Do Sunk Costs and Asset Specificity Affect Outsourcing Decisions?
A Survey of Australian Public and Private Hospitals

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Abstract

Managers in both the private and public hospital sector are faced with controlling rising costs and yet must maintain services to a high level of accountability. One solution to cut costs is to outsource various non-core activities. Making a decision to outsource means a manager is faced with a large amount of cost information—some relevant and some irrelevant. This paper reports on an empirical survey of the influence of two types of irrelevant cost information on outsourcing decisions made by managers in public and private hospitals—sunk cost and asset specificity. Evidence was gathered that managers of both private and public hospitals were influenced to decide against outsourcing by the presence of sunk cost and asset specific cost information. Neither past experience with outsourcing decisions nor years of experience as a manager proved decisive in improving the decision outcome to outsource despite the clearly positive financial result if outsourcing were chosen.
Introduction

Reducing costs and improving productivity is a major imperative for all types of business organisations. One of the most significant trends to emerge addressing this goal is the outsourcing of services or activities traditionally undertaken in-house. Outsourcing is defined simply as "...the process of purchasing goods and services from outside vendors rather than producing the same goods or providing the same services within the organisation" (Hornigre et al., 2000, p. 383). In terms of management accounting, this definition places outsourcing into the category of 'make-or-buy' decision making.

The approach to analysing 'make-or-buy' decisions relies on the theories of rational decision-making. The rational decision-making model proposes that all people should evaluate potential events — or alternative choices — in terms of the overall effect on total wealth or utility (Schwartz, 1998). This is achieved by comparing relevant costs to financial gains. Rational decision-making theory argues that only expected future costs that can be expected to differ between alternatives are relevant to decision making (Hornigren et al., 2000, p. 379). This assumption is contradicted by research demonstrating that two types of past costs — sunk costs (Arkes and Blumer, 1985) and asset specific costs (Williamson, 1985) — do influence decision making. The research reported in this paper explores these contradictions in the context of the Australian health care industry.

This paper is structured into four main sections. In the first section, the need for outsourcing in the health care sector is presented and previous research explored. The private and public sector are compared and questions are raised as to whether public sector hospitals are subject to the same type of managerial pressures for cost effective decisions. In the second section, decision theory relating to the types of costs encountered while making outsourcing decisions is discussed. The influence of the two types of irrelevant past costs and two demographic variables (age and prior experience) are established. The hypotheses for this research are derived from this discussion. The third section of the paper outlines design of the study and presents the analysis of results. Finally, the conclusions are presented in the fourth section.

Outsourcing in The Hospital Sector

The decision to outsource resources or facilities is fast becoming an important consideration for both private and public managers (Chin, 1997; Hensley, 1997; Hurley and Schaumann, 1997; Vining and Globerman, 1999; Quinn, 2000). Outsourcing quickly evolved to the point that two basic forms may be identified (Sen and Islam, 2005). The first and most predominant form is the outsourcing of information technology including the provision of any information system requirements such as system administration, help desk, network management and website development. The second form of outsourcing is concerned with business processes such as call centres, human resource management, and accounting functions (Sen and Islam, 2005).

While the adoption of outsourcing in the private sector has been widely investigated, little attention has been given to the public sector. In view of the growing importance of outsourcing as a means to control costs, it is timely for research that examines the public sector and provides a comparison with the equivalent private sector. One particular area that provides the opportunity to make such a comparison is the hospital sector. In the past fifteen years in the Australian public sector, initiatives to improve financial effectiveness forced the privatisation of many public organisations (Broadbent and Guthrie, 1992). Recent initiatives to adopt corporate practices in the public sector changed previous assumptions about decision making in the public sector, with managers in Australian public hospitals now required to adopt private business values and their associated behaviours (Currie, 1995). Privatisation (use of corporate practices) has now touched the administration of public hospitals worldwide (Chua, 1995; Harris, 1999).

