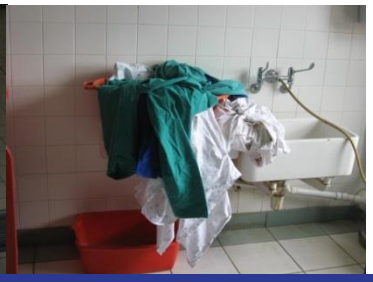

COST-BENEFIT ANALYSIS OF OUTSOURCING CLEANING SERVICES AT MAHALAPYE HOSPITAL, BOTSWANA

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COST-BENEFIT ANALYSIS OF OUTSOURCING CLEANING SERVICES AT MAHALAPYE HOSPITAL, BOTSWANA

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ACRONYMS

BWP	Botswana pula
GoB	Government of Botswana
HFG	Health Finance and Governance project
MoH	Ministry of Health
NPV	Net Present Value
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

Introduction

The Government of Botswana (GoB) is currently implementing a long-term strategy to diversify the economy, create opportunities for growth in the private sector, and increase the efficiency of the public sector. Outsourcing service delivery is one of four main approaches to privatisation outlined in the GoB's policies, and the Ministry of Health (MoH) has been a leader in the privatisation policy by initiating outsourcing of nonclinical services at seven regional and district hospitals. Without complete data on the costs of services, hospital managers have been signing outsourcing contracts without knowing whether outsourcing offers better value for money than the current 'insourcing' system, in which hospitals provide the nonclinical services in-house.

The Health Finance and Governance (HFG) project, with support from the United States Agency for International Development (USAID), was tasked with exploring the costs and cost drivers of providing nonclinical support services at health facilities in Botswana to assist the MoH with planning, managing, and implementing its outsourcing strategy and programme. Based on a cost-benefit analysis of cleaning services at Mahalapye General Hospital, and observations from outsourcing in six other hospitals in Botswana, this report analyses the costs and benefits of outsourcing nonclinical services, and provides Batswana health authorities and managers with best practices and recommendations for determining whether they should outsource and at what price.

Methodology

This analysis presents the findings from a retrospective cost-benefit analysis of outsourcing cleaning services at Mahalapye General Hospital. The analysis takes the hospital manager's perspective when calculating costs and benefits of two alternatives: outsourcing, and 'insourcing', or providing services in-house. The analysis employs an 'ingredients' costing approach, and monetises the benefits of outsourcing by weighting the costs of the two alternatives by a 'quality factor' derived from a service quality survey, in which hospital managers rated the observed quality of cleaning services before and after outsourcing.

Results and Sensitivity Analysis

Cost-benefit, value for money and 'hospital cleanliness per pula spent'

We estimated that outsourcing services, compared to the status quo, would result in approximately Botswana Pula (BWP) 5 million ($524,135) in additional hospital expenditures over a five-year period. However, after taking into account improvements in quality, the cost-benefit ratio favors the outsourcing alternative. We estimated that for every dollar paid to private cleaning services, more than five cents would be returned per square metre of hospital floor cleaned. This represents aggregated net gains for Mahalapye Hospital of approximately BWP 1.7 million ($182,365) over a five-year period. Therefore, our findings suggest that outsourcing cleaning services at Mahalapye Hospital provides greater value for money, in terms of 'cleanliness per pula spent,' than providing cleaning services in-house.

A sensitivity analysis shows that varying the assumptions made regarding the costs of operations, training, and management of outsourcing cleaning services, and varying the discount rate, have a minimal

impact on the results. Outsourcing cleaning services delivered greater value for money than insourcing under all scenarios tested. The cost of the contract and the management's rating of the quality of the service have the greatest impact on the value for money of outsourcing cleaning services at Mahalapye Hospital.

Discussion

The findings from this study are specific to cleaning services in Mahalapye Hospital, and should not be generalised to other services or to other hospitals. However, based on this cost-benefit analysis and the experiences of the seven public hospitals that have outsourced services, this study highlights the following lessons for hospital managers currently outsourcing or considering outsourcing in the future.

1. **Assessing the value of outsourcing and making informed decisions requires detailed information on the status quo.**

   To engage in informed contract negotiations with vendors and analyse the value of outsourcing, hospital managers need to collect accurate data on staff salaries, benefits, and time worked; the unit price and rate of consumption of supplies; the unit price, age, and maintenance costs of equipment; the personnel costs of training facilitators and participants; the personnel costs of management; and the unit price and amount of utilities consumed by the service to be outsourced. It is also vital for managers to collect data on the production units of services they wish to outsource, such as the size of the floor area to be cleaned (in square metres) and the quantity of linens to be laundered each month (in kilograms).

2. **Outsourcing can be more costly than insourcing.**

   The annual real financial cost of the contract for outsourcing cleaning services at Mahalapye Hospital (BWP 6.0 million) is approximately BWP 1.1 million more than the annual cost of insourcing (BWP 4.9 million). In addition, the hospital still has to incur costs above and beyond the contract cost to manage the vendor, train cleaners, and provide utilities. Hospitals should consider the costs they will continue to incur after outsourcing when negotiating contracts and evaluating bids. After these costs were included, the annual cost of outsourcing was BWP 1.3 million ($140,000) higher than the annual costs of insourcing.

3. **Benefits are just as important as costs for decision-making.**

   Even if outsourcing is more costly than providing a service in-house, it may still be justified if it delivers a significant increase in the level of quality of the service. If justifying paying more for a better service, however, hospitals must commit to vigorously monitoring the quality of services provided by private vendors, and hold them accountable for the quality of the services. It is also important for hospitals to include in their analysis the intangible benefits of outsourcing, such as improved adherence to guidelines and improved availability of supplies, potential reduction in infections, and opportunities to gain experience with the private sector.

4. **Hospitals and vendors could both gain from closer collaboration.**

   Closer collaboration between hospitals and vendors through sharing of information, joint monitoring of quality, and joint training could lower the costs and increase the benefits of outsourcing. Hospitals could build trust with vendors, and facilitate cooperation on other issues, by sharing information on the current costs of providing the service in-house, and giving the vendors a base price upon which to make their bid. Conducting quality assurance in a collaborative rather than confrontational manner, such as through joint 'walk-abouts', could result in better-quality outcomes. Finally, joint orientation and training sessions, where hospital staff teach infection control practices to the vendor's cleaning staff, could also improve the

quality of services, by transferring knowledge on infection control and other hospital-specific cleaning methods with which vendors have little experience.

5. **The costs and benefits of outsourcing should improve over time.**

   Hospitals should reassess the costs and benefits of outsourcing periodically, as they are likely to improve as vendors and hospital managers gain experience with the outsourcing process. Costs may decrease as vendors increase efficiency and hospitals improve their ability to negotiate lower contract prices, while benefits may increase as vendors improve the quality of their services and hospitals increase their capacity to enforce adherence to quality standards.

In conclusion, this analysis found that outsourcing is more costly; however, the expense is warranted by improvements in quality of cleaning. Going forward, hospitals should collect more-detailed information on the costs of providing nonclinical services in-house, the units of production of services to be outsourced, and the monetary value of increased quality of outsourced services, in order to fully inform their decisions regarding the outsourcing process.

1. INTRODUCTION

1.1 Background and Context

Botswana has experienced rapid economic growth in the decades since its independence in 1966, and is now classified as an upper-middle-income country, with a gross domestic product per capita of just under 16,000 U.S. dollars in 2014 (International Monetary Fund 2014). This period of economic growth was primarily driven by the public sector, and was financed by a steady source of diamond revenues. As a result, the private sector in Botswana remained small, while the government grew to become the country's leading employer.

Given the recent volatility of Botswana's two main domestic sources of revenue, diamonds and cattle, the Government of Botswana (GoB) is currently implementing a long-term strategy to diversify the economy, create opportunities for growth in the private sector, and increase the efficiency of the public sector. Outsourcing service delivery is one of four main approaches to privatisation outlined in GoB policies. Outsourcing involves the 'transfer of provision of services to the private sector with government retaining responsibility for ensuring the quality of the services and the efficiency with which the services are being delivered' (Ministry of Finance and Development Planning 2005). Botswana's privatisation strategy is based on the premise that outsourcing the delivery of certain public services to the private sector would result in better services for a lower cost.

In the context of limited resources, the Ministry of Health (MoH) is participating in GoB's privatisation strategy by taking steps to outsource some nonclinical services in its hospitals. The first areas that the ministry has targeted for outsourcing are services deemed to have low supply risk and low financial impact. These include laundry, catering services, cleaning, porter and grounds-maintenance services, and security services. Seven MoH hospitals around the country have already begun outsourcing, and others are considering outsourcing in the near future.

A thorough analysis of the outsourcing initiative among the seven hospitals (Cogswell et al. 2015) and a baseline costing of 'insourced' services (Stegman et al. 2015) are documented elsewhere. However, a key finding from Botswana's experiment with outsourcing is that hospital managers considering outsourcing lack the information needed to decide whether they should outsource, and how they should go about negotiating contracts with private vendors. This information includes:

i. The cost and quality of nonclinical services currently provided in-house by public hospitals
ii. The expected unit cost of outsourcing services
iii. The estimated difference between the quality of outsourced services and the quality of the same services provided in-house

In light of these data gaps, hospital managers have been signing outsourcing contracts without knowing whether outsourcing offers better value for money than the current insourcing system, in which hospitals provide the nonclinical services in-house.

