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A Study on Management Discretion of Municipal Hospital Managers and its Hindering Factors

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Abstract

This paper aims to quantify the degree of managerial discretion held by business managers and hospital directors in municipal hospitals in India through the concept of managerial discretion and to clarify the factors that inhibit managerial discretion. We conducted a questionnaire survey of municipal hospital managers. First, we ascertained the amount of discretion that municipal hospital managers have concerning various areas of management efficiency. Managers have a great deal of discretion in measures to increase and secure revenues, secure and train doctors and other medical staff, and reduce and control recurring medical expenses. Second, it became clear to what extent the discretion of municipal hospital managers is limited and by which factors. Many managers opined that legal constraints and the medical fee system had a significant impact. Third, there was no significant difference in managerial discretion between the partial and full application of the Local Public Enterprises Law. The multiple regression analysis with other disincentive factors and the presence of total application as explanatory variables, together with the overall size of discretion as the dependent variable, indicated that total application did not affect the overall level of discretion and that negative impacts from heads of department and internal office staff may be significant.

Keywords: Discretion, Managers, Authority, Hospital, Administration, Responsibility, Compensation system.

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1. Introduction

The Ministry of Health and Family Welfare (MoHFW) has urged municipal hospitals to reform their management procedures as the business environment surrounding municipal hospitals has become increasingly negative over the years. Specifically, the MoHFW published the "Guidelines for Public Hospital Reform" (hereinafter referred to as the "Old Reform Guidelines"), in 2009, and the "New Guidelines for Public Hospital Reform" (hereinafter referred to as the "New Reform Guidelines"), in 2017, requesting municipal hospitals to create reform plans and reform their management based on these guidelines.

Although each hospital is making efforts to improve its management based on the reform guidelines, the number of hospitals with deficits is still high. Why are municipal hospitals not progressing as expected with their performance improvement? The old and new guidelines for public hospital reform suggest insufficient efforts to improve management efficiency, inefficient medical care delivery systems due to the lack of progress in reorganization and networking of hospitals, and lack of progress in introducing private-sector management methods without sufficient managerial discretion are to blame. In this paper, we focus on the discretion of management among these factors. This is because, in addition to the introduction of private-sector management methods, management discretion is also expected to have a significant impact on the progress of management efficiency. Allowing the management to practice discretion enables more autonomous management and it is expected that efforts to improve management efficiency will progress quickly within the scope of the management's discretion. Conversely, when the managerial discretion of hospital directors and business administrators, who are the managers of municipal hospitals, is limited, even if the hospital directors and business administrators try to improve management efficiency, they may not be able to do so as expected.

There are many case studies on the discretion that managers of municipal hospitals have. However, the 'on the ground' situation of managerial discretion of municipal hospitals has not been quantified, nor has a quantitative understanding of the factors that are said to hinder discretion been promoted. This paper aims to quantify the degree of discretion of managers of municipal hospitals in India through the concept of managerial discretion and to elucidate the factors that inhibit managerial discretion. By quantifying managerial discretion and its inhibiting factors, we aim to contribute to academic research on the management of municipal hospitals.

The structure of this paper is first, the next section describes the business environment faced by municipal hospitals in India, section 3 summarizes previous research on managerial discretion in India and abroad and presents the research questions, section 4 introduces the research methodology, we adopt a questionnaire survey as the main research method, section 5 summarizes and discusses the results of the survey and, finally, conclusions and future issues are presented.

2. Management Environment Faced by Indian Municipal Hospitals and Guidelines for Municipal Hospital Reform

In the medical world, competition among hospitals has intensified amid the policy of reducing medical fees, and the management environment in municipal hospitals has become particularly challenging. Hospitals in rural areas are greatly disadvantage in recruiting medical professionals like doctors and nurses compared with private hospitals in urban areas. This is because doctors and nurses tend to be concentrated in private urban hospitals. Furthermore, municipal hospitals cannot avoid to provide unprofitable medical services such as emergency, pediatric, and perinatal care, making it structurally difficult to ensure profitability.

Faced with such a difficult business environment, municipal hospitals have been operating in the red for many years. Municipal hospitals play a significant role in the community, but they cannot provide sustainable medical services if they remain in the red. Therefore, the ministry presented the reform guidelines and urged municipal hospitals to restructure their management by) improving management efficiency, reorganizing and networking, and reviewing the management style. As a result, those hospitals with a positive balance of payments improved from approximately 30% in 2008, before the reform plan was formulated, to approximately 50% in 2019, after the reform plan was formulated and implemented.

Although some success has been achieved in this way, there are still many hospitals in the red, and their survival is in jeopardy due to the extreme business conditions. In response, the ministry issued new reform guidelines and requested that municipal hospitals prepare a new reform plan covering the period up to FY 2025. In addition to the above three perspectives, the new reform guidelines call for the creation of a plan to clarify roles based on the regional healthcare concept and hospitals are working to improve their management.

However, the overall trend has not shown any significant improvement since FY 2017, and 59.9% of municipal hospitals were in the red in FY 2019. Despite the efforts of each hospital to establish a reform plan and restructure their management, there has been insufficient progress in their financial performance.

One reason for this is the limited discretion of hospital managers. In municipal hospitals, most of which are fully or partially covered by the Local Public Enterprises Law (see below), both the business manager and hospital director serve as managers. Although non-physicians can be appointed as business administrators, physicians currently account for most of management. All hospital directors are physicians. Local government hospital managers are appointed by the head of the municipality, and budget and personnel concerns must often go through the assembly's resolution, which often limits managers' discretion. When managers' discretion is limited, it is challenging to improve management as much as intended.

Therefore, in this study we focus on the managerial discretion of municipal hospitals. In the next section, we summarize previous studies on managerial discretion in the field of management strategy theory, review previous studies on managerial discretion in Indian municipal hospitals, and present the research questions for this study.

3. Prior Research on Managerial Discretion

The concept of managerial discretion was introduced to business strategy studies by Hambrick and Finkelstein [1]. Managerial discretion means the latitude of managerial action. Hambrick and Finkelstein [1] compared a medium-sized microcomputer company with a public corporation in a town with almost no population change as examples of very different managerial discretion. They concluded that managers of microcomputer firms have a great deal of freedom in pricing, public relations, production technology, manufacturing location, sales channels, the establishment of joint ventures, and setting incentives for sales staff. Conversely, the managers of public enterprises have limited or no discretion in these areas. The degree of manager discretion is determined not only by the environment in which the company operates but also affected by the characteristics of the managers themselves and the organization as a whole.

