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Table of Contents

EDITORIAL PREFACE

- iv **Citizen Participation Embedded in Public, Private and Hybrid Organizations**
Jari Vuori, Department of Health Policy and Management, University of Eastern Finland, Joensuu, Finland

RESEARCH ARTICLES

- 1 **Governing the Innovation Process: Tools of Meta-Governance—The Kotitori Model in Tampere Finland**
Kari Hakari, City of Tampere, Tampere, Finland
Liina-Kaisa Tynkkynen, School of Health Sciences, University of Tampere, Tampere, Finland
- 17 **Perspectives on Purchaser-Provider Co-Operation in the Local Welfare Regimes in Finland**
Liina-Kaisa Tynkkynen, School of Health Sciences, University of Tampere, Tampere, Finland
Sami Fredriksson, National Institute for Health and Welfare (THL), Helsinki, Finland
Juhani Lehto, School of Health Sciences, University of Tampere, Tampere, Finland
- 33 **Publicness, Organisational Characteristics and Performance: An Investigation of Public and Private Hospitals in England**
Stuart Anderson, London School of Hygiene & Tropical Medicine, London, UK

BOOK REVIEW

- 51 **A Complexity Theory for Public Policy (Routledge Research in Public Administration and Public Policy)**
Reviewed by Alisa Puustinen, Department of Health and Social Management, University of Eastern Finland, Joensuu, Finland

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Publicness, Organisational Characteristics and Performance: An Investigation of Public and Private Hospitals in England

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ABSTRACT

This paper reports an exploratory study utilising a publicness model in which the impact of ownership, funding and mode of control on performance is moderated by organisational characteristics such as goals, structure and management. It describes the testing in 164 English hospital pharmacies of four health sector-relevant characteristics; diffusion of ownership (number of owners), priority of financial goals, congruence of core purpose (goals of sub-unit compared to organisation), and proximity of control (hierarchical levels between sub-unit and top management). Associations between these and four indicators of performance (managerial effectiveness, utilisation of human resources, work quality and employee satisfaction) were examined. Statistically significant relationships were seen between three of the organisational characteristics and some aspect of performance. Priority of financial goals was associated with perceptions of managerial performance, and proximity of control with use of human resources, work quality and employee satisfaction. Further elucidation of such characteristics may be justified.

Keywords: England, Hospitals, Indicators, Performance, Pharmacy, Private, Public, Publicness

INTRODUCTION

Of the many organisational studies of healthcare organisations reported, many aim to identify the impact on performance of a wide range of characteristics, processes and structures. The result has been a long and growing list of factors that may have some influence on performance. In healthcare the issue remains important, since

in almost all countries budgetary constraints have placed enormous pressure on healthcare systems. A key question in the public/private debate is whether particular groups of goods and services are better delivered by government, the private sector, public-private partnerships or non-profit organisations (Rainey & Bozeman, 2000). Debates around the public or private provision of healthcare invariably revolve around

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the relative effectiveness of provision by one sector or the other (Hughes Tuohy, Flood, & Stabile, 2004). With growing organisational diversity in the sector the concept of publicness provides a means of exploring some of the issues involved; it has been viewed in several ways (Walker & Bozeman, 2011); as organisational ownership (Rainey, Backoff, & Levine, 1976), as the influence of political authority (Bozeman, 1987) or as the relationship between the two (Rainey & Bozeman, 2000).

Publicness and Performance

The public-private distinction has different implications in different sectors or industries; Hodge (2000) for example, found big differences when comparing hospitals with refuse collection: and Kelman (1985) has shown that public and private organisations in the same functional category do not necessarily do the same thing or operate in the same way; public and private hospitals may serve different patients and operate under different policy frameworks and rules. Such observations mean that careful specification of control variables is necessary in any comparative study.

A major review of the evidence on the impact of public versus private provision on performance has been undertaken by Andrews, Boyne and Walker (2011). They categorised studies according to three characteristics of publicness (ownership, funding and mode of social control—either market or polyarchy) and focused on three measures of performance; effectiveness, efficiency and equity. They found that publicness effects, and particularly those associated with ownership, diminish when differences in management, organisation and external constraints are taken into account. They noted, however, that the majority of the studies reviewed were underspecified, and that few included more than one dimension of publicness or tested for the effects of intervening variables. Future studies should explore the moderating effects of organisational characteristics between publicness and performance.

Publicness and Healthcare

One of the perennial questions in health services research is the relative productivity and efficiency of public versus private provision of healthcare. There has also been increased interest in differentiating healthcare organisations by means other than the traditional distinction between publicly and privately owned institutions (Allen et al., 2011). But such approaches have increasingly been shown to be inadequate in capturing the diversity of organisational forms that now exist in the sector.

Close inspection reveals that a simple division between public and private hospitals based solely on ownership is too simplistic, even in Britain with its state funded National Health Service. Whilst the aim of many studies of the relative performance of organisations in the public and private sectors has been to identify factors that contribute to increased performance, to date little attention has been paid to intervening variables between publicness and performance. The research question posed in this paper is this; are there health-sector relevant organisational characteristics in public and private hospitals in England which moderate the impact of publicness on performance?