The Health Finance and Governance (HFG) project, with support from the United States Agency for International Development (USAID), was tasked with exploring the costs and cost drivers of providing nonclinical support services at health facilities in Botswana, to assist the MoH with planning, managing, and implementing its outsourcing strategy and programme. This report analyses the costs and benefits of outsourcing nonclinical services, and provides Batswana health authorities and managers with best

practices and recommendations for obtaining the information needed to decide whether they should outsource nonclinical services, and at what price.

1.2 Objective

The objective of this study is twofold.

First, this study presents a method for conducting a cost-benefit analysis of outsourcing nonclinical services using (1) a benchmark cost of insourcing the service, (2) the cost of outsourcing the service to a private vendor, and (3) qualitative service quality assessments and stakeholder interviews to determine a 'benefit' metric for changes in quality perceived by hospital management and clinical staff.

Second, based on the findings of a cost-benefit analysis of cleaning services at Mahalapye Hospital and additional analysis from the seven hospitals that have initiated outsourcing of nonclinical services, this study highlights important lessons that may assist hospital administrators in navigating the outsourcing process. These lessons include recommendations and best practices for identifying the data needed to effectively evaluate a contract, for weighing the costs and benefits of outsourcing, and for working with vendors to reduce the price and improve the quality of outsourced services

1.3 Structure of This Report

The next section (Section 2) of the report outlines the methods used to conduct the cost-benefit analysis of cleaning services at Mahalapye General Hospital. Section 3 contains the results of the Mahalapye cleaning service cost-benefit analysis. Section 4 presents a sensitivity analysis that demonstrates the effects, on the cost-benefit results, of varying the assumptions and inputs of the analysis. Finally, the discussion section (Section 5) provides recommendations and best practices for hospital managers who are considering outsourcing or are currently engaged in the outsourcing process and concludes the report.

2. METHODOLOGY

This analysis demonstrates the proposed method of analysing the value for money of outsourcing, by presenting the findings from a cost-benefit analysis of cleaning services at Mahalapye General Hospital, a hospital that recently outsourced cleaning, security, and laundry services to private vendors.

Mahalapye Hospital was selected as the case study for this cost-benefit analysis because it only recently began outsourcing cleaning, laundry, and security services, and HFG was therefore able to collect costing information for both insourcing and outsourcing these services. This study selected cleaning services for the analysis because the data available on the costs and production units of cleaning were the most thorough of all data on the outsourced services at Mahalapye Hospital.

2.1 Policy Alternatives and Assumptions

2.1.1 Alternative 1: Outsourcing Cleaning Services at Mahalapye Hospital

Mahalapye Hospital is a modern 260-bed public district hospital located in the Central District of Botswana. Built in 2008, it has an annual operating budget of approximately Botswana pula (BWP) 24 million ($2.6 million), and a floor space of 28,461 square metres, and admits about 8,178 inpatients per year. The hospital began outsourcing security services in 2011, and laundry and cleaning services in April and May of 2014 respectively.

Cleaning services were outsourced to a private Batswana vendor through a three-year contract valued at BWP 18 million ($1.93 million). Under the outsourcing contract, the vendor provides cleaning staff and all equipment and supplies needed to clean the hospital's floors, windows, walls, doors, ceilings, equipment, and furnishings, and to remove trash. The vendor mixes and stores all hazardous chemicals at its central storeroom. Hospital management oversees the vendor's work and monitors its performance, but is no longer responsible for directly managing the cleaning staff.

A review of the literature reveals that the main motivations for contracting out cleaning services include reducing the unit cost of cleaning, and improving the quality of cleaning (Liu et al. 2004, Loevinsohn and Harding 2005, Siddiqi et al. 2006). In theory, specialised managers in the private sector would be able to reduce costs and introduce new technologies and methods for delivering services. Competition for tenders among private vendors would also drive down the cost of the service and encourage increases in efficiency (Mills and Broomberg 1998). Finally, economies of scale would allow private vendors to deliver services at lower costs than hospitals (Siddiqi et al. 2006, Mills 1998). Nevertheless, the literature on outsourcing is divided. Existing studies have not reached a consensus on the effect of contracting out on costs, quality, or efficiency.

2.1.2 Alternative 2: Status Quo Insourcing

Before outsourcing cleaning services, Mahalapye Hospital employed and trained its own cleaning staff, purchased supplies, maintained the necessary equipment, and managed the cleaning process in-house. According to a costing benchmark study completed by HFG, the hospital employed 75 cleaners and orderlies, purchased supplies such as soap, toilet paper, garbage bags, and cleaning chemicals, and maintained vacuums, mops, a polishing machine, and other equipment. The hospital cleaning staff

were responsible for cleaning and maintaining the same areas that are currently covered by the outsourcing contract.

In an interview of Mahalapye Hospital management, respondents indicated that, when the hospital was insourcing cleaning, cleaning staff were well trained, but their number was insufficient to clean the hospital to the management's standards. The staffing shortage interfered with the cleaners' ability to adhere to standard hospital operating procedures, adhere to cleaning schedules, maintain a proper store of cleaning supplies, and provide timely management reports on inventory supply, cost, and breakdowns of the equipment. Some of these challenges led the hospital to consider outsourcing to improve the quality and efficiency of cleaning services.

2.1.3 Scope of the Analysis

This analysis takes the hospital manager's perspective when calculating costs and benefits of outsourcing. Therefore, this study is primarily concerned with analysing the value for money that outsourcing delivers to hospital managers, in terms of its impact on hospital budgets and the quality of services provided. Assessing the costs and benefits of outsourcing from the societal perspective would be exceedingly complex and is beyond the scope of this study.

The analysis period of this study is five years, which should allow the study to capture benefits from outsourcing that may accrue in the medium term, such as improvements of the quality of cleaning. Any costs or benefits that do not appear until after five years are not likely to be relevant for the short-term financial planning of hospital managers, the main audience for this study. This analysis assumes that real costs, such as the cost of personnel, equipment, supplies, and utilities, remain constant throughout the five-year analysis period.

This analysis discounts both the costs and benefits of outsourcing to account for the opportunity costs of money. Discounting is a standard practice in cost-benefit analyses, and acknowledges the fact that people or institutions always have the option of investing their money to receive a future return rather than using it to implement the project being evaluated. Applying a social discount rate allows the analysis to convert all monetary values to their Net Present Value (NPV), which assigns a greater value to costs incurred and benefits received in the present, and a lower value to costs incurred and benefits received in the future. A 10 percent discount rate was selected for this evaluation based on a review of the use of discount rates conducted by the Asian Development Bank (2013). According to this review, the World Bank and African Development Bank use a discount rate of 10-12 percent for cost-benefit analyses of projects implemented in their member countries.

2.2 Costs

2.2.1 Collecting Costing Data

The costing data for this analysis come from two sources. Data on insourcing costs were collected by HFG's benchmarking study for nonclinical services in a selection of five of Botswana's public hospitals (Stegman et al. 2015). The HFG team developed an Excel-based 'Auxiliary Services Costing Tool' for collecting costing data for the benchmarking study. The tool organises data into indirect and direct costs for each service, and includes subsections for inputting personnel costs, consumable costs and quantities, equipment costs, and the costs of training, vehicles, management, and operations. Data collectors hired and trained by HFG visited Mahalapye Hospital for five days in October 2014 to collect data from key stakeholders. A list of missing data was shared with the MoH's Office of Strategy Management at the end of the data collection period. The MoH was not able to find much of the missing data, so HFG's in-country technical contributor sought additional information, sourced commercial equivalent costs,

and made assumptions based on the data the study was able to derive. A further explanation of the data collection process is available in HFG's report on Benchmarking Costs for Nonclinical Services in Botswana's Public Hospitals (Stegman et al. 2015). Additional assumptions on costing are included in the Costing Methodology section of this study.

Costing data on outsourcing were collected during a visit to Botswana in early 2014. HFG team members surveyed Mr Mompati Buzwani, Chief Economist of the Outsourcing/Public-Private Partnership Unit of the MoH's Office of Strategy Management, to collect basic data on outsourcing contracts signed by Mahalapye Hospital. This data included the value and length of the contracts, the effective dates of the contracts, and the name of the vendors. An initial interview of the hospital management was conducted in January 2014, with a follow-up interview a year later in March 2015. Theses interviews also supplied some information on the contract specifications, the vendors, and the services that were included in the outsourcing contracts.

2.2.2 Costing Methodology

Costing for this analysis was conducted using the 'ingredients' approach, whereby all indirect and direct costs of each alternative were identified and quantified with a monetary value. Since all costing data for this analysis were collected in 2014 BWP, prices are expressed in 2014 constant BWP and 2014 constant United States dollars. All costs were annualised for comparative purposes. The HFG benchmark costing study conducted in 2014-2015 determined the cost breakdown of the status quo insourcing and the outsourcing alternative. The cost breakdowns are presented in Table 1, which shows that, with outsourcing, the contract covers the direct costs that the hospital incurred when it was insourcing. However, there are additional indirect costs that hospitals need to consider when outsourcing. For example, the hospital may need to provide resources to facilitate an infection control training for the company, cover utilities, and cover the salary of a hospital manager who oversees and monitors the vendor's work. These indirect costs are in addition to the contract value.