Previous strategy theory research has shown that differences in managerial discretion affect differences in corporate performance. In particular, in studies based on the upper echelon theory, which states that upper management, such as CEOs and CFOs, have a significant impact on organizational output, managerial discretion is regarded as one of the moderators that link the characteristics of management and organizational performance, and empirical studies have been accumulated [2-8].

Before applying the concept of managerial discretion to municipal hospitals in India, we must clearly define the meaning of discretion. In this paper, managerial discretion refers to the extent to which management has the right to make and influence decisions in various areas of management (e.g., the introduction of private-sector management methods, review of salaries and benefits, and personnel affairs). In the case of municipal hospitals, however, the discretion of management is affected by laws and systems such as the Local Public Enterprises Law. Also, their discretion is limited by interference from various stakeholders like the chief executive, council, and local government's medical bureau. Based on previous studies, the factors that limit the discretion of municipal hospital managers are discussed below.

In India, the discretion of municipal hospital managers has been advanced without reference to overseas strategic theory research. Bajpai [9], in a major study on the subject, points out that one of the problems unique to municipal hospitals is the suppression of autonomy by the government. Bajpai [9] focuses on the application of the Local Public Enterprises Law to municipal hospitals as one of the factors that determine the discretion of municipal hospital managers. When the Local Public Enterprises Law is partially applied the hospital director's authority when acting as the hospital manager is minimal. When the Public Enterprises Law is fully applied, an appointed project manager is given authority over personnel, budget, and other matters, and is said to have more management discretion. Thus, one method both the old and new reform guidelines recommend is changing the management to a full application of the law.

The authority given to business administrators with the full application of the law applied is shown in Table 1. As indicated in Article 8, the administrator "executes the business of the local public enterprise and represents the local public entity concerned in the execution of such business" (Article 8, paragraph 1 of the Local Public Enterprises Law), except for the preparation of the budget and submission of bills. As for the budget, as clearly stated in Article 9 paragraphs 3 and 4, the preparation of drafts and explanatory notes is permitted. Furthermore, Article 9, paragraph 1 permits the establishment of necessary divisions. Article 9, paragraph 2 states the management may organize matters related to the appointment and dismissal of employees, salaries, etc. Article 15 states that the appointment and dismissal of corporate employees are under the authority of the management and those corporate employees are directed and supervised by the management. Article 10 clearly states that it is also the authority of the manager to enact administrative regulations to manage the organization. Thus, the authority given to the business manager is substantial, and within the scope of their authority they are expected to be able to manage the business freely at their discretion.

In the case of partial coverage of the law, the management discretion of the hospital director in charge of on-site management is limited in various aspects compared with a hospital business administrator with full coverage. As indicated in Article 8, despite the hospital director running frontline activity, the authority of the administrator lies with the chief executive. Therefore, the preparation of budget drafts and explanatory notes is not within the authority of the hospital director. They can't set up necessary divisions within the hospital unilaterally, nor can they manage the appointment and dismissal of staff, salaries, etc. The acquisition, management, and disposal of assets and the conclusion of contracts are also outside the authority of the hospital director. The hospital director cannot enact corporate management regulations within the scope of their discretion, nor can they appoint, dismiss, or direct and supervise corporate staff, and the personnel affairs of administrative staff are greatly influenced by the intentions of the chief executive and the chief's department.

Bajpai [9] compares partially and fully applicable hospitals to examine the extent to which legal constraints differ between the two, i.e., to what extent management discretion is expanded by changing from a partial application of the law to

full application. In addition, Bajpai [9], based on his experience of managing hospitals both where the law was partially applied and where it was fully applied, explains the hospital director's discretion was considerably restricted in the hospital where the law was partially applied, while their discretion was expanded in the fully-applicable hospital and even more than expected from a legal perspective.

Table 1.
Powers of administrators as stipulated in the Local Public Enterprise Law.

Article 8 The administrator shall execute the business of the Local Public Enterprise and represent the local public entity concerned in the execution of said business, except for the following matters. However, this shall not apply in cases where laws and regulations specifically provide otherwise. (i) To prepare the budget (ii) To submit proposals for cases to be voted on by the local government assembly (iii) To submit the settlement of accounts for examination by the audit commissioner and approval by the assembly (iv) To impose a non-penal fine as prescribed in Article 14, paragraph (3) and Article 228, paragraphs (2) and (3) of the Local Autonomy Act. (2) In a local government that does not have an administrator under the provision of the proviso of Article 7, the authority of the administrator shall be exercised by the head of the local government concerned.
Article 9 The administrator shall, under the provisions of the preceding Article, be in charge of the following affairs generally concerning the execution of the business of a local public enterprise. (i) To establish the necessary divisions to have them take charge of the affairs under their authority (ii) To take charge of matters concerning the appointment and dismissal, salary, working hours and other working conditions, disciplinary actions, training, and other personal status matters of officials (iii) To prepare a draft of the budget and send it to the heads of local public entities (iv) To prepare explanatory notes on the budget and send them to the heads of local public entities (v) To prepare settlement of accounts and submit them to the heads of local public entities (vi) To prepare and send to the head of local public entity materials concerning the preparation of bills for cases to be resolved by the Diet. (vii) To acquire, manage, and dispose of assets to be used for the enterprise concerned (viii) To enter into contracts (ix) To collect fees, charges, dues, or subscriptions other than rates or charges (x) To borrow temporarily to make expenditures within the budget (xi) To perform cashiering and other accounting duties (xii) To keep deeds and official documents (xiii) To conclude collective agreements (xiv) To obtain permission, approval, licenses, or other dispositions of administrative agencies about the enterprise concerned, which are specified by Cabinet Order (xv) Other than those listed in the preceding items, matters that fall under the authority of laws and regulations or the ordinances or rules of the local government concerned.
Article 10 The administrator may establish management rules (hereinafter referred to as "enterprise management rules") for the business, provided that such rules do not violate laws and regulations, ordinances or rules of the local government concerned, or rules established by its agencies.
Article 14 Necessary organizations shall be established by ordinance to have local governments managing local public enterprises handle affairs that fall under the authority of administrators.
Article 15 Employees who assist in the execution of affairs under the authority of the administrator (hereinafter referred to as "company employees") shall be appointed and dismissed by the administrator. However, in the case of appointing or dismissing key personnel specified by the rules of the local government concerned, the consent of the head of the local government concerned shall be obtained in advance. 2 Company staff shall be directed and supervised by the manager.