The health care sector plays an important role in the Australian economy. For the financial period 2000-2001, the total Commonwealth Government funding provided under the Australian Health Care Agreements was $6.3b (ABS 2002). Interestingly, a comparison between private and public hospitals of revenue generated and recurrent expenditure for the 1999-2000 period revealed that private hospitals generated higher revenue while operating with a lower recurrent expenditure. The amounts are presented in Table 1.
Table 1  

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
<th>Private Hospitals as a percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>1,223</td>
<td>4,204</td>
<td>5,427</td>
<td>77.5</td>
</tr>
<tr>
<td>Recurrent expenditure</td>
<td>14,350</td>
<td>3,957</td>
<td>18,307</td>
<td>21.6</td>
</tr>
</tbody>
</table>

(ABS 2002)

The hospital sector provides a setting in which both physical and human assets are important components of the production process (Coles and Hesterly, 1998). For example, doctors, nurses and care providers are just as essential to the operational aspects of a hospital as medical and life support equipment. The services most frequently outsourced in the hospital sector tend to be support services such as housekeeping, provision of meals, laundry, computer systems and account collection (Kee and Matherly 1996). The main reason given by hospital managers for choosing to outsource is cost cutting (Hensley, 1997; Luevanos, 1997). Kee and Matherly (1996) reported that, in addition to reducing costs, hospital managers also cited the improvement in quality and the more efficient delivery of services as important reasons for choosing to outsource.

A study of outsourcing decisions by managers in Belgian hospitals by Roodhoft and Warlop (1999, p367) found that “the presence of asset specific investments and the presence of sunk costs reduced the likelihood of outsourcing” by managers. However, no distinction was made between the decisions of managers from private and public hospitals. In this paper, five issues not previously considered in the outsourcing literature are addressed.

First, a comparison of the public and private hospital sectors in Australia was made to identify any differences in the managers’ decision making. Second, in addition to the manipulation of sunk cost and asset specificity used by Roodhoft and Warlop (1999), different amounts (non, moderate and high) of both sunk cost and asset specificity were investigated. Third, specific financial terminology was used in the task description, the “present values of future costs”, to achieve focused attention on the relevance of financial information. Fourth, experience was considered as a possible intervening variable. Past experience was measured by the years of experience at a management level and managers were asked about prior experience with outsourcing decisions. Fifth, organisation size was examined to determine whether any differences in the managers’ decisions could be attributed to the scale of the operations and budget.

The privatisation of the public sector does not necessarily mean that managers in public hospitals will automatically make decisions that conform with the managers of private hospitals. Public hospital managers may be less inclined to outsource as profitability and cost effectiveness were not previously emphasised by government funding. Hood (1995 p. 94) referred to the potential difference between private and public sector organisations as “… shifting the emphasis from process accountability towards a greater element of accountability in terms of results”. However, research (Wells, 2001) suggests that the differences between managers in public and private hospitals may be so minimal as to be nonexistent due to the homogenous nature of management concerns.

H₁: Private and public hospital managers will significantly differ in their decision to outsource.

Relevant Costs and Outsourcing Decisions

The performance of a manager is usually judged on the basis of an organisation’s profitability. Therefore, managers need to be acutely aware of the difference between relevant and irrelevant costs when
making outsourcing decisions (Scapens 1991; Rabin 1998). Prior research revealed "...cost efficiency was the primary reason given by managers for a decision to outsource" (Fili and Visser 2000 p. 44). A strategic model developed by McIvor, Humphreys and McAlaer (1997) adopted the "make or buy" approach to evaluate outsourcing decisions emphasising strategic issues confronting management. These issues include maintaining control over core activities within the business, benchmarking and identifying (as well as measuring) all actual and potential costs involved in outsourcing the activity.