Publicness and Number of Owners

Several studies have explored the relationship between aspects of publicness and organisational factors in healthcare organisations, including the role of management practices and of stakeholders such as owners. Arguably, owners are the most influential group of stakeholders since ultimate power over success or failure rests with them; whether an organisation has one or many owners is clearly important. A growing number of studies have explored the relationship between ownership and management. Villalonga and Amit (2006) examined proxy data on Fortune-500 firms during 1994–2000, finding that family ownership creates value only when the founder serves as CEO of the family firm, or as chairman with a hired CEO. Goldeng, Grünfeld and Benito (2008) examined

differences in performance between private companies (POEs) and state owned enterprises (SOEs) in Norway, with an emphasis on the effects of market structure. Overall, they found that POEs performed significantly better than SOEs.

Publicness and Goals

Diversity of goals is usually seen as a distinguishing feature of public or private organisations, although it differs from goal ambiguity. As Rainey and Bozeman point out (2000), 'everyone says that public agencies have greater goal ambiguity than business firms except the public managers who have responded to surveys.' Frumkin and Galaskiewicz (2004) found that differences in the ease of measuring performance outputs, and the number of stakeholders the organization is accountable to, mean that non-profit and public organizations are more concerned with maintaining legitimacy than private organizations; with fewer stakeholders the latter could focus on the 'bottom line.' The formal political environment is usually the biggest external constraint that organizations face (Common, 2004); moreover, public and non-profits organizations are often constrained by having to provide certain services and serve different clientele, which makes controlling costs difficult (Amirkhanyan, Kim, & Lambricht, 2008). This suggests that an important characteristic of organisations might be the priority it attaches to financial goals.

Publicness and Structure

The relationship between organisational structure and performance has been a central feature of organisational studies for many years (Dalton et al., 1980). In contingency theory effectiveness results from fitting organisational characteristics such as structure to contingencies such as size and strategy which reflect the organisation's situation (Donaldson, 2001). In many countries healthcare organisational structures are changing rapidly in response to changes in government policy, often resulting in either a shortening or

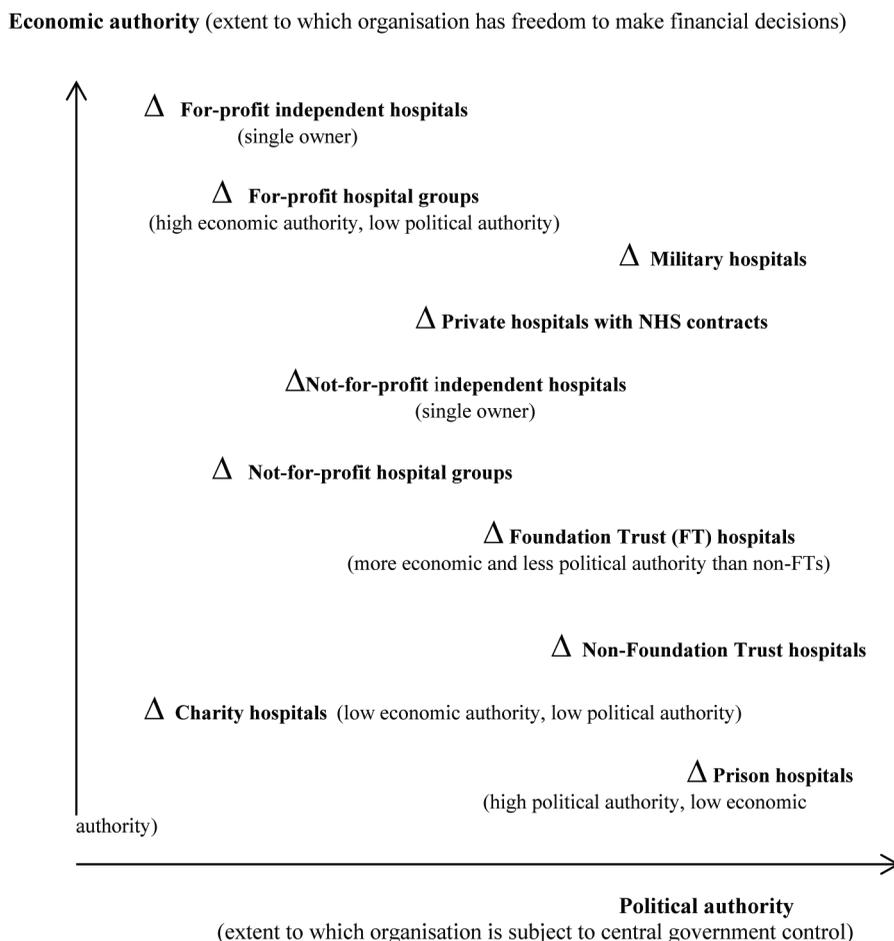
lengthening of chains of accountability. This hierarchical distance might be expected to have a significant impact on both managerial practices and performance. Increasing attention is being paid to the comparison of managerial practices and performance outcomes across public, non-profit, and private sectors. For example, research on cross-sector differences and how they affect managerial behaviour finds that public and private organizations differ in degree of red-tape, clientele characteristics, the nature of organizational goals, characteristics of service production, and organizational performance (Baldwin, 1987; Boyne, 2002; Rainey & Bozeman, 2000; Walker & Bozeman, 2011).

CONCEPTUAL FRAMEWORK

Alternative ways of conceptualising public-private differences have been developed to help address these questions. In the dimensional publicness approach (Bozeman, 1984) all organisations are considered to be public, with some being more public than others. Bozeman defined publicness as 'a characteristic of an organization which reflects the extent to which the organization is influenced by political and economic authority.' He argues that the essence of publicness is political control; 'all organisations are public because political authority affects some of the behaviour and processes of all organisations.' Organisations exist within a spectrum defined by the level of their political authority (the extent to which the organisation is subject to central government control) and economic authority (the extent to which the organisation has freedom to make financial decisions). These can be illustrated by means of a grid. The publicness grid for hospitals in England (Anderson, 2012) identifies different categories of hospital that can be distinguished on the basis of varying degrees of political and economic authority (Figure 1).