Source: Local Public Enterprises Law.

Bajpai's [9] study discusses the degree of discretion of municipal hospital managers and management improvement by comparing hospitals where the law is either partially or fully applied. Bajpai [9] does not suggest that relaxing legal constraints will increase the discretion of managers and allow them to freely implement management reforms. Even for hospitals with full coverage, "patient consultation and mutual understanding between the hospital business manager and the chief executive, the chief executive's department, the hospital bureau, and the hospital's executive staff are indispensable" [9] to promoting management reform. In other words, even in a fully qualified hospital, without the support of the chief executive, the head office, and the hospital staff, the reform will not proceed as expected, and the management will not be able to fully exercise its discretion.

Ghosh [10] points out the influence of chiefs, councilors, and local government officials as factors that hinder management reform. According to Ghosh [10], "In municipal hospitals, most of the people involved, including elected leaders and councilors, are amateurs in medical care and hospital management. The administrative staff, who are the heart of the hospital, are transferred after two to three years. In many cases, personnel and financial officials outside the hospital hold the authority to hire people and set budgets [10]." Because of this situation, even when it was clear that increasing medical staff

would increase revenue, local government officials did not understand the benefits and were unable to hire staff, according to the case study.

There are studies that highlight the limited discretion of managers of municipal hospitals and the factors that limit such discretion, including Bajpai [9] and Ghosh [10], most are based on a limited number of cases. They do not quantitatively clarify the status of managerial discretion in municipal hospitals as a whole. Legal constraints, the chief executive, the council, the chief executive's department, and hospital staff have been cited as factors that limit managerial discretion in municipal hospitals, but it is unclear to what extent each of these factors affects managerial discretion.

Understanding the accurate state of managerial discretion and assessing the strength of the impact of disincentive factors can provide useful insights for promoting management reform in municipal hospitals. If management reform is not progressing because management discretion is limited, it is necessary to identify the factors that limit discretion and reduce the impact of those factors. This study aims to provide the knowledge necessary to formulate measures for this purpose. Therefore, this study will address the below research questions.

Q1: How much discretion do municipal hospital managers have?

Q2: To what extent is the discretion of the management of a municipal hospital limited and by what factors?

In addition to these two research questions, a comparison will be made between hospitals with partial application of the Local Public Enterprises Law and those with full application. In addition to the degree of law application, the expansion of the authority of hospital managers and the acceleration of management reform by changing management style are significant issues in the old and new reform guidelines [11, 12]. However, the extent to which managerial discretion differs between the two forms of management has not been compared based on quantitative data, to date. Therefore, we focus on the degree of application of the Local Public Enterprises Law among the limiting factors of discretion and present the third research question:

Q3: Are there any differences in managerial discretion between the partial and full application of the Local Public Enterprise Law?

4. Research Methodology

We conducted a questionnaire survey of municipal hospital managers to answer the above research questions. We approached those municipal hospitals listed in the individual sheets of the 2020 Local Public Enterprises Yearbook, the latest available at the time of the survey. These are prefectural, municipal, partial administration association, and enterprise association hospitals either fully or partially covered by the Local Public Enterprises Law. As of FY 2020, 1,386 hospitals were fully covered by the law and 1,391 partially covered [13]. Hospitals managed by local independent administrative agencies were not included in the survey.

Interviews were conducted with municipal hospital managers from June 2020 to April 2021, and the questionnaire was developed based on the results and previous studies [1, 6-9, 14]. Two hospital administrators were asked to pilot test the questionnaire, and it was modified based on their comments. The questionnaires were distributed and collected between June 2020 and April 2021 and resent to hospitals that did not respond to the first distribution. The questionnaire was sent to the hospital director for partially covered hospitals and both the hospital director and project manager for fully covered hospitals because we learned from the interviews that in some cases the project manager was not very involved in the management of the hospital. We sent 919 questionnaires comprising 410 to partially covered hospitals and 509 to fully covered hospitals and received 307 responses. The data were analyzed using 298 of these, excluding responses from those other than hospital directors or business managers, or the equivalent. The collection rate was 33.4%, with the valid response rate at 32.4%. To evaluate the effect of non-response bias, we compared the mean values of medical revenue of the hospitals run by the respondents with those of the entire survey sample, but there was no statistically significant difference. Therefore, the problem of non-response bias is not significant.

4.1. Questionnaire

Form 1 in the questionnaire included questions on personal characteristics such as the respondent's job title, gender, age, years of experience as a physician, and years of experience as a hospital manager, along with items on managerial discretion. Concerning discretion, the survey items included (1) the amount of managerial discretion regarding the efficiency of hospital management, (2) the influence of factors that limit managerial discretion, and (3) open-ended descriptions of experiences with limited discretion.

(1) The questionnaire items regarding managerial discretion in improving the efficiency of hospital management were newly developed regarding the scales used in previous studies such as Chang and Wong [8] and Zhao, et al. [14] which attempted to measure managerial discretion using questionnaire surveys, and considering the New Reform Guidelines [12] and Bajpai [9]. The nine areas related to the efficiency of hospital management in Form 3 are (a) introducing private-sector management methods, (b) reviewing the scale and type of business, (c) reducing and controlling recurring medical expenses, (d) controlling facility and equipment maintenance costs, (e) increasing and securing income, (f) securing and training medical staff such as doctors, (g) appointing human resources with a good sense of management, (h) strengthening the human resource development of administrative staff, and (i) salaries and allowances. The respondents were asked to indicate on a 5-point Likert scale how much discretion they have with 1 representing “no discretion at all,” 3 representing “undecided,” and 5 representing “complete discretion.”

