to determine its fair market value is (please select all applicable ones). Cost approach	1	2.1%	4	8.5%	22	46.8%	15	31.9%	5	10.6%	3.40	.876
7	I will share financial information with potential partners for M&A for due diligence	3	6.2%	6	12.5%	10	20.8%	28	58.3%	1	2.1%	3.38	.959
8	The most appropriate time frame for projection of free cash flow is: 5 Years	0	0.0%	2	4.4%	28	62.2%	12	26.7%	3	6.7%	3.36	.679
9	The best method for valuation of public hospitals, not-for-profit hospital to determine its fair market value is (please select all applicable ones). Income approach	2	4.3%	6	12.8%	20	42.6%	16	34.0%	3	6.4%	3.26	.920
10	The most appropriate time frame for projection of free cash flow is: 7 to 10 Years	0	0.0%	4	8.7%	29	63.0%	11	23.9%	2	4.3%	3.24	.673
11	I am familiar with the following valuation methods/models: Direct methods	3	6.2%	8	16.7%	17	35.4%	17	35.4%	3	6.2%	3.19	1.003
12	I understand direct valuation method	4	8.3%	9	18.8%	14	29.2%	16	33.3%	5	10.4%	3.19	1.123

Ques No	Valuation methods	Strongly Disagree		Disagree		Uncertain		Agree		Strongly Agree		Mean	Std. Dev
13	I know what discounted rate should be used in valuation of a firm when using discounted cash flow	5	10.4%	6	12.5%	16	33.3%	17	35.4%	4	8.3%	3.19	1.104
14	I know how the weighted average cost of capital (WACC) is calculated	8	17.0%	4	8.5%	14	29.8%	14	29.8%	7	14.9%	3.17	1.291
15	DCF is the preferred method of valuation method in less developed market for determining fair market value for privatization of public hospital through mergers and acquisitions	1	2.3%	4	9.3%	28	65.1%	7	16.3%	3	7.0%	3.16	.785
16	I am familiar with the following valuation methods/models: Indirect methods	3	6.2%	9	18.8%	18	37.5%	15	31.2%	3	6.2%	3.12	1.003
17	I understand indirect valuation method	4	8.3%	11	22.9%	14	29.2%	15	31.2%	4	8.3%	3.08	1.108
18	I know whom to engage to perform the valuation in case of considering mergers and acquisitions	4	8.3%	12	25.0%	14	29.2%	15	31.2%	3	6.2%	3.02	1.082
19	I rely on equity firm to determine the fair market value	1	2.1%	14	29.2%	20	41.7%	13	27.1%	0	0.0%	2.94	.810
20	I do not know how a company is valued during mergers and acquisitions	4	8.3%	19	39.6%	11	22.9%	12	25.0%	2	4.2%	2.77	1.057
21	The most appropriate time frame for projection of free cash flow is: More than 10 Years	3	7.0%	7	16.3%	30	69.8%	3	7.0%	0	0.0%	2.77	.684
22	The most appropriate time frame for projection of free cash flow is: 1 Year	5	11.1%	8	17.8%	28	62.2%	2	4.4%	2	4.4%	2.73	.889
23	I will sell my share to a buyer as long as the price is more than my initial investment	5	10.4%	21	43.8%	12	25.0%	9	18.8%	1	2.1%	2.58	.986

Table 17: Descriptive Findings for Valuation Methods in Descending Order
Source: Author (2017)