Plotting hospitals in this way suggests a range of health sector-relevant characteristics that may be worthy of further investigation. Models have been proposed which suggest

Figure 1. The publicness grid for hospitals in England



Source: Anderson (2012) ‘Public, Private, Neither, Both? Publicness theory and the analysis of healthcare organisations,’ *Social Science and Medicine*, 74, 3, 319.

that such characteristics have a moderating role between publicness and performance. In their review of the evidence on the relationship between dimensions of publicness and organisational performance Andrews, Boyne and Walker (2011) conclude that all existing studies can be described according to one of four models. The simplest model (the conventional model) implies that public or private ownership has direct consequences for organisational performance; if correct, any shift in ownership

would lead to a change in performance. In the second (dimensions of publicness model), three aspects of publicness (ownership, funding and mode of social control) are assumed to have direct and independent effects on performance. Their third model illustrates how the effects of ownership and funding are moderated by political authority; the impact of public ownership and funding on performance will be weak in the absence of strong political control.

Andrews, Boyne and Walker note that many recent publicness studies find that organisational variables such as structure, processes and strategy have a strong influence on the performance of public services (Ashworth, Boyne, & Entwistle, 2010). In their fourth model (Figure 2) ownership, funding and control are moderated by characteristics which vary between public and private organisations. The model indicates how the three forms of publicness (ownership, funding and control) impact on organisational performance, and that these are moderated through organisational characteristics. In order to take the approach forward there is a need to examine organisational characteristics which moderate the relationship between publicness and performance.

HEALTH SECTOR-RELEVANT ORGANISATIONAL CHARACTERISTICS

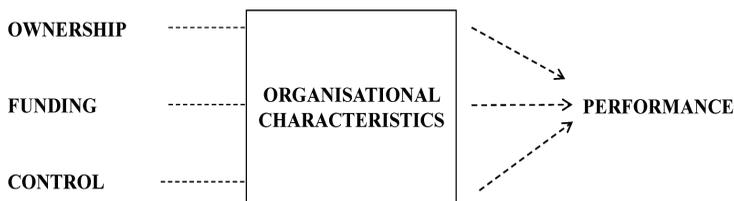
In this study we explore four health sector-relevant organisational characteristics for which there are grounds for supposing that they may moderate the relationship between publicness and performance; these are described as diffusion of ownership, priority of financial goals, congruence of core purpose, and proximity of control respectively.

Diffusion of Ownership

A simple dichotomy of public or private ownership is no longer adequate for defining hospitals in England (Allen et al., 2011). The public ownership of hospitals may mean ownership by the state or, in the case of Foundation Trusts (Department of Health, 2005) nominally by the local community; private hospitals may be owned by a single owner or by a large numbers of shareholders. There is thus a wide spectrum of ownership of hospitals in England, and the number of owners may be a characteristic of an organisation that has a moderating role between ownership (public or private) and performance, since ownership and management are closely related.

This organisational characteristic can be described as ‘diffusion of ownership’, and it can be operationalized in terms of the number of owners the organization has. Thus in the private sector, many hospitals are independently owned by an individual or partnership, whilst others are run by big corporations with large numbers of shareholders. NHS, military and prison hospitals are owned by government, and represent very high diffusion of ownership. A privately owned clinic with a single owner represents very low diffusion of ownership. Diffusion of ownership might be expected to have an impact on organisational performance. Organisations

Figure 2. Model of publicness and performance - Dimensions of publicness moderated by organisational characteristics



Note: ----- = a moderated relationship

where ownership is highly diffused are likely to perform less well than those where ownership is highly concentrated; a single owner is likely to be highly focused on the performance of organisation. We can now formulate our first hypothesis:

H1: Organisations with high diffusion of ownership will demonstrate lower levels of performance in selected indicators than organisations with low diffusion of ownership.

A five point categorical scale was used for this characteristic. A privately-run clinic with a single owner represents very low diffusion of ownership; ownership by the state represents very high diffusion of ownership. Other types of hospital with varying numbers of owners represent a range of diffusion between these extremes (Table 1).

Priority of Financial Goals

Economic authority in publicness is grounded in property rights theory, which focuses on the inability of government organisations to transfer ownership rights from one person or group of people to another. There is also the absence of the profit motive in public organisations, although it is widely recognised that few organisations in either sector are driven solely by profit. The extent to which the organisation has freedom to make financial decisions is reflected not only in the organisation's mission but also in the priority it gives to making profits for its owners, and the balance between financial and non-financial

objectives. This priority is a characteristic which may moderate the relationship between publicness and performance.

The second organisational characteristic to be tested here is 'priority of financial goals'. Is the purpose of the organization to make the maximum possible profit for its owners or shareholders? Is it to make a comfortable surplus? Is it to cover its costs? Or is it to achieve a specific target of cost savings? The financial missions of organizations represent a spectrum, according to the priority of financial objectives in relation to the overall objectives of the organization. At one end are hospitals where the objective is to achieve maximum cost savings: at the other are those whose financial objective is to maximise profits. In between are many other hospitals with a variety of financial objectives, such as breaking even, or achieving planned savings. A five point categorical scale was developed for this characteristic (Table 2).