(2) The questionnaire regarding the influence of factors limiting managerial discretion was newly created by adding factors mentioned in the interview survey to those pointed out in Bajpai [9]. Specifically, respondents were asked to what extent their managerial discretion was limited by these seven factors in Form 2: (a) legal restrictions imposed on public

hospitals, (b) influence by the chief executive, (c) influence by the parliament, (d) influence by the chief executive's department (main office), (e) influence by hospital administration, (f) influence by hospital medical professionals, and (g) influence by university medical offices. Respondents answered on a 5-point Likert scale, with 1 representing "no restriction on discretion," 3 representing "undecided," and 5 representing "very strong restriction on discretion."

(3) As for the open-ended descriptions of the experience of limited discretion, the respondents were asked to answer with experiences of management reform that required a great deal of effort, took a long time, or resulted in insufficient reform due to limited managerial discretion. In the next section, we will introduce the contents of the free text in interpreting the results of the analysis in (1) and (2).

5. Analysis of Results

In this section, the results of the questionnaire are presented in the following order: (1) the attributes of the respondents, (2) the degree of managerial discretion of the managers, and (3) the influence of factors that limit managerial discretion. In addition, for (2), the results of the comparison between hospitals with partial coverage and full coverage are presented, along with the results of the χ-square test. In interpreting the results, the open-ended responses regarding the limitation of discretion will also be presented. Note all tables were prepared by the authors.

Table 2.
Positions of the respondents.

Position (295 responses: Multiple choice)	Business Administrator	Hospital Director	Business Administrator and Hospital Director	Other
Number of Respondents	84	232	25	2
%	28.5%	78.6%	8.5%	0.7%

5.1. Respondents' Attributes

Looking at the job titles of the respondents in Table 2, fewer than 80% were hospital directors and fewer than 30% were business administrators because some respondents, about 8.5%, hold both positions.

Table 3 shows that the average age of the respondents was about 62. The youngest manager was 32 and the oldest was 79. Of the respondents, only three were in their 30s and ten in their 40s. Most were in their 50s and 60s. The average number of years of experience as a physician was about 35. There were seven non-physician managers (business administrators) with administrative backgrounds. The average number of years of experience as a hospital manager was about 6.5 years, while the minimum was one month and the maximum was 32 years. Most of the respondents were male, and only eight, or less than 3%, were female municipal hospital administrators.

Table 3.
Respondents' age, years of experience as a physician, and years of experience as a hospital manager.

Variable name	Number of respondents	Average value	Median	Standard deviation	Minimum value	Maximum value
Age	294	61.73	62	6.4	32	79
Years of experience as a physician	292	35.11	37	8.65	0	51
Years of experience as a hospital manager	291	6.61	5	5.86	0.08	32

In addition, 129 (43.3%) of the responses were from hospital operators with a partial application of the Local Public Enterprises Law, and 169 (56.7%) were from hospital operators with a full application.

Table 4.
Extent of managerial discretion regarding the efficiency of hospital management.

Variable name	Number of respondents	Average value	Median	Standard deviation	Degree of discretion	No discretion		Can't say either way		Complete Discretion
						1	2	3	4	5
1. Introduction of private-sector management methods	295	2.79	3	1.14	No. of respondents	54	53	105	68	15
					%	18.3%	18.0%	35.6%	23.1%	5.1%
2. Review of business scale and format	293	2.72	3	1.11	No. of respondents	52	64	102	64	11
					%	17.7%	21.8%	34.8%	21.8%	3.8%
3. Reduction and control of recurring medical expenses	294	3.40	4	0.91	No. of respondents	9	36	100	125	24
					%	3.1%	12.2%	34.0%	42.5%	8.2%
4. Reduce facility and equipment maintenance costs	295	3.29	3	0.94	No. of respondents	13	39	116	104	23
					%	4.4%	13.2%	39.3%	35.3%	7.8%
5. Measures to increase and secure income	294	3.64	4	0.81	No. of respondents	3	19	94	144	34
					%	1.0%	6.5%	32.0%	49.0%	11.6%
6. Securing and training of doctors and other medical staff	295	3.41	4	1.05	No. of respondents	19	32	90	118	36
					%	6.4%	10.8%	30.5%	40.0%	12.2%
7. Appoint people with a strong sense of management	295	2.81	3	1.20	No. of respondents	49	73	83	66	24
					%	16.6%	24.7%	28.1%	22.4%	8.1%
8. Strengthen human resource development for administrative staff	295	2.68	3	1.12	No. of respondents	47	90	83	59	16
					%	15.9%	30.5%	28.1%	20.0%	5.4%
9. Review of remuneration system, including salaries and allowances	294	2.10	2	1.15	No. of respondents	117	85	50	31	11
					%	39.8%	28.9%	17.0%	10.5%	3.7%

5.2. Management's Managerial Discretion

We asked how much discretion managers have in nine areas related to improving the efficiency of hospital management. Table 4 shows the results, which demonstrate that many managers perceive they have a great deal of discretion in measures to increase and secure income (mean value 3.64), secure and train doctors and other medical staff (mean value 3.41) and reduce and control recurring medical expenses (mean value 3.40). Conversely, many managers think they do not have much discretion (mean value less than 3) in reviewing the compensation system such as salaries and allowances (mean value 2.10), strengthening the human resource development of administrative staff (2.68), reviewing the scale and type of business (mean value 2.71), and introducing private management methods (mean value 2.79). There are three main areas of concern, namely strengthening the development of human resources (2.68), revising the scale and form of business (2.71), introducing private-sector management methods (2.79), and appointing human resources with good management sense (2.81). Those who have no discretion in the review of compensation systems such as salaries and allowances (nearly 70%) are 1 or 2, indicating this is an area where most managers feel that their discretion is limited.

The reason why many managers responded that they have relatively sizeable managerial discretion regarding measures to increase and secure income, secure and train doctors and other medical staff, and reduce and control recurring medical expenses is thought to be because most of them are doctors. These are among the various areas related to management efficiency directly related to daily medical activities. Compared with other stakeholders involved in municipal hospitals, managers have relatively rich experience and knowledge in healthcare, and are not restricted by other stakeholders regarding management efficiency that is directly related to healthcare, which makes it easier for them to exercise their discretion.