Irrelevant Costs

Past costs are deemed irrelevant to outsourcing decisions because they cannot be changed (Homgren, Foster and Datar, 2000 p. 379). In make or buy and outsourcing cost analysis, past investments are deemed irrelevant and referred to as "sunk costs". The sunk cost of an asset is the unrecoverable portion of the asset's value. This is determined by subtracting the asset's current resale value from its present book value (Heyne, 1997). Managers are less likely to engage in outsourcing if they are unable to distinguish between relevant and irrelevant costs (Mclvo,r 2000). Despite the prescription to ignore sunk cost information during decision making (because it cannot be retrieved or changed), evidence is mounting that there is a "sunk cost effect" where managers do include these costs in the process of making the decision (Arkes and Bulmer, 1985). This may lead to sub-optimal decisions, including decisions not to outsource when it would be cost effective. A sub-optimal decision could negatively impact upon the financial resources and subsequently restrict the capability to provide adequate service in a core activity.

Influence of Sunk Cost Information

The assumption that all managers seek to maximize profits or minimize costs (that is engage in rational decision making) is not supported by financial decision-making research (Kahneman and Tversky, 1979; Staw, 1981; Arkes and Blumner, 1985; Thaler, 1999). Staw (1976) and Whyte (1991) found that sunk cost behaviour was more likely to occur when the decision maker felt personally responsible for any negative consequences as a result of the original decision. Tversky and Kahneman (1981) suggested that individuals form mental accounts regarding the advantages and disadvantages of an event or option in order to appraise costs and benefits of outcomes.

Therefore, even though sunk costs may be irrelevant from an accounting perspective, the decision maker (regardless of experience) is likely to be influenced by the knowledge that sunk costs exist. The second hypothesis deals with the notion that sunk cost should be irrelevant to the decision to outsource and tested for the existence of the phenomena discussed by Arkes and Bulmer (1985). To further test for the "sunk cost effect", the third hypothesis tested whether a difference in the amount of the sunk cost (irretrievable past investment) influences the decision to outsource.

H₂: The presence of sunk cost information will negatively affect the decision to outsource.

H₃: The amount of sunk cost will negatively affect the decision to outsource to an extent proportionate to the amount.

Asset Specific Costs

Transaction cost economics offers another theory as to the key influences on outsourcing decision behaviour (Williamson, 1985). This introduces a specific cost that is an important component of the manager's assessment of the viability of outsourcing—asset specificity. Investment in additional equipment that is not readily or easily redeployed for other productive uses limits flexibility and increases risk of the investment (Williamson, 1986). Williamson (1985) argued that asset specificity is a critical dimension in describing transactions between parties where investment in new or additional equipment is required. Thus asset specificity is an important characteristic of a possible investment decision because the limitations imposed by the specific nature of the assets impacts on the decision to "make or buy" or outsource. (Williamson, 1986).

Under transaction cost economics, outsourcing decisions are analysed in the light of costs associated with asset specific investments (including the costs of monitoring external suppliers to maintain quality standards)
(Chalos, 1995). Outsourcing is only desirable when expected governance and coordination costs (resulting from asset specific investments) are lower than the production cost advantage of an external supplier (Chalos, 1995). The cost of doing business is the cost associated with the investment required in assets specifically to enable the interaction with the external supplier. Accordingly, the requirement to invest in an asset that is specifically to be used for the duration of the outsourcing agreement can be expected to have a negative impact upon the decision to outsource. The fourth hypothesis tested the influence of asset specificity on the decision to outsource.

\[ H_4: \text{ When asset specific information is present in the task the decision to outsource will be negatively affected.} \]

Whether decision makers were able to identify the relevance of investments that are specific to one purpose (as an irreplaceable investment) was also relevant to exploring the sunk cost effect.

**Prior Experience and Outsourcing Decisions**

Past experience, actual or educational, has arguably been shown to influence decisions made by managers. According to Bonner (1994), the individual decision maker's characteristics are important determinants of performance, suggesting that both the task and the characteristics of the decision maker impact on the performance of a task. Awasthi and Pratt (1990) indicated that an individual's ability to comprehend and apply a decision rule to solve a complex problem might be influenced by level of training and experience in that particular field. McAulay, King and Carr (1998, p. 174) made the observation from prior research into management decision making that "experience figures as an important concern in studies of financial expertise".