Greater diversity of financial objectives is to be found amongst non-government owned hospitals (both independent and voluntary). Organisations subject to high levels of government control generally have low economic authority, with little freedom to make financial decisions; however, focus on cutting costs in the public sector may be as great as focus on profits in the private sector. Likewise organizations subject to low levels of government control have high economic authority, and priority of financial goals tends to be higher, with a greater focus on making profits. The greater focus on profit might therefore be expected to lead to better performance on some indicators. We can thus state our second hypothesis as follows:

Table 1. Categorical scales for diffusion of ownership

Score	Level of diffusion	Number of owners	Hospital type (example)
1	very low diffusion	single owner	privately-owned clinics
2	low diffusion	partnership or small group-owned	small independent hospitals
3	intermediate diffusion	small companies and corporations	hospitals part of chain
4	high diffusion	ownership by local communities	NHS Foundation hospitals
5	very high diffusion	ownership by State	NHS, prison and military

Table 2. *Categorical scales for priority of financial goals*

Score	Level of priority	Financial goals	Hospital type (example)
1	very low priority	aims to maximise service; costs of less concern	hospitals run by aid agency
2	low priority	service more important than financial objectives	charitable hospitals
3	intermediate priority	service and financial objectives equally important	NHS non-foundation hospitals
4	high priority	maximise profits or surpluses whilst maintaining services	NHS Foundation hospitals and non-charitable hospitals
5	very high priority	maximise returns to shareholders service of less concern	Hospital group listed on stock exchange

H2: Organisations with high priority of financial goals will demonstrate higher levels of performance in selected indicators than organisations with low priority of financial goals.

Congruence of Core Purpose

Public hospitals exist not only in the health sector but also in other areas such as prisons and the armed forces; there, the hospital is a sub-unit of a much larger organisation. Likewise, the hospital itself may be divided into a large number of sub-units, and within hospitals individual departments may operate with a high degree of autonomy. Services provided in this way may differ in important ways from those provided in organisations where health care is the sole reason for their existence. The issue of goal ambiguity has received considerable attention in the literature (e.g. Chun & Rainey, 2005) and measures of four dimensions of goal ambiguity have been defined; mission comprehension, directive, evaluative and priority goal ambiguity. However, these dimensions address goals at the organisational rather than the sub-organisational level.

An important characteristic of an organisation may therefore be the extent to which the aims of the sub-unit of the organisation of interest (which may operate with a high degree of autonomy) are congruent with the organisation itself. It is necessary to conceptualise the diffusion of goals vertically through organisa-

tions. The third organisational characteristic to be tested here is therefore 'congruence of core purpose'. It can be defined as 'the extent to which the mission of an organization, or a sub-unit of it, matches the mission of a higher level or parent organization'.

In the case of hospitals in the NHS, this match is likely to be high; but foundation hospitals, with large numbers of local members, may potentially acquire goals over and above those of other NHS hospitals. On the other hand, in prison and military hospitals, the match is likely to be poor; a prison hospital is there to maintain the health of prisoners, whilst the prison itself is there to deprive them of their liberty. It is possible therefore that this dimension might explain at least some of the differences in the performance of different types of public and private organization. A five point categorical scale was used for this characteristic (Table 3).

We can thus state our third hypothesis as:

H3: Organisations with high congruence of core purpose will demonstrate higher levels of performance in selected indicators than organisations with low congruence of core purpose.

Proximity of Control

There is evidence to suggest that, the more distant the operational unit delivering services to the public is in hierarchical terms from the central government department, the more

Table 3. *Categorical scales for congruence of core purpose*

Score	Level of congruence	Closeness between aims of organisation and its sub-unit	Hospital type (example)
1	very low congruence	aims of organization and sub-unit unrelated	hospitals owned by non-health care organizations
2	low congruence	aims of organization and sub-unit distantly related	military or prison hospitals; charities with running hospitals as minor activity
3	intermediate congruence	aims of organization and sub-unit related	NHS foundation hospitals
4	high congruence	aims of organization and sub-unit closely related	NHS non-foundation hospitals
5	very high congruence	aims of organization and sub-unit indistinguishable	the hospital is the organization

dispersed and dilute public sector values become (Brown, Potoski, & Van Slyke, 2006; Perry & Hondeghem, 2008); other measures of organisational performance are likely to be similarly affected. The fourth organisational characteristic to be tested here is 'proximity of control'. It considers the closeness or distance of the operational unit in hierarchical terms from the organization's headquarters. In hospitals in England there may be several hierarchical levels between the operational sub-unit and the top level of the hospital; and again between hospital boards and the Secretary of State, in the case of the National Health Service. Where the number of hierarchical levels is low staff working in a sub-unit of the organisation are more likely to perform effectively than those where the number of hierarchical levels is high. Jung and Rainey (2011) asked public sector respondents whether they were motivated to do a good job by their duty as a public employee; they found that measures of public duty motivation related significantly to distance from top hierarchies in organisations.