Many areas in which management is perceived to have little discretion are not concerned with day-to-day medical activities. There are also some areas where management discretion is limited to a considerable extent by laws and systems, such as the review of compensation systems for salaries and allowances. In addition, some stakeholders of municipal hospitals, such as the council and chief executive, can influence decisions which are expected to limit the discretion of the management. The magnitude of the impact of individual discretionary limiting factors on managerial discretion in each area will be discussed in detail in the next section.

5.3. Impact of Factors Limiting Managerial Discretion

We asked the managers to what extent their managerial discretion was limited by eight factors, namely legal constraints, chief executive, council, main office, hospital administrative staff, hospital medical professionals, university medical office, and the reimbursement system. Table 5 shows the results.

As can be seen in Table 5, many managers believe that legal constraints (mean value 3.54) and the medical fee system (mean value 3.38) strongly limit managerial discretion. Many managers consider the influence of in-house medical professionals (mean value 2.45) and in-house administrative staff (mean value 2.53) to be relatively small. The chief executive's (mean value 2.92), the council's (mean value 2.97), the university doctor's office's (mean value 3.05), and the main office clerks' (mean value 3.15) influence are considered by many respondents to be indifferent (mean value of about 3).

To clarify the relationship between the amount of discretion perceived by management in each area related to management efficiency and the factors limiting discretion we examined the correlation between the two. The results are shown in Table 6. The strongest limitation of discretion in each area related to management efficiency is suggested to be hospital administrative staff. The impact of hospital administrative staff was found in these five areas listed in descending order of the absolute value of the correlation coefficient, namely measures to secure and increase income (-0.421), restraint of facility and equipment maintenance costs (-0.402), enhancement of human resource development for administrative staff (-0.397), reduction and restraint of recurring medical expenses (-0.386), and review of the scale and form of business (-0.343). The second-largest negative correlation coefficient (-0.358) was found for the discretionary factor related to the appointment of human resources with good management sense. In addition, the third-largest negative correlation coefficient (-0.385) was found for the discretion to introduce private management methods. Examining why the influence of hospital administrators is so large, based on the free text, it is thought that the reason for the substantial negative impact of in-house clerks is that there are many clerks with little knowledge of medical care and hospital management and work to return to the main office as soon as possible without focusing on improving hospital management. According to the free text, the administrative staff of municipal hospitals is often replaced every two to three years under the personnel transfer system of the municipality, and in many cases, administrative staff does not know about medical care or hospital management. Some clerical staff think they will eventually return to local government and that there should be no changes during their tenure. In some cases, not only the non-managerial administrative staff but also the office managers seem to work with the same attitude.

Table 5.
Impact of factors limiting managerial discretion.

Variable name	No. of respondents	Average value	Median	Standard deviation	Degree of discretionary limitation	Not limiting discretion		Can't say either way		Very strongly limiting discretion
						1	2	3	4	5
1. Legal constraints imposed on public hospitals	290	3.54	4	1.07	No. of respondents	17	26	84	110	53
					%	5.9%	9.0%	29.0%	37.9%	18.3%
2. Influence from the chief	295	2.92	3	1.14	No. of respondents	33	78	91	67	26
					%	11.2%	26.4%	30.8%	22.7%	8.8%
3. Impact from Congress	295	2.97	3	1.10	No. of respondents	30	69	99	74	23
					%	10.2%	23.4%	33.6%	25.1%	7.8%
4. Influence from the chief department (main office)	291	3.15	3	1.25	No. of respondents	33	58	83	67	50
					%	11.3%	19.9%	28.5%	23.0%	17.2%
5. Influence from the hospital office staff	293	2.53	3	1.07	No. of respondents	57	88	94	44	10
					%	19.5%	30.0%	32.1%	15.0%	3.4%
6. Influences from hospital medical professionals	293	2.45	2	1.03	No. of respondents	60	96	87	45	5
					%	20.5%	32.8%	29.7%	15.4%	1.7%
7. Influence from the university medical office	294	3.05	3	1.30	No. of respondents	52	45	75	81	41
					%	17.7%	15.3%	25.5%	27.6%	13.9%
8. Impact of the Medical Fee System	295	3.38	3	1.15	No. of respondents	23	38	89	93	52
					%	7.8%	12.9%	30.2%	31.5%	17.6%

Table 6.
Correlation coefficients between the magnitude of managerial discretion and the limiting factors of discretion.

Variable name		All suitable dummy	Legal constraints	Chief	Parliament	Chief executive's office	In-hospital affairs	Hospital medical staff	University medical board	Medical fee system
1. Introducing private sector management methods	correlation coefficient	0.010	-0.261	-0.402	-0.352	-0.402	-0.385	-0.159	-0.037	-0.010
	p-value	0.864	0.000***	0.000***	0.000***	0.000***	0.000***	0.006**	0.531	0.864
2. Reviewing business scale and format	correlation coefficient	0.098	-0.200	-0.285	-0.295	-0.324	-0.343	-0.099	-0.036	-0.047
	p-value	0.093	0.001***	0.000***	0.000***	0.000***	0.000***	0.093	0.535	0.418
3. Reducing and controlling recurring medical expenses	correlation coefficient	-0.004	-0.165	-0.317	-0.309	-0.351	-0.386	-0.268	-0.125	-0.082
	p-value	0.939	0.005**	0.000***	0.000***	0.000***	0.000***	0.000***	0.033*	0.159
4. Curbing facility and equipment maintenance costs.	correlation coefficient	0.035	-0.111	-0.316	-0.329	-0.376	-0.402	-0.179	-0.017	-0.096
	p-value	0.545	0.060	0.000***	0.000***	0.000***	0.000***	0.002**	0.775	0.101
5. Increasing and securing income	correlation coefficient	0.080	0.026	-0.256	-0.216	-0.280	-0.421	-0.204	-0.114	-0.069
	p-value	0.172	0.655	0.000***	0.000***	0.000***	0.000***	0.000***	0.052	0.237
6. Securing and training of doctors and other medical staff	correlation coefficient	0.079	-0.115	-0.404	-0.318	-0.347	-0.309	-0.197	-0.112	-0.099
	p-value	0.175	0.051	0.000***	0.000***	0.000***	0.000***	0.001***	0.055	0.089
7. Appointing people with a strong sense of management	correlation coefficient	0.093	-0.134	-0.323	-0.315	-0.366	-0.358	-0.152	-0.031	-0.020
	p-value	0.110	0.022*	0.000***	0.000***	0.000***	0.000***	0.009**	0.593	0.729
8. Strengthening human resource development for administrative staff.	correlation coefficient	0.053	-0.168	-0.298	-0.300	-0.358	-0.397	-0.131	0.006	-0.006
	p-value	0.367	0.004**	0.000***	0.000***	0.000***	0.000***	0.025*	0.923	0.915
9. Reviewing remuneration system, including salaries and allowances	correlation coefficient	0.144	-0.207	-0.299	-0.319	-0.320	-0.290	-0.213	0.011	-0.074
	p-value	0.013*	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.854	0.206

Note: Among the correlation coefficients, the combinations with the largest negative coefficients per region were shaded, bolded, and underlined; the second-largest negative coefficients were shaded and underlined, and the third-largest negative coefficients were shaded. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively.