Table 1: Cost Breakdown of Alternatives

Alternative 1: Outsourcing	Alternative 2: Insourcing
Direct Costs	
Contract cost • Total contract cost • Number of years of contract	Personnel • Salaries • Benefits • Time worked
n.a.	Supplies • Unit price • Amount Consumed
n.a.	Equipment • Unit price or commercial equivalent prices • Depreciation
Indirect Costs	
Training • Cost of personnel facilitating Infection Control Training	Training • Cost of personnel participating in all training • Cost of personnel facilitating all training

Alternative 1: Outsourcing	Alternative 2: Insourcing
Hospital management of vendor • Salaries • Benefit • Time worked	Hospital management of cleaning staff • Salaries • Benefit • Time worked
Operations • Standard unit price of electricity, water, telephones • Utility consumption by cleaning staff	Operations • Standard unit price of electricity, water, telephones • Utility consumption by cleaning staff

n.a. = not applicable.

2.2.2.1 Alternative 1: Outsourcing

The only direct cost of outsourcing is the cost of the contract. For Mahalapye Hospital, the annual cost of the cleaning contract was calculated by dividing the total contract cost (BWP 18,000,000) by the duration of the contract (3 years). The costs of negotiating the contract and managing the procurement process were not included in the analysis, because these costs could not be collected. They are likely offset by intangible benefits of outsourcing that are also not accounted for in this analysis. The benefits of outsourcing are discussed in the next section.

Indirect costs of outsourcing include training, management of the vendor, and operations. HFG's interviews with hospital managers revealed that under outsourcing, the hospital conducted joint infection control training with the vendor. The costs of training were calculated by summing the personnel costs of participants and facilitators for the 'infection prevention and control' training session, which was costed during the HFG benchmark costing study (Stegman et al. 2015). These costs were then divided by two based on the assumption that Mahalapye Hospital and the vendor each covered 50 percent of the costs. This study assumed that the unit cost of training remained the same before and after outsourcing. Training materials and meals were not included in the costs of training before outsourcing or after outsourcing.

According to HFG's interviews of hospital management in 2014 and 2015, the management and oversight of outsourcing includes weekly meetings between the hospital contracts manager and the vendor site manager to review reports and address questions and concerns. Managing outsourcing also requires hospital staff to assess the quality of the vendor's work. The costs of managing outsourcing are unknown, so this analysis estimated costs as being half of the management costs of insourcing. This estimate is based on the assumption that hospital staff managing outsourcing have a similar cost structure to those who had managed the hospital's cleaning staff under insourcing, but that managing the vendor requires only half of the time that was required to manage 46 full-time cleaners and 29 orderlies. This assumption may be conservative; the cost of managing outsourcing is likely less than half of the cost of managing an in-house cleaning staff. Managers interviewed by HFG said that 'the headache of managing the cleaners is gone' when asked about the successes of outsourcing.

Operations costs include electricity, water, and telephones. The hospital was responsible for these costs before and after outsourcing. Because the hospital continues to provide these utilities to the vendor, this analysis assumes that operations costs under outsourcing are the same as they were under insourcing. Electricity costs were collected during the HFG benchmarking study and calculated by multiplying the unit cost of electricity by the estimated annual electrical usage in kilowatts of a floor polishing machine. Water costs were calculated by multiplying the unit cost of water by the estimated volume of water in litres used for mopping, and telephone costs were estimated using the unit cost of

a phone line and the number of lines used by the cleaning department. This study assumes that the outsourced cleaners use the same quantity of utilities as were used during insourcing.

The HFG team also identified several nonfinancial costs of outsourcing. These costs were derived from academic literature and surveys of hospital management and nurses, which are described in detail in the next section. The direct nonfinancial costs of outsourcing include reduced knowledge of infection control practices of cleaners, increased turnover of cleaners, and increased effort for the hospital management for negotiating and overseeing private vendors (Cogswell et al. 2015). A potential negative externality (indirect cost) for hospital managers is damaging relationships with hospital staff and trade unions, which could impact the quality of services that continue to be provided in-house (McPake and Mills 2000). These costs are all intangible, and are therefore not considered in this analysis. However, their effect on the results is likely outweighed by the numerous intangible benefits described in the next section, which are also excluded from the analysis.

2.2.2.2 *Alternative 2: Insourcing*

For insourced cleaning services at Mahalapye Hospital, all costs were collected by the HFG benchmark costing study (Stegman et al. 2015). The direct costs of insourcing include personnel, supplies, and equipment (see Table 1). The costing study calculated personnel costs based on salary and benefit ranges of the 46 full-time cleaners and 29 orderlies employed by the hospital, and the estimated time each staff member dedicated to cleaning. The study calculated the cost of supplies using the hospital's records. The unit price of each consumable was multiplied by the amount used per month, and then annualised. Delivery costs were assumed to already be included in the prices. The lack of an equipment inventory or purchase records complicated the calculation of equipment costs. The costing study estimated equipment costs using the prices of comparable equipment available for sale in South Africa, Europe, or the United States at the time of data collection. The study did not adjust these prices for inflation, because the year of purchase of Mahalapye Hospital's equipment was not known. For the few items for which ages were known, a straight-line depreciation rate (purchase value ÷ the number of years of useful life) was used to calculate the value of the piece of equipment. Maintenance costs were not included in the costing calculations.

The indirect costs of outsourcing of cleaning services included training, management, and operational costs. The costing study calculated training costs using the daily rates of participants and facilitators who had attended a 'Cleaning Policies' or 'Infection Prevention and Control' training in the previous 12 months. The costs of meals and training materials were not included. Management costs were calculated using the salaries and benefits of managers directly involved with overseeing the hospital's cleaning staff, in addition to the percentage of time these managers devoted to supervising cleaning. A chief administration officer and a domestic and laundry officer each devoted one-third of their time to managing the cleaning staff at Mahalapye Hospital. Finally, the methods for calculating operational costs for insourcing were the same as those described above for calculating operational costs of outsourcing. More-detailed information on the costing of the insourcing alternative is available in HFG's benchmark costing study (Stegman et al. 2015).

2.3 Benefits

2.3.1 Collecting Benefits Data

The benefits data used for this study were derived from a structured service quality interview of Mahalapye Hospital management, conducted by the HFG team in March 2015. Hospital management staff who participated in the interview included the hospital superintendent, the hospital manager, the chief administration officer, the nursing superintendent, the chief nursing officer, the assistant domestic

and laundry officer, and the infection control officer. An HFG staff member administered a structured qualitative interview that asked hospital management specific questions about their experiences with service quality before and after outsourcing. In addition to the detailed service quality questions, for each outsourced service area (e.g., cleaning, laundry, and security), managers rated the overall quality of hospital services before and after outsourcing, using a 10-point Likert scale. Their rating was used to quantify the benefits derived from outsourcing, as explained below. For a more detailed description and a copy of the structured interview questions, refer to the report Experiences in Outsourcing Nonclinical Services among Public Hospitals in Botswana (Cogswell et al. 2015).

In addition, the HFG team distributed an anonymous survey to 30 nurses working in Mahalapye Hospital in March 2015. A convenience sample was used to select the nurses who were on duty during the day of the HFG staff member's visit. Nurses who received the survey were those who had been working at the hospital since before services were outsourced, so that they were able to compare service quality pre- and post-outsourcing. Fifteen nurses completed the survey; however, one response was excluded from the analysis, as the respondent wasn't aware that the hospital was outsourcing services. The survey contained eight multiple choice questions per service area (e.g., cleaning, laundry, security), and asked respondents to record their perceptions of change in service quality since outsourcing began. These data were used to verify the managers' responses and inform the analysis presented in this report. Refer to the report by Cogswell et al. (2015) for a copy of the survey distributed to nursing staff.

2.3.2 Benefits Methodology

The benefits from outsourcing are more difficult to quantify than the costs. As mentioned above, this study takes the perspective of the management of Mahalapye Hospital, and therefore considers only those benefits that directly or indirectly accrue to those managers. To identify the benefits of outsourcing, the HFG team consulted relevant academic literature, responses from the service quality interview of Mahalapye Hospital managers, and responses from the nursing survey discussed above. The team determined that the direct benefits from outsourcing cleaning services include cost savings for the hospital management in some areas such as personnel, supplies, equipment, training, and management (because the hospital no longer directly bears these costs), and overall better quality of cleaning services. Other benefits identified include reduced time and effort managing cleaning staff, improved adherence to the hospital's cleaning guidelines, improved availability of supplies and equipment, safer storage practices for dangerous chemicals, increased likelihood of properly mixing cleaning supplies, increased numbers of cleaning staff, and improved collection and transport of domestic waste (Cogswell et al. 2015).