Although the declared purpose of Foundation Trusts is to reduce political authority over them, in hierarchical terms they are just one step removed from the Secretary of State for Health; they are run by Boards of Governors and are accountable directly to an Independent Regulator, Monitor (Department of Health, 2008). Non-foundation hospitals however are

responsible through Primary Care Trusts to Strategic Health Authorities, and hence to the Department of Health. This is an important and much shorter pathway from local to central control than exists for other NHS hospitals. The length of this accountability chain is an important organisational characteristic which can be applied to hospitals in any sector. Proximity of control is therefore greater for Foundation Trusts than for non-foundation hospitals. If the number of intermediate tiers between the operational unit and the headquarters is large then proximity of control is low. As before a five point categorical scale was used (Table 4). Close proximity of control might be expected to improve performance. We can thus state our fourth hypothesis as follows:

H4: Organisations with high proximity of control will demonstrate higher levels of performance in selected indicators than organisations with low proximity of control.

MEASURES OF ORGANISATIONAL PERFORMANCE

Performance measures for hospitals have often proved unsatisfactory, as the ultimate measures of success are the number of lives saved and the years of life gained. Other established measures

Table 4. *Categorical scales for proximity of control*

Score	Degree of proximity	Number of hierarchical levels	Hospital type (example)
1	very low proximity	Operational unit reports to headquarters through five + tiers	hospital one of large international group
2	low proximity	Operational unit reports to headquarters through four tiers	NHS non-foundation hospital
3	intermediate proximity	Operational unit reports to headquarters through three tiers	hospital one of small regional group
4	high proximity	Operational unit reports to headquarters through two tiers	NHS Foundation hospitals
5	very high proximity	Operational unit and headquarters and are one and the same	independent sector hospital is the organization

include bed occupancy rates, cost per admission and length of stay. Such measures have benefits and limitations; large sample sizes are required if issues such as case mix, location and age are to be taken into account. Where objective and quantitative outcome performance indicators are lacking organisations may use workload or output indicators in performance evaluation (Bohte & Meier, 2000). In this study four selected indicators of performance are used; these are perceptions of managerial effectiveness, the use of human resources, work quality and employee satisfaction.

Managerial Effectiveness

The problems of assessing managerial effectiveness have been well documented, since this is often reduced to subjective assessments; as a result measures have been developed to assess perceived managerial performance (Chun & Rainey, 2005). In the present study twelve survey items were used to quantify managers' impressions of organisational effectiveness, contributing to two measures. Managers were asked to rate their impressions of six aspects of the hospital's performance, and their impressions of the same aspects of the pharmacy's performance. Aspects considered were financial control, efficiency (optimising use of resources), productivity (ratio of outputs to resources used), the quality of service provided, consumer satisfaction, and staff morale. They rated each item on a five-point Likert scale (1=low to 5=high).

Use of Human Resources

The major input into service activities such as those undertaken in hospitals is staff, whilst the outputs are not easy to quantify and combine. For hospitals therefore employment levels provide a useful indicator of performance in the absence of hard data to provide a measure of productivity. Public choice theory suggests that employment levels will be lower in private organisations than in public ones, as a result of more flexible use of staff, and that this would be reflected in key employment ratios. Two scales for employment level were used in the present study. A single item measure was used for hospital employment levels (total average number of staff employed); and a three item measure was used for pharmacy employment levels (number of pharmacists, number of support staff, and total number of pharmacy staff).

Quality of Work

A key measure of the quality of work delivered by an organisation is customer satisfaction. Because it is usually a monopoly supplier, customer satisfaction is often thought to be less in the public sector than in the private sector. In hospitals patient satisfaction is closely allied to quality of work. Although patient satisfaction surveys are increasingly undertaken in hospitals, some indication of satisfaction may be obtained from the level of complaints and the frequency of errors reported. In the absence

of direct measures of patient satisfaction with pharmacy services provided, two proxies were used in the present study: the number of dispensing errors identified and recorded, and the number of written complaints received about the pharmacy service.

Employee Satisfaction

Different incentives operate in the public and private sectors, with the public sector depending more on a public service ethos, and the private sector more on financial rewards. For providers of public services the balance between public service ethos, financial rewards and other motivating factors contributes to overall job satisfaction and morale (Perry & Hondeghem, 2008; Jung & Rainey, 2011). Selected measures of job satisfaction and morale may therefore provide useful indicators of performance in hospitals.

In the present study, a two item measure of job satisfaction was used: respondents were asked to rate the level of job satisfaction by pharmacy staff on a five-point Likert scale; and to rate the level of job satisfaction of hospital staff in the same way. Staff morale provides an indication of the prevailing ethos of the organisation. In the present study, three items were used to examine it. Pharmacy managers were asked to rate their impression of the state of morale amongst hospital staff on a five-point Likert scale; of the state of morale amongst pharmacy staff in the same way; and of the scope for improvement in the morale of pharmacy staff.

METHOD

In this study the role of four organisational characteristics in moderating the relationship between publicness and selected indicators of performance was tested. In order to minimise the number of confounding variables, organisations within a single domain, with a common purpose and employing the same type of people, were chosen. The study uses historical data obtained

from a study of publicness in the pharmacy departments of hospitals in England (Anderson, 2000). Hospital pharmacy departments were chosen since they constitute a discrete service operating within hospitals, which are nevertheless subject to a range of expectations and demands from the parent organisation. The type of work involved in all sectors is the same, providing an essential control; routineness and complexity of tasks are similar across sectors (Lee, Rainey, & Chun, 2010).

Data were collected by means of a questionnaire survey sent to 252 managers in hospital pharmacy departments, eighty-eight of whom were in private hospitals with the remainder in public hospitals. To limit the effects of a number of confounding variables, only acute medical and surgical hospitals having up to 500 beds were included in the sample. The response rate was 64%. The 167 responses included ones from fourteen prison hospitals, four military hospitals, thirty-four non-foundation trust NHS hospitals, fifty NHS Foundation Trust hospitals, twelve not for profit hospital groups, eight not for profit independent hospitals, thirty-three for profit hospital groups, and twelve for-profit independent hospitals.