The second strongest restriction on discretion in each area of management efficiency is suggested to be the chief executive's office. This has the largest negative correlation coefficient in three areas, namely introducing private sector management methods (-0.402), appointing human resources with good management sense (-0.366), and reviewing compensation systems such as salaries and allowances (-0.320). In addition to that, the six areas with the largest negative correlation coefficients are curbing facility and equipment maintenance costs (-0.376), strengthening human resource development of administrative staff (-0.358), reducing and curbing recurring medical expenses (-0.351), securing and training medical staff such as doctors (-0.347), reviewing the scale and form of business (-0.324), and increasing and securing income (-0.280). The free text contained some comments, such as management encountering opposition from the chief's administrative staff, even when they propose various reforms. It takes time to convince them, and they interfere without any expertise.

The third most influential factor on managerial discretion is the chief. Chief executives have the highest negative correlation coefficients in the two areas of securing and training medical staff such as doctors (-0.404) and introducing private management methods (-0.402). They also have the third largest negative correlation coefficient in the four areas of appointing human resources with a good sense of management (-0.323), reducing or curbing ordinary medical expenses (-0.317), reviewing the compensation system for salaries and allowances (-0.299), and increasing or securing income (-0.256). In the free text, some respondents said they were unable to obtain the approval of the head of the city for salary increases to secure doctors, hospital consolidations and closures, and large-scale investments, or that they were unable to implement these measures because the head of the city strongly opposed them.

The influence by congress is relatively low compared to that of the house secretariat, the chief executive's department, and the chief executive. Nevertheless, Congress has the second-highest negative correlation coefficient (-0.319) concerning the revision of compensation systems such as salaries and allowances and the third highest negative correlation coefficient (-0.329) for curbing the cost of facilities and equipment maintenance, securing and training medical staff such as doctors (-0.318), strengthening the human resource development of administrative staff (-0.300), and reviewing the scale and form of business (-0.295). When the council does not cooperate with management, efforts to improve management, which can only be realized by changing the ordinance in the council, do not progress.

Although legal constraints and hospital medical staff also have statistically significant negative correlation coefficients in several areas, they do not seem to limit managerial discretion to a greater extent than the factors we have examined so far. The results also suggest the influence of university medical offices on managerial discretion is very small.

Although many managers considered the reimbursement system (mean value 3.38) to be strongly limiting their managerial discretion, it did not have a statistically significant negative correlation with the discretion regarding managerial efficiency. This result suggests that the discretion of each domain is hardly affected by the medical fee system. Let us take the example of the introduction of private management methods. It is unlikely that the reimbursement system would restrict the introduction of private sector management methods by a hospital operator. Thus, we do not expect to find statistically significant negative correlations in other areas.

We will now examine the relationship between total managerial discretion, which is the sum of the discretion in each area, together with the factors that limit it. Specifically, the magnitude of overall managerial discretion, which is the sum of the responses in the nine areas related to managerial efficiency, is the explained variable (Y: number of respondents = 290, mean = 26.82, median = 27, standard deviation = 7.01, minimum = 9, maximum = 45). A multiple regression analysis was conducted using eight factors that influence managerial discretion, including legal constraints, influence from the chief, etc., and a dummy variable indicating whether all the factors apply (X1 to X9) as explanatory variables (Table 7). The number of responses for which the necessary data for multiple regression analysis were available was 280. The maximum value of the variance intensification factor (VIF) was 2.43 for the influence from the legislature (X3), which indicates there is no problem with multicollinearity.

The results of the analysis showed that the signs of the partial regression coefficients for the influence from the in-house clerks (partial regression coefficient = -2.17), the chief's influence (partial regression coefficient = -1.06), and the chief's department or main office's influence (partial regression coefficient = -0.81) were negative and statistically significant. This implies that the influence from the hospital office, chief executive, and chief executive's department significantly limits the overall discretion of management. This result is consistent with the findings of previous studies [9, 10]. We believe this result was obtained because managerial discretion is ensured when hospital administrators, chief executives, and chiefs' departments cooperate, but managerial discretion is strongly limited when they refuse to cooperate.

The status of the application of the Local Public Enterprises Law will be discussed in detail in the next section as Q3 is addressed.

Table 7.
Multiple regression analysis of overall managerial discretion and factors limiting the discretion.

Dependent variable: Overall level of managerial discretion				
Explanatory variable	**Partial regression coefficient**	**Standard error**	**t-value**	**p-value**
Section	37.76	1.54	24.54	0.000***
Legal constraints	0.31	0.37	0.83	0.407
Influence from the chief	-1.06	0.44	-2.39	0.017*
Influence from congress	-0.69	0.48	-1.42	0.156
Influence from the chief executive's office	-0.81	0.39	-2.05	0.041*
Influence from the hospital office staff	-2.17	0.40	-5.37	0.000***
Influences from medical professionals in the hospital	-0.08	0.42	-0.19	0.849
Influence from the university medical office	0.14	0.30	0.47	0.636
Impact of the Medical Fee System	0.19	0.33	0.58	0.565
Dummy for full application of the Local Public Enterprises Law	0.88	0.70	1.25	0.211
No. of respondents	280			
Modified R2	0.34			
R2 (Variance explained ratio)	0.36			
F	16.76***			

Note: *** and * denote statistical significance at the 1% and 10% levels respectively.