It is thought that managers may learn from experience that they have greater responsibility for the operational results of their division as a whole, thus creating an aggregate mental accounting approach, by thinking of division-wide profits, as opposed to individual project profits (Thaler, 1999). This mental process may transform the effect of a particular sunk cost into a single mental account (Parayre 1991, p. 243). Alternatively, their education may have taught them to consider marginal costs only (Larrick, Morgan and Nisbett 1990; Larrick, Nisbett and Morgan 1993; Tan and Yates 1995). The role of past experience in the decision to outsource was therefore addressed in this research. These findings formed the basis for two hypotheses regarding years of experience and previous experience with outsourcing.

\[ H_5: \text{ A manager's years of experience will significantly influence the decision to outsource.} \]
\[ H_6: \text{ A manager's previous consideration of outsourcing will significantly influence the decision to outsource.} \]

**Hospital Size and Outsourcing Decisions**

Irwin, Hoffman and Geiger (1998) found that the decision to adopt new technology in hospitals was moderated by the size of the hospital. They used the number of beds as the measurement to approximate the size of the hospital. The decision to outsource shares some common characteristics with the decision to adopt new technology and suggests that a difference might be expected between large and small hospitals.

\[ H_7: \text{ The size of the hospital's operations as measured by beds will be inversely related to the decision to outsource.} \]

**Data collection**

**Development of the Survey Instrument**

Six versions of the outsourcing task were developed which differed in details regarding information about sunk cost and asset specificity. The research was designed to explore the influence of sunk cost information, asset specificity and characteristics of the managers. Specific details of the task versions are summarised in Table 2.
Table 2
Summary of Task Version Details

<table>
<thead>
<tr>
<th>Version</th>
<th>Make option</th>
<th>Outsource (buy) option</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Production cost: $3,000,000</td>
<td>Purchase price: $2,600,000</td>
</tr>
<tr>
<td>(pub=22)</td>
<td>Investment (not asset specific): $300,000</td>
<td>Investment (asset specific): $300,000</td>
</tr>
<tr>
<td>B</td>
<td>Production cost: $3,000,000</td>
<td>Purchase price: $2,600,000</td>
</tr>
<tr>
<td>(pub=23)</td>
<td>Investment (not asset specific): $300,000</td>
<td>Investment (asset specific): $300,000</td>
</tr>
<tr>
<td>(prv=14)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Production cost: $3,000,000</td>
<td>Purchase price: $2,600,000</td>
</tr>
<tr>
<td>(pub=21)</td>
<td>Sunk investment: $1,400,000</td>
<td>Investment (not asset specific): $300,000</td>
</tr>
<tr>
<td>(prv=17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Production cost: $3,000,000</td>
<td>Purchase price: $2,600,000</td>
</tr>
<tr>
<td>(pub=22)</td>
<td>Sunk investment: $1,400,000</td>
<td>Investment (asset specific): $300,000</td>
</tr>
<tr>
<td>(prv=13)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Production cost: $3,000,000</td>
<td>Purchase price: $2,000,000</td>
</tr>
<tr>
<td>(pub=22)</td>
<td>Sunk investment: $500,000</td>
<td>Investment (not asset specific): $300,000</td>
</tr>
<tr>
<td>(prv=12)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Production cost: $3,000,000</td>
<td>Purchase price: $2,000,000</td>
</tr>
<tr>
<td>(pub=18)</td>
<td>Sunk investment: $500,000</td>
<td>Investment (asset specific): $300,000</td>
</tr>
<tr>
<td>(prv=13)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Details: pub = public hospitals; prv = private hospitals.

These versions were based on Roodhout and Warlop's (1999) instrument, with modifications to suit the Australian environment and to test for the other five influences introduced earlier in this paper. In particular, clearer instructions, greater differences in monetary amounts and more specific indication of the time value of money (the use of net present value) are introduced. Two new versions of the task were created to test for the influence of low amounts of sunk cost and asset specificity. To minimise the effect of non-financial factors, the instructions in the letter and in the wording of the task explicitly asked managers to consider primarily financial information in order to reach their decision whether or not to outsource.