The coding scheme described (score 1 to 5 for each of the four organisational characteristics) was applied by pharmacy managers in each of the 161 hospitals. They were asked four questions: 'How many owners does your organization have?' 'How high a priority are financial goals in your organisation?' 'How close would you say the purpose of your department is to the mission of your parent organization?' and 'How many tiers of management are there between you and the Board of Directors (or equivalent?)' They answered these questions on a five point scale from 1 (very low) to 5 (very high). This gave each hospital a rating on each of the characteristics (diffusion of ownership, priority of financial goals, congruence of core purpose and proximity of control) of very low, low, intermediate, high or very high.

The data obtained was compared against information available to the researcher from

published sources (*Laing's Healthcare Market Review and Directory, 1999-2000; The Institute of Healthcare Management Yearbook, 2000*). The reliability of the coding scheme was then tested independently by two domain-relevant experts. Each was asked to classify the 161 hospitals using the classification system described above. Codes were then compared with those obtained by the researcher. The overall percentage of agreement with the researcher's codings were 96% and 93% respectively. Minor discrepancies occurred in the coding of small non-government owned hospitals.

The data were analysed using the SPSS statistical package. The analysis explored the relationship between the four organisational characteristics and the eight indicators of performance; it aimed to assess whether any of the characteristics are associated with differences in the performance of hospital pharmacies, by comparing those scoring high or low on that characteristic. The analysis therefore compared only hospitals scoring 2 and 4 respectively on each of the four characteristics.

This assessment can be made by calculating the mean rank in each case, and then performing a non-parametric Mann-Whitney U test to determine whether there is a statistically significant difference between them. One-tailed probability gives a measure of the extent of any significance. The Mann-Whitney test was chosen as it is able to assess whether one of two samples of independent observations tends to have larger values than the other. Bivariate analysis provides a means of determine whether one variable is influenced by another. No inference is made about causality; it is possible that organisational characteristics might moderate publicness as much as performance.

RESULTS

Data were obtained showing the significance of differences in the values of selected indicators of performance between hospitals with high and low scores on the four organisational characteristics.

Diffusion of Ownership and Performance

Table 5 presents the significance of differences found between the values of the eight performance indicators between hospitals with high and low diffusion of ownership respectively. This gives an indication of whether the number of owners that an organisation has plays a part in the organisation's performance. In fact, none of the differences seen are statistically significant, suggesting that the number of owners is not a key determinant of organisational performance.

Priority of Financial Goals and Performance

Table 6 presents the significance of differences found between the values of the eight performance indicators between hospitals with high and low priority of financial goals respectively. This gives an indication of the extent to which financial goals have priority in the organisation's mission. The one area where statistically significant differences are seen is in managers' perceptions of effectiveness; managers in organisations which place a strong emphasis on maximising profits for their owners believe that their organisations perform better than those where there is no emphasis on profit. However, this positive relationship is not borne out in other selected indicators of performance, including the use of human resources, quality of work and employee satisfaction.

Congruence of Core Purpose and Performance

Table 7 presents the significance of differences found between the values of the eight performance indicators between hospitals with high and low congruence of core purpose respectively. This indicator gives a measure of the extent to which the mission of the organisation, or a sub-unit of it, matches the mission of a higher level or parent organisation. The table indicates highly significant differences between the use of human resources in hospitals with high or low congruence of core purpose. Those

Table 5. Significance of differences in values of performance indicators between hospitals with low and high diffusion of ownership (Mann-Whitney)

Performance indicator	Diffusion of ownership	n	Mean rank	Mann Whitney U	Z statistic	1-tailed probability
<i>Managerial effectiveness:</i> Manager's perception of hospital's performance; Manager's perception of pharmacy's performance	Low diffusion	14	11.4	42.0	-1.57	0.12
	High diffusion	40	19.1			
	Low diffusion	14	12.4	47.0	-1.54	
	High diffusion	42	20.6			
<i>Use of human resources:</i> Employment level-hospital employees; Employment level-pharmacy employees	Low diffusion	7	7.1	13.5	-0.65	0.51
	High diffusion	13	5.7			
	Low diffusion	15	18.5	90.0	-0.24	
	High diffusion	42	19.7			
<i>Quality of work:</i> Number of dispensing errors recorded; Number of complaints received	Low diffusion	6	16.4	61.2	-0.83	0.62
	High diffusion	18	18.7			
	Low diffusion	7	25.8	68.5	-1.79	
	High diffusion	21	28.2			
<i>Employee satisfaction:</i> Perception of morale amongst hospital staff; Level of job satisfaction of pharmacy staff	Low diffusion	14	16.5	67.5	-0.69	0.49
	High diffusion	43	19.9			
	Low diffusion	14	10.9	36.5	-0.76	
	High diffusion	43	9.2			

* Statistically significant at the 5% level; ** Statistically significant at the 1% level; *** Statistically significant at the 0.1% level

with low congruence (such as prison hospitals) have much lower levels of employment of both pharmacy and hospital staff, possibly illustrating a lower priority attached to healthcare in prisons as opposed to hospitals. Differences in other performance indicators between hospitals with high and low congruence of core purpose are not statistically significant.