5.4. Comparison of Managerial Discretion Between Fully and Partially-Qualified Hospitals

In Section 3, we noted the managerial discretion of municipal hospital managers varies greatly depending on the application status of the Local Public Enterprises Law. However, the question presented in Q3, i.e., "Is there a difference in managerial discretion depending on whether the Local Public Enterprises Law is partially or fully applied?" has not, thus far, been examined using quantitative data. With this issue in mind, this paper compares the discretion of managers of fully-applied hospitals, which are considered to have relatively greater managerial discretion, with that of managers of partially-applied hospitals, whose managerial discretion is considered to be more limited.

Table 6 shows the correlation between the dummy variables—1 for hospitals to which the Local Public Enterprises Law is fully applied and 0 for partially applied hospitals—and managerial discretion in the nine domains. Since hospitals with full coverage should have greater managerial discretion, we would expect to find a statistically significant positive correlation. The only statistically significant positive correlation among the nine items was the review of the remuneration system for salaries and allowances. In hospitals with partial coverage, the authority of management over salaries and allowances is strongly limited legally, and management has minimal discretion over salaries and allowances. On the other hand, in fully-applicable hospitals, management has a wide range of discretion to make changes [9]. These differences in legal restrictions appear to be positively correlated.

Table 8 shows the results of separately tabulating the managerial discretion of hospitals with full coverage and those with partial coverage. The results of the cross-tabulation are shown in percentages, and the χ-square test was also conducted, and the results are shown. As with the correlation analysis, the cross-tabulations do not show any statistically significant differences except for the revision of the compensation system for salary and allowances. Regarding the review of the remuneration system for salaries and allowances, about half the managers of partially covered hospitals recognize that they have no discretion at all, while more than 30% of the managers of fully covered hospitals give the same answer. In addition, more than 10% of the managers of partially-applied hospitals and more than 20% of the managers of fully-applied hospitals answered that the degree of discretion was neither large nor small. Even among the managers of fully applied hospitals, more than 15% answered that they had discretion (4 or 5). Even though there was a statistically significant difference between the managers of partially applied hospitals and those of fully applied hospitals, most managers of fully-applied hospitals seem to consider they do not have a great deal of discretion in reviewing the compensation system for salaries and allowances.

We analyzed not only the magnitude of individual discretion but also that of overall managerial discretion as seen in Table 7, but the partial regression coefficient for the dummy for the full application of the Local Public Enterprises Law was not statistically significant. This result may be because the application status of the Local Public Enterprises Law has little impact on managerial discretion in areas other than the review of compensation systems such as salaries and allowances.

Table 8.
Comparison of the degree of managerial discretion by the partial and full application.

Variable name	Partially/fully applicable	Respondents	Average value	S.D.	Degree of discretion (%)					Chi-square statistic	P-value
					No discretion at all.		Can't say either way		You have complete discretion.		
					1	2	3	4	5		
1. Introducing private sector management methods	Partially applied	128	2.77	1.18	21.1	14.8	34.4	25.0	4.7	2.725	0.605
	Fully applied	167	2.80	1.12	16.2	20.4	36.5	21.6	5.4		
2. Reviewing business scale and format	Partially applied	126	2.60	1.13	22.2	23.0	30.2	22.2	2.4	5.134	0.274
	Fully applied	167	2.81	1.08	14.4	21.0	38.3	21.6	4.8		
3. Reducing and controlling recurring medical expenses	Partially applied	127	3.41	0.84	1.6	11.8	37.0	43.3	6.3	3.222	0.521
	Fully applied	167	3.40	0.97	4.2	12.6	31.7	41.9	9.6		
4. Curbing facility and equipment maintenance costs	Partially applied	128	3.25	0.91	5.5	10.2	43.8	35.2	5.5	4.884	0.299
	Fully applied	167	3.32	0.97	3.6	15.6	35.9	35.3	9.6		
5. Increasing and securing income	Partially applied	128	3.56	0.79	0.0	9.4	34.4	46.9	9.4	6.843	0.144
	Fully applied	167	3.69	0.82	1.8	4.2	30.1	50.6	13.3		
6. Securing and training doctors and other medical staff	Partially applied	128	3.31	1.04	7.8	10.9	32.0	40.6	8.6	3.270	0.514
	Fully applied	167	3.48	1.05	5.4	10.8	29.3	39.5	15.0		
7. Appointing people with a strong sense of management	Partially applied	128	2.68	1.18	20.3	22.7	32.0	18.8	6.2	5.799	0.215
	Fully applied	167	2.90	1.20	13.8	26.3	25.1	25.1	9.6		
8. Strengthening human resource development for administrative staff	Partially applied	128	2.62	1.16	19.5	29.7	25.8	19.5	5.5	2.359	0.670
	Fully applied	167	2.74	1.09	13.2	31.1	29.9	20.4	5.4		
9. Reviewing remuneration systems, including salaries and allowances	Partially applied	127	1.91	1.12	48.0	29.1	10.2	9.4	3.1	10.31	0.036*
	Fully applied	167	2.24	1.16	33.5	28.7	22.2	11.4	4.2		

Note: * $p < 0.05$.

The results of the above analysis indicate that the full application of the Local Public Enterprises Law is not a sufficient condition to ensure the discretion of managers. The free text contained several opinions that they could not exercise their discretion even though they were business managers. For example, "Although our hospital has full coverage, it is in name only. There is no personnel authority, including the manager, and, of course, no budget authority" (excerpt from free text). Considering the results of the analysis in Section 5.3, it may be necessary to prevent the negative influence of the chief executive and administrative staff both inside and outside the hospital at the management's discretion. Conversely, receiving sufficient support from these individuals is likely to be necessary for managers to manage with discretion.

6. Discussion

6.1. Conclusion

This study addressed three research questions about the managerial discretion of municipal hospital managers. The first research question was, "How much discretion do the managers of municipal hospitals have?" From the questionnaire survey we found that the managers have a great deal of discretion in increasing and securing income, securing and training medical staff such as doctors, and reducing and controlling recurring medical expenses, but do not have discretion in reviewing compensation systems such as salaries and allowances, strengthening the human resource development of administrative staff, reviewing the scale and form of business, introducing private sector management methods, and appointing personnel with a good sense of management. In particular, discretion to review the remuneration system, including salaries and allowances, was strongly restricted.