The indirect benefits of outsourcing cleaning services identified include increased opportunities for the management to gain experience working with the private sector, and the potential reduction in the number of hospital-acquired infections due to improved cleanliness.

Table 2: Benefits of Outsourcing Cleaning at Mahalapye Hospital

	Direct Benefits	Indirect Benefits
Tangible benefits	Cost savings: • Personnel • Supplies • Equipment • Training • Management	
	Overall quality of cleaning	

	Direct Benefits	Indirect Benefits
Intangible benefits	Reduced management effort	Experience working with private sector
	Improved adherence to guidelines	Potential reduction in hospital-acquired infections
	Improved availability of supplies	
	Proper mixing of cleaning supplies	
	Safer storage practices	
	Increased number of cleaning staff	
	Improved waste collection	

2.3.2.1 Quantifying Benefits

The literature on cost-benefit analyses suggests various approaches for monetising qualitative benefits of an intervention. The two most relevant approaches include measuring a consumer's willingness to pay for a theoretical service and calculating the cost avoidance resulting from an intervention (Cellini and Kee 2010, Olsen and Smith 2001). Willingness to pay is a method widely used for placing value on health services and environment conservation (Diener et al. 1998, Klose 1999, Olsen and Smith 2001, Smith 2003, Fang et al. 2011, Israel and Levinson 2004). In the context of this study, estimating willingness to pay would involve asking a large sample of hospital managers for the maximum dollar (or pula) amount they would be willing to pay for a hypothetical increase in the cleanliness of a hospital. The monetary value obtained from this survey would then be tallied as a benefit of outsourcing cleaning services, assuming that outsourcing resulted in an increase in the quality of the service and thus the cleanliness of the hospital.

Measuring *cost avoidance* would entail estimating the monetary value of each of the intangible benefits listed in Table 2 above. For example, one could estimate the reduction of accidents and infections resulting from the improved adherence to guidelines and safer storage practices, and the time savings resulting from improved availability of supplies and increased numbers of cleaning staff. The monetary values of accidents and infections avoided and time saved could then be modelled and included as benefits of outsourcing.

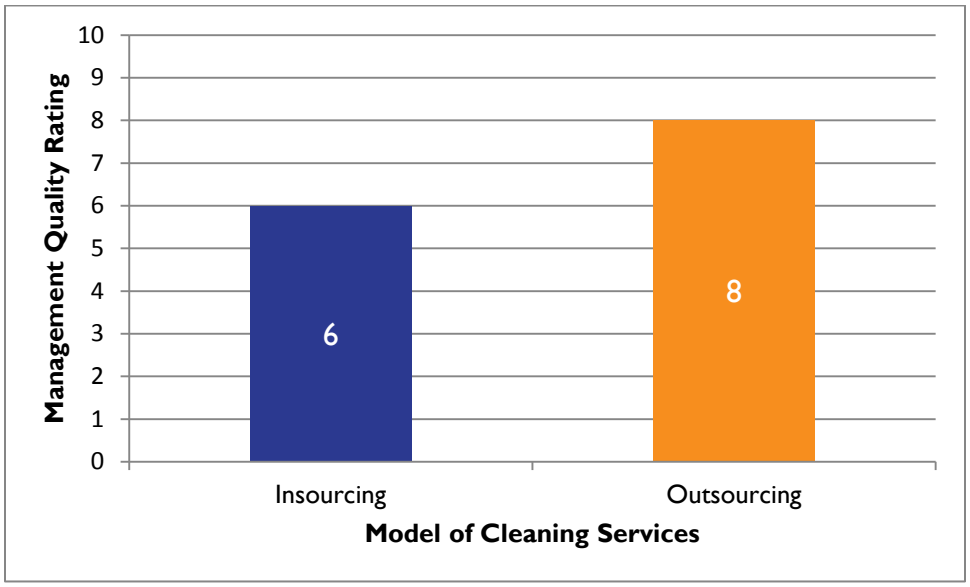
The willingness to pay and cost avoidance approaches discussed here are resource- and time-intensive, and would require the HFG team to make broad assumptions with limited information. Therefore, this study considers only two types of benefits in its analysis: financial cost savings and overall quality of cleaning services. Quantifying the financial cost savings of outsourcing is straightforward. The cost savings for each cost category are equal to the difference between the cost of that category during insourcing and the cost during outsourcing. It is important to note that although the total cost of outsourcing is greater than the total cost of insourcing, outsourcing provides cost savings in each of the individual cost categories. In other words, the cost of the contract is an incremental cost of outsourcing, but outsourcing provides incremental savings in personnel, supplies, equipment, training, and management because the hospital no longer directly bears these costs.

To quantify the differences in quality between outsourcing and insourcing, this analysis weights the costs of each alternative by a 'quality factor' and recalculates the financial cost savings as 'quality-adjusted' cost savings. The logic behind this method is simple; the better the quality of a service, the higher its value. By weighting the costs of the alternatives based on observed quality, the price of lower-quality services is inflated to a greater degree than the price of higher-quality services, to reflect the hidden costs of an inferior service.

To calculate the benefit factor of each alternative, we first had to analyse the responses from the service quality interview of Mahalapye Hospital management and convert those responses to units that could be applied to the cost of the alternatives. We did this by converting the survey responses into an 'underperformance rate', which represents the unrealised potential of a service.

In the surveys, the hospital managers were asked to rate the overall quality of the outsourced service before and after outsourcing, using a Likert scale. The managers rated quality on a scale from 1 to 10, with 1 being the lowest quality and 10 being the highest. Figure 1 shows the Mahalapye Hospital management's ratings of cleaning services under insourcing and outsourcing.

Figure 1: Management Responses to Service Quality Surveys of Cleaning at Mahalapye Hospital



Using this information, we calculated the underperformance rate for cleaning services at Mahalapye Hospital before and after outsourcing, using the following equation:

Underperformance rate = (10 - Likert Scale Rating) * 10

For example, a service that received a rating of 10 out of 10 on the Likert scale is being delivered perfectly and therefore would have an underperformance rate of 0 percent, because it is being delivered at the highest possible quality level.

(10 – 10) * 0 = 0

If a manager rates a service as 4 out of 10 during insourcing, that service's underperformance rate is 60 percent.

(10 – 4) * 10 = 60

Therefore, during insourcing, this service was not realising 60 percent of its quality potential.

In the case of cleaning services at Mahalapye Hospital, the managers rated the overall quality of the service 8 out of 10 on the Likert scale during outsourcing, and 6 out of 10 during insourcing. Therefore, the underperformance rate of outsourcing is 20 percent and the underperformance rate of insourcing is 40 percent (Table 3).

Table 3: Calculating Underperformance Rates of Cleaning Services at Mahalapye Hospital

	Likert Scale Rating	Calculation	Underperformance Rate
Alternative 1: Outsourcing	8	(10-8) * 10	20%
Alternative 2: Insourcing	6	(10-6) * 10	40%

To weight the costs of the policy alternatives based on the quality of the cleaning service provided, we converted the underperformance rate into a weighting factor, which we call the 'quality factor' (see Table 4), using a simple formula:

Quality factor (qf) = 100 ÷ (100 minus the underperformance rate).

Table 4: Calculating Quality Factor of Cleaning Services at Mahalapye Hospital

	Underperformance Rate	Calculation	Quality Factor
Alternative 1: Outsourcing	20%	100 ÷ (100 – 20)	1.25
Alternative 2: Insourcing	40%	100 ÷ (100 – 40)	1.67

We then multiplied the costs of each alternative by their respective quality factors to produce quality-adjusted costs (Table 5). Weighting the costs of the alternatives allows managers to assess the value for money of outsourcing as compared to insourcing, taking into account the superior quality of outsourced services. It is important to note that the quality-adjusted costs do not reflect the real financial costs of the alternatives, but rather serve only the purpose of comparing the value for money of outsourcing and insourcing for this analysis.

Quality-adjusted costs = Costs * Quality Factor

Table 5: Weighting the Costs of the Alternatives by the 'Quality Factor', 2014 BWP

	Unweighted Annual Cost	Quality Factor	Calculation	Quality-Adjusted Costs
Alternative 1: Outsourcing	6,223,919	1.25	6,223,919 * 1.25	7,779,899
Alternative 2: Insourcing	4,936,668	1.67	4,936,668 * 1.67	8,227,780

After calculating the quality-adjusted costs of each of the alternatives, we were able to calculate the quality-adjusted cost savings by subtracting the quality-adjusted costs of outsourcing from the quality-adjusted costs of insourcing.