Proximity of Control and Performance

Table 8 presents the significance of differences found between the values of the eight performance indicators between hospitals with

high and low proximity of control respectively. Proximity of control gives a measure of the closeness or distance of the operational unit in hierarchical terms from the organisation's headquarters. It considers how many divisions or directorates, or area or regional offices, there are to go through before reaching the top level of the organisation.

This indicator produced statistically significant differences in three of the four selected indicators of performance. The most significant are those associated with the use of human resources. Employment levels were highest where proximity of control was high, such as when the operational unit reported directly to

Table 6. Significance of differences in values of performance indicators between hospitals with low and high priority of financial goals (Mann-Whitney)

Performance indicator	Priority of financial goals	n	Mean rank	Mann Whitney U	Z statistic	1-tailed probability
<i>Managerial effectiveness:</i> Manager's perception of hospital's performance; Manager's perception of pharmacy's performance	Low priority	19	19.6	183.0	-2.72	0.01**
	High priority	35	31.8			
	Low priority	18	22.3	230.5	-1.97	0.05*
	High priority	38	31.4			
<i>Use of human resources:</i> Employment level-hospital employees; Employment level-pharmacy employees	Low priority	12	11.4	37.0	-0.85	0.39
	High priority	8	9.1			
	Low priority	19	26.5	313.5	-0.81	0.42
	High priority	38	30.3			
<i>Quality of work:</i> Number of dispensing errors recorded; Number of complaints received	Low priority	8	10.5	48.0	-0.63	0.53
	High priority	14	12.1			
	Low priority	11	11.4	59.5	-1.21	0.23
	High priority	14	14.3			
<i>Employee satisfaction:</i> Perception of morale amongst hospital staff; Level of job satisfaction of pharmacy staff	Low priority	19	27.4	331.0	-0.55	0.58
	High priority	38	29.8			
	Low priority	19	24.6	277.0	-1.56	0.12
	High priority	38	31.2			

* Statistically significant at the 5% level; ** Statistically significant at the 1% level; ***Statistically significant at the 0.1% level

the top person in the organisation. The more hierarchical tiers between the two, the lower the number of staff employed. This appears to apply across the organisation, at both the hospital and pharmacy levels. This may be a reflection of senior staff willingness to support the recruitment of additional staff in areas where they have direct responsibility. Differences are also seen in relation to quality of work (the number of errors detected and hence recorded is higher in organisations where there is high proximity of control) and in employee satisfaction (job satisfaction is greater in organisations where there is high proximity of control).

DISCUSSION

In this section we consider the relationship between health sector-relevant organisational characteristics and selected indicators of performance against the hypotheses advanced earlier.

Relationship Between Publicness and Performance Indicators

The relationships between organisational characteristics and performance indicators that are statistically significant at the 5.0% level or greater are summarised in Table 9. This indicates that three of the four organisational

Table 7. Significance of differences in values of performance indicators between hospitals with low and high congruence of core purpose (Mann-Whitney)

Performance indicator	Congruence of core purpose	n	Mean rank	Mann Whitney U	Z statistic	1-tailed probability
<i>Managerial effectiveness:</i> Manager's perception of hospital's performance; Manager's perception of pharmacy's performance	Low congruence	13	41.6	449.5	-0.72	0.47
	High congruence	79	47.3			
	Low congruence	15	39.3	470.0	-1.40	
	High congruence	81	50.2			
<i>Use of human resources:</i> Employment level-hospital employees; Employment level-pharmacy employees	Low congruence	10	6.5	10.0	-4.46	0.00***
	High congruence	33	26.7			
	Low congruence	17	21.4	211.0	-4.54	
	High congruence	83	56.5			
<i>Quality of work:</i> Number of dispensing errors recorded; Number of complaints received	Low congruence	9	11.3	44.7	-0.92	0.47
	High congruence	23	13.7			
	Low congruence	8	12.1	61.8	-1.73	
	High congruence	27	14.8			
<i>Employee satisfaction:</i> Perception of morale amongst hospital staff; Level of job satisfaction of pharmacy staff	Low congruence	17	41.3	550.0	-1.58	0.11
	High congruence	84	52.9			
	Low congruence	17	44.8	609.0	-0.98	
	High congruence	83	51.7			

* Statistically significant at the 5% level; ** Statistically significant at the 1% level; *** Statistically significant at the 0.1% level

characteristics are associated with the selected indicators of performance to a greater or lesser extent. Diffusion of ownership does not appear to play a part in influencing any of the four aspects of performance (managerial effectiveness, use of human resources, quality of work and employee satisfaction). The study therefore does not provide support for hypothesis 1, that 'organisations with high diffusion of ownership

will demonstrate lower levels of performance in selected indicators than organisations with low diffusion of ownership.' Nevertheless the figures shown in Table 5 suggest that differences may exist in the indicators of performance between hospitals with high and low diffusion of ownership respectively, but that these are not statistically significant. However, further refinement of the indicators may be justified.