The survey instrument was pretested by administering the questionnaires to a small number of experts in the specific industry/sector involving two accountants (one from a private hospital, the other from a public hospital) and three management level staff (one from a private hospital and the other two from a public hospitals). The purpose of the pretest was to determine adequacy and clarity as well as relevance to the sector's terminology. The pretest did not involve manipulation of the independent variables.

Administering the Survey

A list of all public and private hospitals in Australia was obtained from the Australian Yellow Pages Telephone CD Rom 1999 edition. First, surgeries and clinics were identified and deleted in the belief that the outsourcing issues presented in the survey instruments would not be relevant to the operations of such organisations. Second, the remaining 633 hospitals were categorised as either public or private; with 270 identified as private and 563 as public. Third, each group was then sorted into state order to avoid possible bias in allocation of instruments. Surveys from 12 public and 10 private hospitals were returned with the notification that the particular hospital was closed. This reduced the population to 811.

The response rates were 56.64% for the public hospitals (128) and 57.42% for the private hospitals (89). Fagley and Miller (1990) raised concern that the decision making of managers may differ due to gender. In this research the respondents consisted of 105 females and 110
males (two respondents did not answer the question of gender). The
decision to outsource did not differ between respondents of different
gender ($\chi^2 0.165 \alpha = 0.685$ with df=1). The difference was also not
significant within the public and private hospital categories (Public
Hospitals $\chi^2$ sample = 0.019, $\alpha = 0.891$, df = 1 and Private Hospitals $\chi^2$ sample = 0.529, $\alpha = 0.467$, df = 1).

Table 3 presents the percentage of respondents according to the
categories of job position held, to illustrate the range of managers
represented in the respondents.

<table>
<thead>
<tr>
<th>Job</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief Executive Officer</td>
<td>54 (24.9%)</td>
<td>41 (18.9%)</td>
<td>95 (43.8%)</td>
</tr>
<tr>
<td>General Manager</td>
<td>32 (14.7%)</td>
<td>9 (4.1%)</td>
<td>41 (18.9%)</td>
</tr>
<tr>
<td>Director of Operational Services</td>
<td>20 (9.2%)</td>
<td>14 (6.5%)</td>
<td>34 (15.7%)</td>
</tr>
<tr>
<td>Financial Controller</td>
<td>1 (0.5%)</td>
<td>3 (1.4%)</td>
<td>4 (1.8%)</td>
</tr>
<tr>
<td>Accountant</td>
<td>0 (0.0%)</td>
<td>3 (1.4%)</td>
<td>3 (1.4%)</td>
</tr>
<tr>
<td>Operations Manager</td>
<td>13 (6.0%)</td>
<td>5 (2.3%)</td>
<td>18 (8.3%)</td>
</tr>
<tr>
<td>Other</td>
<td>8 (3.7%)</td>
<td>14 (6.5%)</td>
<td>22 (10.1%)</td>
</tr>
<tr>
<td></td>
<td>128 (59.0%)</td>
<td>89 (41.0%)</td>
<td>217 (100.0%)</td>
</tr>
</tbody>
</table>

Data Analysis

Statistical Methods

Two approaches were used to determine whether responses from non-
respondents would be significantly different from the data collected.
Both approaches compared the association between responses from
early and late respondents and known characteristics of both
respondents and non-respondents. The likelihood of non-response bias
was assessed using late responses as a proxy for non-respondences
(Sekaran, 1992). A comparison found no significant differences between
early and late respondents. The chi-square for early/late responses for
public hospitals was $\chi^2 0.641$ with df=1. The chi-square for early/late
responses for private hospitals was $\chi^2 0.014$ with df=1.