2.3.3 Limitations

The quantification of the benefits of outsourcing is highly dependent on the results of one collective survey response of Mahalapye's management team, which reported a 20 percent observed increase in quality of cleaning services after outsourcing (from 6 out of 10 before the implementation of outsourcing, to 8 out of 10 after the implementation of outsourcing). Despite this limitation, it is likely that the management team's assessment of the differences in quality of cleaning services during insourcing and outsourcing is accurate. First, the management team is best suited to assess all aspects of the outsourcing experience, including negotiating with the vendor, training cleaning staff, monitoring the cleanliness of all areas of the hospital, and monitoring the incidence of hospital-acquired infections. Second, the management team's assessment of the differences in quality is supported by the survey

responses of 14 nurses at Mahalapye Hospital. In that survey, 69 percent of the nurses responded that the overall quality of cleaning services at the hospital had improved since outsourcing. Third, the Mahalapye managers' assessment of the improved quality of outsourcing services is consistent with observations made at the other hospitals that have already begun outsourcing. HFG's surveys of the management teams at seven hospitals demonstrate that the average improvement of observed quality of cleaning after outsourcing was 27 percent (compared to 20 percent in Mahalapye Hospital). Furthermore, the observed increase in quality from outsourcing was consistent across all services: the quality of security services increased by an average of 22 percent and the quality of laundry services increased by an average of 36 percent. These results are shown in Tables 6 and 7 below.

Table 6: Management Responses to Service Quality Surveys of Cleaning in Seven Hospitals, on 10-point Likert Scale

Hospital	Insourcing	Outsourcing	Change
Mahalapye District Hospital	6	8	+2
Sekgoma Memorial Hospital	5	7.5	+2.5
Letsolathebe II Memorial Hospital	5	8	+3
Nyangabwe Hospital	3	8	+5
Princess Marina	4	7	+3
S'brana Psychiatric Hospital	6	7.5	+1.5
Scottish Livingstone Hospital	5	7	+2

Table 7: Percent Increase in Observed Quality of Three Outsourced Services at Seven Hospitals

	Security	Laundry	Cleaning
Mean increase in observed quality since outsourcing	22%	36%	27%
Median increase in observed quality since outsourcing	20%	35%	25%

3. RESULTS

3.1 Annual Costs of Outsourcing and Insourcing

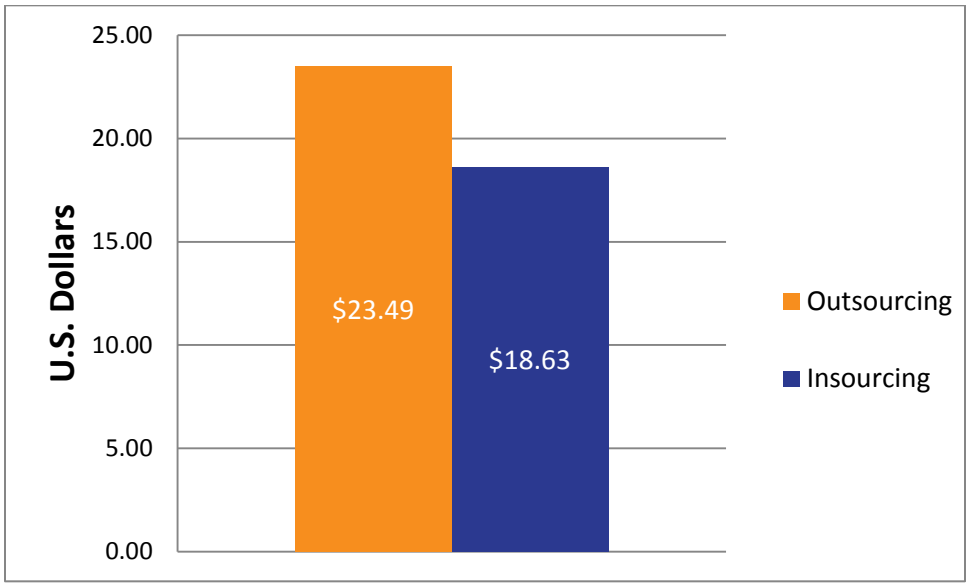
The tables and figures below compare the annual costs of outsourcing and insourcing, and provide the cost breakdown of each alternative. From the comparison, it is clear that outsourcing cleaning services in Mahalapye Hospital is more costly than insourcing, both per year and per square metre of hospital cleaned.

Table 8: Comparative Annual Costs of Outsourcing and Insourcing

	Alternative I: Outsourcing			Alternative 2: Insourcing		
Cost Category	**2014 BWP**	**2014 U.S. dollars**	**% of total cost**	**2014 BWP**	**2014 U.S. dollars**	**% of total cost**
Direct Costs						
Contract	6,000,000	644,468	96.4%	-	-	0%
Personnel	-	-	0%	1,319,965	141,779	26.7%
Supplies	-	-	0%	2,562,555	275,248	51.9%
Equipment	-	-	0%	769,687	82,673	15.6%
Indirect Costs						
Training	4,659	500	0.1%	18,514	1,989	0.4%
Management	46,685	5,015	0.8%	93,371	10,029	1.9%
Operational	172,575	18,537	2.8%	172,575	18,537	3.5%
Total	6,223,919	668,520	100%	4,936,668	530,254	100%
Total per square metre	218.68	23.49	-	173.45	18.63	-

Before adjusting for quality, Figure 2 shows that, based on the unit cost per square metre cleaned, outsourcing is more costly per unit than insourcing, $23.49 and $18.63 per square metre, respectively.

Figure 2: Annual Costs per Square Metre of Hospital Cleaned, U.S. Dollars



The annual cost breakdown of outsourcing (Figure 3) and insourcing (Figure 4) shows that, with outsourcing, the contract covers the direct costs that the hospital incurred when it was insourcing. However, hospitals need to consider additional indirect costs when outsourcing; for example, resources to facilitate infection control trainings for the vendor, cover utilities, and cover the salary of a hospital manager who oversees and monitors the vendor's work. These indirect costs are in addition to the contract value.

Figure 3: Annual Cost Breakdown of Outsourcing

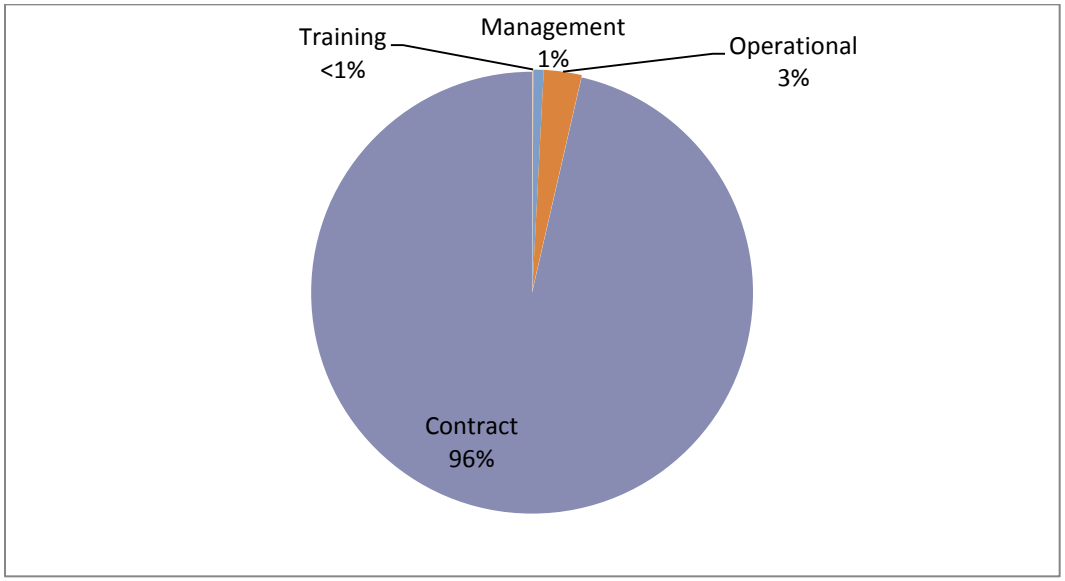
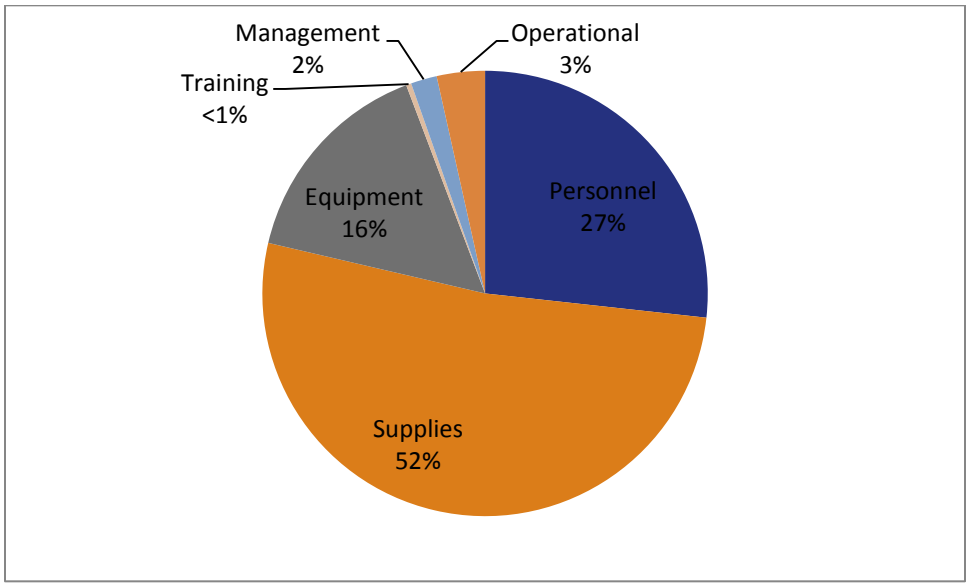


Figure 4: Annual Cost Breakdown of Insourcing



3.2 Costs of Outsourcing and Insourcing over a Five-Year Period

This analysis assumes that real costs remain constant throughout the five-year analysis period. Under outsourcing, the hospital is projected to spend about BWP 31.1 million ($3.3 million) in real financial costs on cleaning over five years, while under insourcing the hospital would spend approximately 24.7 million ($2.7 million) over the same period.