The second research question was, "To what extent is the discretion of the management of municipal hospitals limited and by what factors? Many managers reported that legal constraints and the reimbursement system had significant impacts on their discretion. We also analyzed correlations between discretion in each area of management efficiency and its limiting factors. The results suggested that hospital administration, the chief's department, and the chief may impose broad and significant limitations on management discretion.

The third research question was, "Is there any difference in managerial discretion between partial and full application of the Local Public Enterprises Law?" The full application of the Legal Public Enterprises Law may have affected the discretion of the managers only when related to the review of the remuneration system such as salaries and allowances. Multiple regression analysis using other disincentive factors, the presence of the total application as explanatory variables, and the overall size of discretion as the dependent variable indicated that the total application of the law did not affect the overall magnitude of discretion and that the influences from the head of the department and directorate office may be significant.

6.2. Implications for Academics and Practitioners

The results of this study are consistent with those of previous studies. For example, Bajpai [9] points out that mutual understanding with the chief executive, administrative staff both inside and outside the hospital, and support from them is indispensable to promote reform in municipal hospitals. In addition, Ghosh [10] points out that stakeholders in municipal hospitals are amateurs in healthcare and hospital management, which hinders hospital management reform. In this study, we were able to confirm this through the analysis of questionnaire survey data. In addition, the Ministry of Health and Family Welfare (MoHFW) states the full application of the Local Public Enterprises Law will significantly increase the discretion of municipal hospital managers [12]. It also points out that "in the operation of the system, particular attention needs to be paid to clarifying the substantial authority and responsibility of the business manager," suggesting that the full application of the Local Public Enterprises Law alone may not ensure substantial discretion of the business manager. This is an important finding of this study and is consistent with the findings of the MoHFW that simply changing the management form from partial application to full application does not ensure greater managerial discretion.

6.3. Limitations and Future Research

Although this study revealed information about the discretion of municipal hospital managers and the factors that inhibit it, there are some limitations. First, this paper focused on the problem of managers' inability to exercise their discretion due to various interferences from stakeholders but did not examine the aspect of managers exercising leadership, negotiating and coordinating with stakeholders, and expanding their managerial discretion. It will be necessary to conduct further research focusing on the process by which managers proactively expand their managerial discretion. Improvements to be made were also identified in the questionnaire. Although the questionnaire was carefully designed through interviews and pre-testing, some results seemed to indicate the intention of the questionnaire was not accurately conveyed to the respondents. For example, some managers responded that they had "complete discretion," even in some of the applicable hospitals, regarding their discretion on "review of compensation systems such as salary and allowances." It is unlikely that managers of hospitals with partial coverage have complete discretion when their discretion on salaries is legally restricted, and the intention of the question may not have been accurately conveyed to the respondents. In the future, it will be necessary to develop more precise questions. Another limitation of this study is that the information from non-managers was limited. We did not conduct the questionnaire survey for stakeholders other than business managers and hospital directors. One of the promising directions for future research is to survey other stakeholders to clarify the mechanisms that inhibit managerial discretion within municipal hospitals from multiple perspectives. The final limitation of the study relates to managerial competence. The study was conducted under the assumption that greater managerial discretion would lead to management improvement and improved financial performance. The implicit assumption is that managers have sufficient knowledge and experience to achieve management improvement. However, in the case of managers with limited knowledge and experience in management, their inadequate efforts to improve management may result in a deterioration of business performance. Bajpai

[9] noted that physicians usually lack knowledge and experience in management and acquire knowledge about management through self-education and experience after becoming a hospital manager. In the future, it will be necessary to quantitatively understand and analyze the management knowledge and experience of municipal hospital managers and to verify whether they have sufficient knowledge and experience to achieve management improvement.

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Appendix: Questionnaire (excerpt)

Please answer the following questions about yourself:

Form 1.

Your name		----------
Please select your position from the following options (multiple choices are possible).		
1. Business manager or equivalent position	2. Hospital Director	3.Other (-----)
Age		Age
Gender		Male/ Female
Years of experience as a physician		year
Years of experience as a hospital (business) manager (business administrator, hospital director, etc.)		year

Q1. In the course of promoting hospital management reform, there may be times when the business manager or hospital director tries to implement various initiatives by exercising his or her discretion but is unable to do so due to the actual limitation of discretion. Please let us know if you have had any experiences in the past where management reform required a lot of effort, took a lot of time, or resulted in insufficient or unsuccessful reform due to limited discretion in management.

- (e.g., requesting a net increase in the number of physicians to the chief executive, which was not realized; opposition to the introduction of private management methods (e.g., the introduction of strategic management, the introduction of medical marketing, the introduction of departmental cost accounting).
- (9 lines in the free notes column).

Form 2.

Factors limiting managerial discretion	**Not limiting discretion at all.**		**I don't know either.**		**Very strongly limits the discretion**
1. Legal constraints imposed on public hospitals	1	2	3	4	5
2. Influence from the Chief	1	2	3	4	5
3. Congressional influence	1	2	3	4	5
4. Influence from the Head Department (Head Office)	1	2	3	4	5
5. Influence from the hospital office staff	1	2	3	4	5
6. Influences from medical professionals in the hospital	1	2	3	4	5
7. Influence from the university medical office	1	2	3	4	5
8. Impact of the Medical Fee System	1	2	3	4	5

Q2. To what extent is your managerial discretion limited by the following factors?
Q3. How much discretion do you have in the following areas related to improving the efficiency of hospital management?
No discretion at all means that you cannot be involved in that area as a manager at all. Full discretion means that you have full decision-making power and influence in the area.

Form 3.

Area	**No discretion at all.**		**I don't know either.**		**You have complete discretion.**
1. Introduction of private sector management methods	1	2	3	4	5
2. Review of business scale and format	1	2	3	4	5
3. Reduction and control of recurring medical expenses	1	2	3	4	5
4. Reduce facility and equipment maintenance costs	1	2	3	4	5
5. Measures to increase and secure income	1	2	3	4	5
6. Securing and training of doctors and other medical staff	1	2	3	4	5
7. Appoint people with a strong sense of management	1	2	3	4	5
8. Strengthen human resource development for administrative staff	1	2	3	4	5
9. Review of remuneration system, including salaries and allowances	1	2	3	4	5