Table 8. Significance of differences in values of performance indicators between hospitals with low and high proximity of control (Mann-Whitney)

Performance indicator	Proximity of Control	n	Mean rank	Mann Whitney U	Z statistic	1-tailed probability
<i>Managerial effectiveness:</i> Manager's perception of hospital's performance; Manager's perception of pharmacy's performance	Low proximity	53	40.7	650.0	-0.41	0.68
	High proximity	26	38.5			
	Low proximity	54	40.2	687.5	-0.42	0.67
	High proximity	27	42.5			
<i>Use of human resources:</i> Employment level-hospital employees; Employment level-pharmacy employees	Low proximity	16	10.1	25.0	-4.00	0.00***
	High proximity	17	23.5			
	Low proximity	56	33.3	269.5	-4.73	0.00***
	High proximity	27	60.0			
<i>Quality of work:</i> Number of dispensing errors recorded; Number of complaints received	Low proximity	20	13.2	53.5	-3.72	0.00***
	High proximity	18	26.5			
	Low proximity	26	21.7	214.0	-1.41	0.16
	High proximity	21	26.8			
<i>Employee satisfaction:</i> Perception of morale amongst hospital staff; Level of job satisfaction of pharmacy staff	Low proximity	57	40.9	681.5	-0.90	0.37
	High proximity	27	45.8			
	Low proximity	56	38.6	565.5	-2.08	0.04*
	High proximity	27	49.1			

* Statistically significant at the 5% level; ** Statistically significant at the 1% level; *** Statistically significant at the 0.1% level

Priority of financial goals appears to play a part in influencing at least one aspect of performance, managerial effectiveness, as indicated by managers' perceptions of the hospital and pharmacy performance respectively. On this measure managerial effectiveness appears to be greater in hospitals where the priority of financial goals is higher than in hospitals where it is lower. The study provides limited support for hypothesis 2, that 'organisations with high priority of financial goals will demonstrate higher levels of performance in selected indicators than organisations with low priority of financial goals.' However the figures shown in Table 6 suggest that differences may exist in

the other indicators of performance between hospitals with high and low priority of financial goals respectively (use of human resources, quality of work and employee satisfaction), but that these are not statistically significant. Again, further refinement of the indicators may be worthwhile.

Congruence of core purpose also appears to play a part in influencing at least one aspect of performance, in this case use of human resources, as indicated by both hospital and pharmacy employment levels. On these measures productivity appears to be greater in hospitals where the congruence of core purpose is higher than in hospitals where it is lower. The

Table 9. Summary of statistically significant relationships

Performance Indicator	Diffusion of Ownership	Priority of Financial Goals	Congruence of Core Purpose	Proximity of Control
Perceptions of managerial effectiveness; 1. Overall hospital performance 2. Overall pharmacy performance	n/s n/s	** *	n/s n/s	n/s n/s
Use of human resources; 1. Employment levels of hospital 2. Employment levels of pharmacy	n/s n/s	n/s n/s	*** ***	*** ***
Quality of work; 1. Number of dispensing errors 2. Number of complaints	n/s n/s	n/s n/s	n/s n/s	*** n/s
Employee satisfaction; 1. morale 2. job satisfaction	n/s n/s	n/s n/s	n/s n/s	n/s *

* Statistically significant at the 5% level; *** Statistically significant at the 0.1% level;

** Statistically significant at the 1% level; n/s Not statistically significant.

study provides limited support for hypothesis 3, that ‘organisations with high congruence of core purpose will demonstrate higher levels of performance in selected indicators than organisations with low congruence of core purpose.’ Again, the figures shown in Table 7 suggest that differences may exist in the other indicators of performance between hospitals with high and low congruence of core purpose respectively (managerial effectiveness, quality of work and employee satisfaction), but that these are not statistically significant. As with the other organisational characteristics, further refinement of the concept may prove beneficial.

Finally, proximity of control appears to play a part in influencing three of the four indicators of performance examined; use of human resources, quality of work and employee satisfaction, all of which are highest where proximity of control is high, in other words, where there are few if any tiers between the operational unit and the organisation’s headquarters. This is perhaps not surprising; staff will be clearer about what is expected of them, be more likely to receive praise, and maintain high standards when they are in touch with the organisation’s bosses on an almost daily basis. The study thus provides strong support for hypothesis 4, that

‘organisations with high proximity of control will demonstrate higher levels of performance in selected indicators than organisations with low proximity of control.’ The figures shown in Table 8 indicate that there is little difference in managers’ perceptions of hospital and pharmacy performance between hospitals with high and low proximity of control; this may reflect a difference between perception and reality regarding the impact of proximity of control. Again, further refinement of the concept may be illuminating.

CONCLUSION

When we consider the overall relationship between health sector-relevant organisational characteristics and selected indicators of performance, we find that all the organisational characteristics demonstrate possible relationships with some aspects of performance, although the extent of statistically significant differences varies substantially between them. Thus diffusion of ownership shows no statistically significant differences, whilst proximity of control shows statistically significant differences in three of the four selected indicators of performance. It

is possible that more discriminatory variables administered to a larger sample would produce greater statistically significant differences. Further work on the variables would appear to be justified.

The study has considered the four innovative concepts described here as organisational characteristics. But as key features of health service organisations they are also moderators of publicness. Diffusion of ownership is clearly closely associated with ownership itself, but has been shown here not to have a moderating effect on aspects of performance. Priority of financial goals and congruence of core purpose both reflect diversity in organisational goals, which are themselves shaped by ownership, funding and mode of social control. Finally, proximity of control is an aspect of organisational structure, which is itself a consequence of the publicness framework within which it was created.

This paper has presented the results of a small scale exploratory study of four innovative health sector-relevant organisational characteristics and possible relationships between them and selected indicators of performance. The shortcomings and limitations of the study, including the small sample size and the use of historical data, are readily acknowledged. However, the results obtained suggest at the very least that more detailed development of the indicators, and further exploration of the relationships between them, may be worthwhile.

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