3.3 Annual Quality-Adjusted Costs of Outsourcing and Insourcing

Table 9 compares the costs of outsourcing and insourcing after adjusting for the differences in the service quality delivered through the two alternatives. These costs reflect the hidden costs of poor-quality services, which, once revealed by applying the methodology described in the previous section, show that it costs more to deliver the same quality of cleanliness when insourcing than when outsourcing. After adjusting for quality, it costs BWP 273.35 ($29.36) to clean each square metre of the hospital under outsourcing, while it costs BWP 289.09 ($31.05) to clean each square metre of the hospital under insourcing.

Table 9: Quality-Adjusted Annual Costs of Outsourcing and Insourcing

Cost Category	Alternative I: Outsourcing			Alternative 2: Insourcing		
	2014 BWP	2014 U.S. dollars	% of total cost	2014 BWP	2014 U.S. dollars	% of total cost
Direct Costs						
Contract	7,500,000	805,585	96.4%	-	-	0%
Personnel	-	-	0%	2,199,942	236,299	26.7%
Supplies	-	-	0%	4,270,925	458,746	51.9%
Equipment	-	-	0%	1,282,812	137,789	15.6%
Indirect Costs						
Training	5,823	625	0.1%	30,857	3,314	0.4%
Management	58,357	6,268	0.8%	155,618	16,715	1.9%
Operational	215,719	23,171	2.8%	287,625	30,894	3.5%
Total	7,779,899	835,650	100%	8,227,780	883,757	100%
Total per square metre	273.35	29.36	-	289.09	31.05	-

3.4 Cost-Benefit Analysis

Two cost-benefit analyses of outsourcing are presented below. Table 10 presents a cost-benefit analysis of outsourcing, without adjusting the costs for the quality of the cleaning service of the two alternatives. The NPV of outsourcing over a five-year period is approximately BWP -4.9 million (-$524,135) and the NPV per square metre of hospital floor space is BWP -171.45 (-$18.42). This means that the Mahalapye Hospital management will lose BWP 4.9 million ($524,135) in financial assets over five years by choosing to outsource cleaning services.

Table 10: Cost-Benefit Analysis of Outsourcing for Analysis Period without Adjusting for Quality, 2014 BWP

	Year 1	Year 2	Year 3	Year 4	Year 5
Tangible Benefits					
Cost savings, personnel	1,319,965	1,319,965	1,319,965	1,319,965	1,319,965
Cost savings, supplies	2,562,555	2,562,555	2,562,555	2,562,555	2,562,555
Cost savings, equipment	769,687	769,687	769,687	769,687	769,687
Cost savings, training	13,856	13,856	13,856	13,856	13,856
Cost savings, management	46,685	46,685	46,685	46,685	46,685
Cost savings, operational	-	-	-	-	-
Total benefits	4,712,749	4,712,749	4,712,749	4,712,749	4,712,749
NPV benefits	17,865,025	-	-	-	-
Costs					
Contract costs	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000
Total costs	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000
NPV costs	22,744,721				

	Year 1	Year 2	Year 3	Year 4	Year 5
Net benefits/costs	-1,287,251	-1,287,251	-1,287,251	-1,287,251	-1,287,251
NPV net benefits/costs	-4,879,696	-	-	-	-
NPV net benefits/costs per square metre	-171.45	-	-	-	-

Table 11 presents the cost-benefit analysis of outsourcing after taking into account differences in quality between the two alternatives. The NPV over the five-year analysis period is BWP 1,697,820 ($182,365) and the NPV per square metre of hospital floor space is BWP 59.65 ($6.41). This means that after considering improved quality of cleaning, the hospital management will gain approximately BWP 1.7 million in total value over a five-year period by outsourcing cleaning services. Once again, this amount does not reflect real financial savings, but rather reflects an attempt to place value on quality. These findings do not show that outsourcing cleaning services in Mahalapye Hospital will result in financial savings. On the contrary, outsourcing is more costly. However, these findings do show that outsourcing cleaning services in Mahalapye Hospital provide greater value for money, in terms of 'cleanliness per pula spent'.

Table 11: Cost-Benefit Analysis of Outsourcing for Analysis Period with Quality Adjustments, 2014 BWP

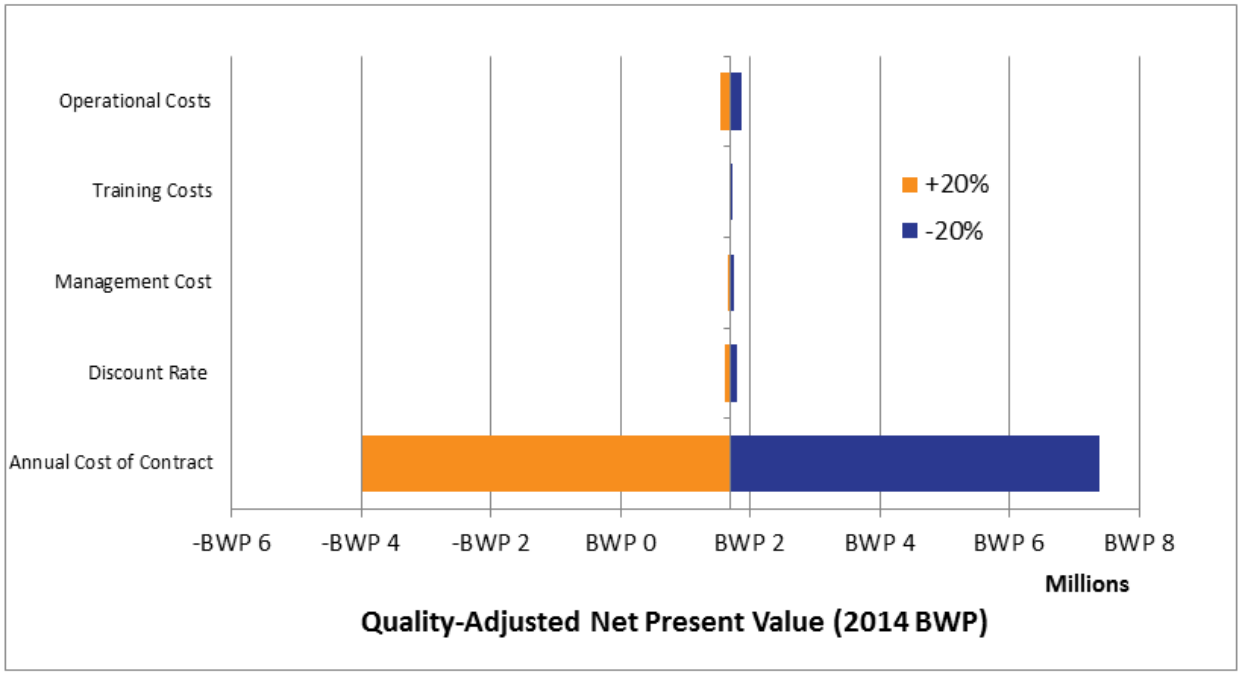
Quantitative Analysis	Year 1	Year 2	Year 3	Year 4	Year 5
Quality-Adjusted Tangible Benefits					
Cost savings, Personnel	2,199,942	2,199,942	2,199,942	2,199,942	2,199,942
Cost savings, supplies	4,270,925	4,270,925	4,270,925	4,270,925	4,270,925
Cost savings, equipment	1,282,812	1,282,812	1,282,812	1,282,812	1,282,812
Cost savings, training	25,034	25,034	25,034	25,034	25,034
Cost savings, management	97,261	97,261	97,261	97,261	97,261
Cost savings, operational	71,906	71,906	71,906	71,906	71,906
Total benefits	7,947,881	7,947,881	7,947,881	7,947,881	7,947,881
NPV benefits	30,128,721	-	-	-	-
Quality-Adjusted Costs					
Contract costs	7,500,000	7,500,000	7,500,000	7,500,000	7,500,000
Total costs	7,500,000	7,500,000	7,500,000	7,500,000	7,500,000
NPV costs	28,430,901	23,773,991	18,651,390	13,016,529	6,818,182
Net benefits/costs	447,881	447,881	447,881	447,881	447,881
NPV net benefits/costs	1,697,820	-	-	-	-
NPV net benefits/costs per square metre	59.65	-	-	-	-

4. SENSITIVITY ANALYSIS

Sensitivity analysis enables researchers to test the impact of alternative assumptions on the results of an economic analysis. The key assumptions in this analysis are the discount rate and the indirect costs of outsourcing (management, training, operations). We conducted a sensitivity analysis to demonstrate the effect of increasing and decreasing the costs of operations, training, and management each by 20 percent, and of increasing and decreasing the discount rate by 20 percent (from 10 in the base case to 8 and to 12) on the quality-adjusted NPV of outsourcing. The results are shown on a tornado diagram (Figure 5). The impacts of varying the contract costs by 20 percent are also plotted on the tornado diagram for comparative purposes.