Nominal or categorical measurement was used to classify the
independent variables (sunk cost and asset specificity) as well as the
dependent variable (decision outcome). The method of statistical
analysis most commonly recommended for nominal coded data is the
177; Sproull, 1995, p68). A possible limitation to the testing method was
the number of versions used (six in total) resulting in a few cell
frequencies less than 5. Daniel and Terrell (1975, p. 292) suggest that
"there is some debate about whether the minimum frequency for a cell
should be 1 or the more conservative general rule that the minimum
should be 5". Levin (1984, p. 439) states "incorrect inferences might be
made if the cell frequency is less than 5 unless correction factors are
applied". Argyous (2000) provided two alternative techniques, the Yate’s
correction for continuity and Fisher’s Exact Probability Test. The
statistical measure used to correct for a small cell frequency in this
research was the Fisher’s Exact Probability Test.

Findings

The results of the tests of the seven hypotheses are presented in this
section. Based on traditional management accounting logic, the rational
choice in each version of the task is to select the outsourcing option as
the cost to outsource is less than the cost of internal production. As
such, the financially rational decision is to select the option which costs
less. The expected result was for respondents to select the outsourcing option based on the financial data presented. The results of the survey were not consistent with the expectations gained from the literature and prior research.

Table 4 presents the percentage of respondents who selected the outsourcing option for each of the six versions. For public hospitals, a majority of respondents selected the outsourcing option in versions A and E. For private hospitals, a majority selected the outsourcing option only in scenario E.

Table 4
Percentage of Respondents Selecting the Outsourcing Option

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Public</th>
<th>Private</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>68.2%</td>
<td>60.0%</td>
<td>59.3%</td>
</tr>
<tr>
<td>B</td>
<td>34.8%</td>
<td>35.7%</td>
<td>40.0%</td>
</tr>
<tr>
<td>C</td>
<td>23.8%</td>
<td>23.5%</td>
<td>42.9%</td>
</tr>
<tr>
<td>D</td>
<td>13.6%</td>
<td>7.7%</td>
<td>12.0%</td>
</tr>
<tr>
<td>E</td>
<td>54.5%</td>
<td>58.3%</td>
<td>N/A</td>
</tr>
<tr>
<td>F</td>
<td>38.9%</td>
<td>23.1%</td>
<td>N/A</td>
</tr>
</tbody>
</table>

NATC = No Anticipated Transaction Cost (Not Asset Specific)

ATC = Anticipated Transaction Cost (Asset Specific)

NSC = No Sunk Cost

SC = Sunk Cost

When compared to the findings of Roodhoofd and Wariop (1999), the public hospitals managers' response to version A was most consistent. The responses to versions B, C, and D were inconsistent with the expected rational decision-making approach. In other words, the choice not to outsource was sub-optimal and not rational according to the premises of rational decision making.

Public Versus Private Hospitals $H_1$

The analysis revealed that the decision to outsource did not significantly differ ($\chi^2$ sample = 0.216, $\alpha =$0.642, df = 1) between public and private hospital managers.

Influence of Sunk Cost $H_2$

The influence of sunk cost information was tested by comparing results from versions C, D, E, and F against versions A and B of the instruments. The versions with sunk cost information differed significantly ($\chi^2$ sample = 9.049, $\alpha =$0.003, df = 1) from those without. The difference was also significant within the public and private hospital categories (Public Hospitals $\chi^2$ sample = 4.232, $\alpha =$0.040, df = 1 and Private Hospitals $\chi^2$ sample = 5.179, $\alpha =$0.023, df = 1).

Level of Sunk Cost $H_3$

Testing for the influence relevant to the dollar amount of sunk cost involved comparing the results from versions C and D (high amount of sunk cost) against E and F (low amount of sunk cost). The decision to outsource systematically differed ($\chi^2$ sample = 12.198, $\alpha =$0.000, df = 1) between versions with a higher amount of sunk cost than those with a lower amount of sunk cost. The difference was also significant within the public and private hospital categories (Public Hospitals $\chi^2$ sample = 7.883, $\alpha =$0.006, df = 1, Private Hospitals $\chi^2$ sample = 4.085, $\alpha =$0.044, df = 1).