Figure 5 below demonstrates that the operational, training, and management costs, and the discount rate, have relatively little impact on the quality-adjusted NPV of outsourcing. The NPV is positive for all scenarios where these assumptions are varied by 20 percent, meaning that outsourcing is still cost-beneficial. On the other hand, varying the cost of the contract has a significant impact on the quality-adjusted NPV of outsourcing. Increasing the cost of the contract by 20 percent (from BWP 6 million per year to BWP 7.2 million per year) decreases the quality-adjusted NPV by approximately BWP 5.7 million, while decreasing the cost of the contract by 20 percent (from BWP 6 million per year to BWP 4.8 million per year) increases the quality-adjusted NPV by approximately BWP 5.7 million.

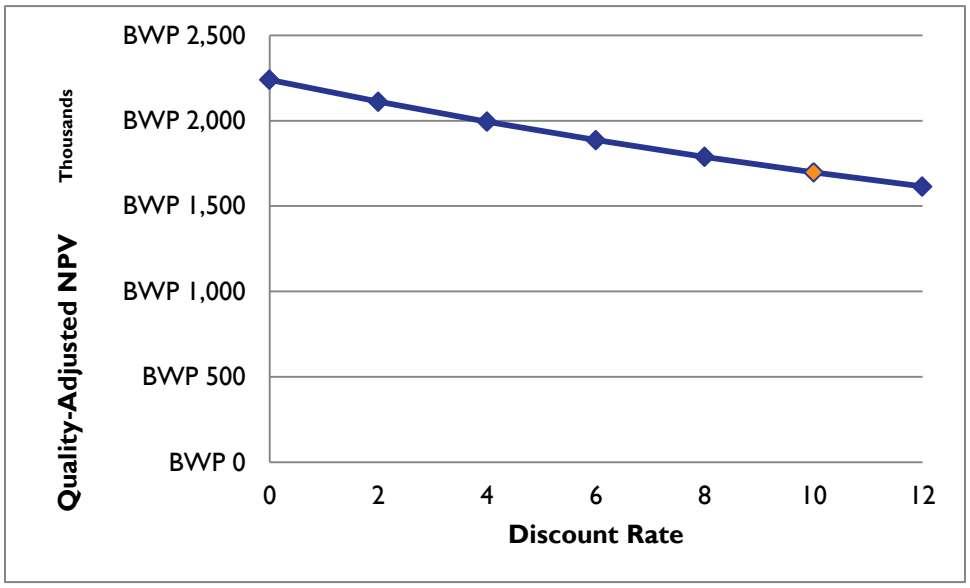
Figure 5: Tornado Diagram of Main Assumptions



4.1 Discount Rate

There is no generally accepted standard mechanism for determining discount rates for cost-benefit analyses. As mentioned above, a discount rate of 10 percent was selected for this analysis based on the discount rate used by the African Development Bank. Most governments and multilateral organisations reviewed in the literature use a discount rate between 0 and 12 percent. Figure 6 below demonstrates the effects of different discount rates on the quality-adjusted NPV of outsourcing. The NPV is positive in all scenarios, meaning that outsourcing remains cost-beneficial at all discount rates tested.

Figure 6: Impact of Varying Discount Rate on Quality-Adjusted NPV

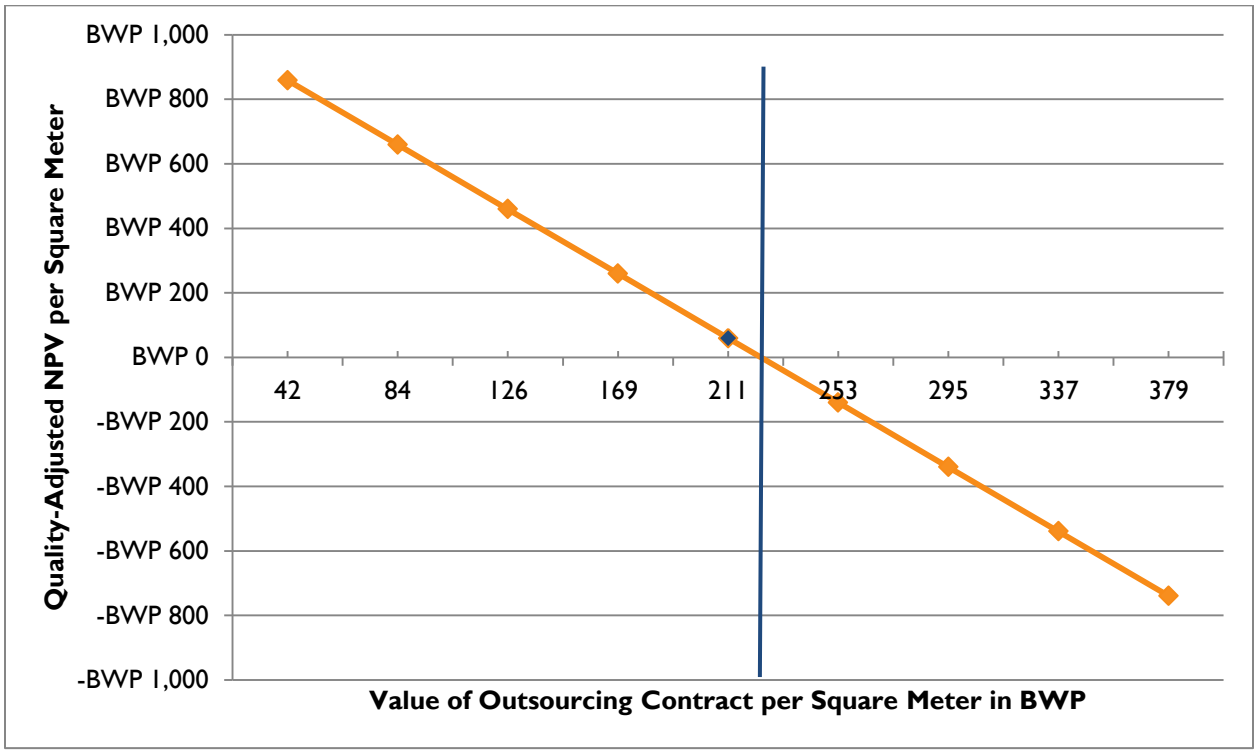


Note: Orange point represents base case.

4.2 Contract Costs

Figure 7 below shows the quality-adjusted NPV of outsourcing at different values of the outsourcing contract per square metre cleaned. In Mahalapye Hospital's current contract with the vendor, the hospital pays BWP 210.82 (USD$ 22.64) per square metre per year for the vendor to clean the hospital. The vertical line demonstrates that, holding all other assumptions constant, outsourcing is cost-beneficial to the hospital management only when the annual unit cost of the outsourcing contract is less than approximately BWP 221.50 ($23.79) per square meter per year.

Figure 7: Impact of Varying Unit Cost of Contract on Quality-Adjusted NPV



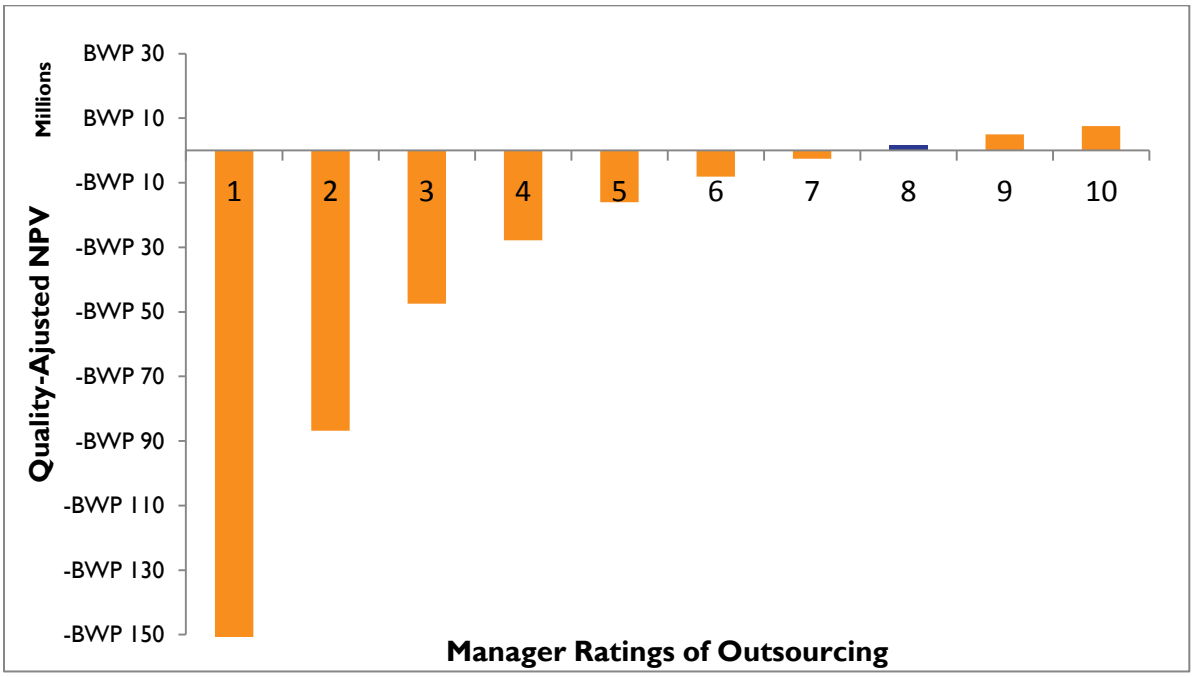
Note: The blue point represents the base case.

4.3 Service Quality

This study monetises the benefits derived from increased quality of cleaning services using responses to a survey of managers from Mahalapye Hospital. Figure 8 demonstrates how the responses to the management service quality interview impact the value for money of outsourcing cleaning services.

It is evident from the graph that the value for money of outsourcing is highly dependent on the rating of the quality of cleaning services since outsourcing. An increase of one point on the Likert scale (from 8 to 9) produces an increase of approximately BWP 3.3 million in the value for money of outsourcing (from BWP 1.7 million to BWP 5 million), while a decrease in one point on the Likert scale (from 8 to 7) produces a decrease of approximately BWP 4.2 million (from BWP 1.7 million to BWP -2.5 million).

Figure 8: Impact of Varying Outsourcing Rating on Quality-Adjusted NPV



Note: Blue bar represents the base case.

5. DISCUSSION

The cost-benefit analysis finds that outsourcing cleaning services at Mahalapye Hospital is more costly than providing those same services in-house, but that outsourcing provides a greater value for money to hospital managers because it has resulted in a significant observed increase in the quality of cleaning services.

The findings from this study are specific to cleaning services in Mahalapye Hospital, and should not be generalised to other services or to other hospitals. However, this cost-benefit analysis reveals several key lessons that should be communicated to hospital managers who are exploring the possibility of outsourcing or preparing to negotiate outsourcing contracts with vendors:

1. **Assessing the value of outsourcing and making informed decisions requires detailed information on the status quo.**

Hospital managers need to collect costing and production data from insourcing, in order to assess the potential value for money of outsourcing nonclinical services, evaluate bids from private vendors, and engage in effective contract negotiation with vendors. This study demonstrates the importance of collecting accurate data on staff salaries, benefits, and time worked, the unit price and rate of consumption of supplies, the unit price, age, and maintenance costs of equipment, the personnel costs of training facilitators and participants, the personnel costs of management, and the unit price and amount of utilities consumed by the service to be outsourced. The management of several hospitals were unable to provide some of this information to HFG data collectors.

It is equally important for hospitals to collect data on the production units of the services they wish to outsource, as this information is crucial for comparing vendors' bids with the cost of providing a service in-house. For example, hospital managers need to know the hospital's floor area (usually in square metres) to compare costs of cleaning services. They need to know the quantity of linens washed per month (usually in kilograms) to compare costs of laundry services. Without this information, hospital managers cannot determine the unit cost of providing services in-house, and therefore will not know whether they are getting a fair offer from vendors, nor whether vendors are making realistic promises that they will be able to uphold.

2. **Outsourcing can be more costly than insourcing.**

Botswana's privatisation strategy is based on the premise that outsourcing public services to private companies will allow the delivery of higher-quality services at a lower cost. The results of this analysis show that outsourcing can be more costly than providing a service in-house. A quick comparison of the costs of outsourcing and insourcing cleaning services at Mahalapye Hospital shows that the annual cost of the outsourcing contract (BWP 6.0 million) is approximately BWP 1.1 million more than the annual cost of insourcing (BWP 4.9 million). Hospital managers also need to consider the costs above and beyond the contract cost that they will continue to incur after switching to outsourcing. Under outsourcing, Mahalapye Hospital continues to provide infection-control training for cleaners, pay all utility costs, and spend significant amounts of time and money managing the vendor. After tallying all tangible costs, the annual costs of outsourcing exceed the costs of insourcing by approximately BWP 1.3 million ($140,000). In order to make an accurate cost projection of outsourcing, hospitals should ensure during negotiations that the contract defines exactly what each party is responsible for providing. Finally, managers should consider the intangible costs of outsourcing. Several identified in this case include decreased knowledge of infection

control policies among cleaning staff, increased staff turnover, increased management and supervision effort, and worse relations with labour unions. These intangible costs have the potential to result in significant financial loss to the hospital.

3. Benefits are just as important as costs for decision-making.

Hospital managers should not make decisions based solely on the cost of outsourcing, but rather on the value for money of outsourcing. Even if outsourcing is more costly than providing a service in-house, it may still be justified if it delivers a significant increase in the level of quality of the service. When we analysed the cost-benefit of outsourcing cleaning services in Mahalapye without taking into account quality, outsourcing appeared to not be cost-effective. After adjusting for the improvement in quality, we found that outsourcing delivered a higher value for money.

If justifying paying more for a better service, however, hospitals must commit to vigorously monitoring the quality of services provided by private vendors, and hold them accountable for their quality. Managers may consider defining quality standards during the contract negotiation phase to ensure that both parties have the same expectations of what constitutes quality services. Hospital managers should then conduct regular quality assessments together with company managers to ensure that expectations are being met.

It is also important for hospitals to consider other benefits of outsourcing in addition to improved quality. The intangible benefits identified by this study include improved adherence to guidelines, improved availability of supplies, safer chemical storage and mixing practices, improved waste collection, possible reduction in hospital-acquired infections due to safer practices and increased cleanliness, and more experience collaborating with the private sector. These intangible benefits may result in financial savings for the hospital or better health outcomes, both of which may justify the higher up-front financial costs of outsourcing.

4. Hospitals and vendors could both gain from closer collaboration.

This report demonstrates how both the costs and benefits impact the value for money that hospital managers receive from outsourcing. Closer collaboration between hospitals and vendors through sharing information, joint monitoring of quality, and joint training could lower the costs and increase the benefits of outsourcing for hospital management.

This report focuses on the need for hospitals to collect more data on insourcing, and conduct more-thorough analysis of the potential costs and benefits of outsourcing, but vendors could also gain from more information and analysis. Vendors often know little about the costs of providing nonclinical services in hospitals, and thus could mistakenly offer to provide these services for a fee that does not cover their full costs. Underbidding is especially likely among young companies without much experience operating in hospitals. Hospitals wishing to outsource could build trust with vendors by sharing information on the current costs of providing the service in-house, and giving them a base price upon which to make their bid. When both parties negotiate in the dark, one will likely get a raw deal at the expense of the other. If both parties negotiate with full information, it will be easier to agree on a fair price that is satisfactory to both the hospital and the vendor. Sharing costing information during contract negotiations could help hospital managers to establish a strong working relationship with vendors, which will facilitate cooperation on other issues for the duration of the contract.

Quality monitoring is another potential area for collaboration between hospital management and vendors. Both parties have an interest in ensuring that the services are delivered at the highest possible quality: in addition to ensuring patient care and safety, hospitals want the greatest value for money, while vendors want to develop a reputation as a high-quality brand and secure future business. Approaching quality assurance in a collaborative rather than confrontational manner could

result in better quality outcomes. Joint 'walk-abouts' where managers from both parties assess the quality of services together are one possible approach (Cogswell et al. 2015).

Finally, joint orientation and training sessions, where hospital staff teaches infection control practices to the vendor's cleaning staff, could also improve the quality of services. Many private companies in Botswana have little or no prior experience operating in hospitals, and are unfamiliar with the unique decontamination requirements and safety protocols of the health sector. Joint training sessions could increase the capacity of private vendors, while improving the quality of the service provided to the hospital.

5. The costs and benefits of outsourcing should improve over time.

Hospitals should reassess the costs and benefits of outsourcing periodically, as they are likely to improve as vendors and hospital managers gain experience with the outsourcing process. Vendors may be able to provide better-quality services at lower costs as they increase operational efficiency, incorporate innovations in management and service provision methodologies, and increase their economies of scale. Hospitals may improve their ability to negotiate lower prices, and could get better deals as they develop long-term, trusting relationships with vendors. The quality of services could also improve as hospitals increase their capacity to monitor vendors and enforce adherence to quality standards.

5.1 Conclusion

This study evaluated the costs and benefits of outsourcing cleaning services in Mahalapye Hospital. It found that outsourcing is more costly; however, the expense is warranted by improvements in quality of cleaning. Once service quality is accounted for, outsourcing is cost-beneficial. This report then highlights five lessons for hospital managers who are currently managing the outsourcing of nonclinical services or are considering outsourcing in the future. Going forward, hospitals should collect more-detailed information on costs and units of production of providing nonclinical services in-house, and more information on the monetary value of increased quality of outsourced services. This information will allow hospital managers to conduct rigorous cost-benefit analyses of outsourcing cleaning and other services in their own context.

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