An unexpected finding was that the low amount of sunk cost in versions E and F had a higher percentage of respondents choosing to outsource than the corresponding versions C and D with a high amount of sunk cost.
Asset Specificity $H_4$

To test the influence of asset specific costs, responses to instruments B, D, and F (asset specific investment) were compared against A, C, and E (no asset specific investment). The results indicate that for those versions in which asset specificity was present, the decision to outsource was significantly lower ($\chi^2$ sample $= 9.377$, $\alpha = 0.002$, df $= 1$) than in the corresponding versions that did not contain asset specific investment. The difference was also significant within the public and private hospital categories ($Public\ Hospitals\ \chi^2$ sample $= 5.735$, $\alpha = 0.017$, df $= 1$ and $Private\ Hospitals\ \chi^2$ sample $= 3.757$, $\alpha = 0.052$, df $= 1$).

Experience in Management $H_5$

The experience of respondents was determined by the number of years of service in hospital management. One respondent did not answer this question and was omitted from the analysis. Table 5 presents the results of the 2 x 6 contingency table.

| Table 5 |
| Cross tabulation of Outsourcing Decision * Years of Experience |
|----------|----------|----------|
| | Outsource | | Total |
| | No | Yes | |
| | 26 (12.0%) | 15 (6.9%) | 41 (19.0%) |
| | 35 (16.2%) | 30 (13.9%) | 65 (30.1%) |
| | 30 (13.9%) | 18 (8.3%) | 48 (22.2%) |
| | 22 (10.2%) | 13 (6.0%) | 35 (16.2%) |
| | 13 (6.0%) | 4 (1.9%) | 17 (7.9%) |
| | 8 (3.7%) | 2 (0.9%) | 10 (4.6%) |
| | 134 (62.0%) | 82 (38.0%) | 216 (100.0%) |

Experience with Outsourcing $H_6$

Analysis revealed that the decision to outsource did not significantly differ ($\chi^2$ sample $= 4.773$, $\alpha = 0.444$, df $= 5$) between respondents with different years of experience. In addition, there was no significant difference when analysis was conducted on the respondents within the public and private hospital categories ($Public\ Hospitals\ \chi^2$ sample $= 4.717$, $\alpha = 0.451$, df $= 5$ and $Private\ Hospitals\ \chi^2$ sample $= 3.270$, $\alpha = 0.658$, df $= 5$).

Size of Hospital $H_7$

The size of each hospital was determined by categorisation based on the number of beds (Irvin, Hoffman and Geiger 1998). The number of beds was selected as an approximate indicator of the likely number of patients and subsequently the possible level of demand for hospital meals. The result of the categorisation process is presented in Table 6.

The decision to outsource did not significantly differ between hospitals of different size ($\chi^2$ sample $= 4.430$, $\alpha = 0.219$, df $= 3$). Additionally, no significant difference was found within the public and private hospital categories ($Public\ Hospitals\ \chi^2$ sample $= 3.295$, $\alpha = 0.348$, df $= 3$ and $Private\ Hospitals\ \chi^2$ sample $= 4.492$, $\alpha = 0.213$, df $= 3$).
Table 6
Distribution of Responses by Size of Hospital

<table>
<thead>
<tr>
<th>Size</th>
<th>Internal</th>
<th>Outsource</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 100</td>
<td>93 (42.9%)</td>
<td>54 (24.9%)</td>
<td>147 (67.7%)</td>
</tr>
<tr>
<td>101 - 200</td>
<td>23 (10.6%)</td>
<td>9 (4.1%)</td>
<td>32 (14.7%)</td>
</tr>
<tr>
<td>201 - 300</td>
<td>9 (4.1%)</td>
<td>8 (3.7%)</td>
<td>17 (7.8%)</td>
</tr>
<tr>
<td>301 and over</td>
<td>11 (5.1%)</td>
<td>10 (4.6%)</td>
<td>21 (9.7%)</td>
</tr>
<tr>
<td></td>
<td>136 (62.7%)</td>
<td>81 (37.3%)</td>
<td>217 (100.0%)</td>
</tr>
</tbody>
</table>

Conclusions

In each of the six versions, a financially rational decision based on the information should have resulted in the choice to outsource. However, with the exception of scenarios A and E, the majority of managers chose not to outsource. In other words, the majority of respondents chose internal production when the optimal choice based on the financial data should have led to the selection of the outsourcing option. These results suggest that managers who chose not to outsource did not make the optimal economic choice. These findings provide evidence that the decision-making behaviour of the majority of managers violates the rational decision-making model. Two possible influences were tested and offer an explanation for this observed behaviour—the sunk cost effect and asset specificity.

Responses from the survey that contained sunk cost information significantly differed from the responses from surveys that did not contain a sunk cost. Further evidence of the sunk cost effect was supported by testing versions with a lower level of sunk cost against the responses from versions with a higher level of sunk cost. The tests produced significant statistical differences. These findings are consistent with the expectations of a sunk cost effect being related to violation of the rational decision making model. Asset specificity was also found to influence the choice to outsource. The intention to outsource was lower for those scenarios in which asset specificity was present. This effect was found to be systematically different between the responses of versions with and without asset specificity. These findings are consistent with the expectations under transaction cost economics that decision makers will take into consideration any additional cost of doing business with an external supplier.

That no significant difference could be found between the public and private hospital managers' responses suggests that the decision making may be more congruent than anticipated. Whether this is due to changes in management at public hospitals or managerial changes in private hospitals is an issue for further research. The predicted relationship on the decision to outsource by years of experience, past experience with outsourcing and size of hospital was not evident in the statistical analysis.

In summary, this study highlighted the importance of a number of issues for management accounting research. First, the sunk cost effect does adversely influence decision behaviour with regard to outsourcing in the hospital industry. Thus, the traditional view that only relevant costs should be considered is challenged. Second, decision behaviour was further influenced by asset specificity. While this is consistent with transaction cost economics, the implication is that decision makers are taking into consideration the likely impact of future sunk costs. The final issue involves a more broad interpretation of the findings. Outsourcing appears to be in decline in the hospital sector, but whether this is due to bad experiences or a re-evaluation of critical activities is also a matter for future research.

References


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**Accounting, Accountability & Performance**

**Version A**

Please provide your response to the following questions.

<table>
<thead>
<tr>
<th>Your position is best described as: Chief Executive Officer / General Manager / Director Operational Services / Financial Controller / Accountant / Operations Manager / Other please specify: .................................</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many years experience do you have in management within the hospital sector? .................................................</td>
</tr>
<tr>
<td>Please give the last two digits of the year in which you were born? .................</td>
</tr>
<tr>
<td>Please specify your gender. Female □ Male □</td>
</tr>
<tr>
<td>Approximately how many beds does your hospital/organisation have? ................</td>
</tr>
<tr>
<td>Have you previously examined the possibility of outsourcing any part of the operations of this or any other hospital? YES □ NO □</td>
</tr>
<tr>
<td>If your answer was &quot;yes&quot; did you decide to outsource? YES □ NO □</td>
</tr>
</tbody>
</table>

**Scenario Details:**

You are the manager of a hospital/resethome/nursinghome and have to make a decision regarding the outsourcing of patient meals. The choice is between internal production and outsourcing. Your decision is to be made primarily upon financial grounds.

This decision relates to the next five (5) years, which is the expected remaining life of the existing kitchen equipment and also the contract period for outsourcing.

The present value of costs of future internal preparation is $3,000,000.

An external company will prepare and sell the meals at a cost of $2,600,000 (measured as a present value) and would employ the current kitchen personnel of the hospital. The quality of meals would remain the same. Warming up the externally produced meals on site would require the purchase of a warming oven for $300,000. This equipment could be used for warming up internally prepared meals or meals of other external catering companies.

Please place a tick to indicate your selection:

- [ ] Internal production of patient meals.
- [ ] Outsource production of patient meals.

Please briefly explain your reasoning for this decision: