

EMES events

Sustainable development through social enterprise, cooperative and voluntary action Sheffield Hallam University, 24-27 June 2019

ESCP-7EMES-16

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This publication is based upon work from COST Action EMPOWER-SE, supported by COST (European Cooperation in Science and Technology).



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Paper presented at the 7th EMES Research Conference, Sustainable development through social enterprise, co-operative and voluntary action, 24 – 27 June, 2019, Sheffield Hallam Univ., Sheffield, UK.

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Abstract: This paper explores the contribution of governance to the work environment and service quality of Japanese healthcare. Japan has a unique healthcare system with two user-owned cooperative healthcare providers. Together the Koseiren of Japanese Agriculture and the Health and Welfare Co-op Federation of the Japanese Consumer Co-op Union manage nearly 200 hospitals with almost 50,000 beds, which is more than the total number of hospital beds in Sweden and Denmark combined. Data for this project was collected by questionnaires to the staff at eight cooperative hospitals across Japan in 2016 and compared with similar data from the staff at two public hospitals in Osaka in 2017. The staff sample from the 10 hospitals reaches a total of 6,859, for a response rate of 72.1%.

Based on the Karasek & Theorell 'demand, control, support' model we expect that more staff control over their daily work-life will promote greater work satisfaction and more satisfied staff, in turn, will provide better quality services than dissatisfied staff. Moreover, inclusive governance models not only allow the staff more autonomy in resolving everyday work-life issues and problems, they can also promote a multistakeholder dialogue that facilitates greater patient participation in their own healthcare and contributes to better service quality.

Governance proves to be an intervening factor of significant importance and this paper considers three differentiated models for governing the provision of healthcare in Japan: a democratic, multi-stakeholder model; a stewardship model and a more traditional command and control model. These models can be distinguished in terms of the autonomy given to the staff in their everyday work-life as well as patient inclusion in hospital discussions and decision-making. The participatory form of democracy and collective action found in social enterprises providing healthcare can serve as a 'best practice' for other public and private providers in Japan and elsewhere.

Key words: work environment, demand & control, governance, service quality, healthcare, cooperatives, social enterprises.

A. Introduction

Weber's ideal of modern public bureaucracy was based on a military-like hierarchal command and control model. This model became the central point of reference for the development of the public sector for most of the 20th Century. It was also adopted as a key organizational concept by industry and manufacture in advanced countries and dominated business administration until recently. Yet, it is increasingly apparent that it is both inadequate and inappropriate in the 21st Century, when services and work in the service sector have become the predominant form of production and employment. Ostrom (1996) and Osborne, et al., (2013) underline the differences between producing goods and providing services. Unlike goods, services often require the input or active contribution of the users or clients in the production process itself. This makes them co-producers of such services. Personal social services are often considered 'relational goods' by economists. If they are long-term or 'enduring welfare services', dissatisfied users will often have few if any options to exit. This makes voice more important for expressing consumer dissatisfaction and/or making suggestions to improve the service experience (Pestoff, 1998).

Healthcare in Europe and many other developed countries is now facing a complex and partly contradictory mix of challenges. Fiscal strains combined with a New Public Management agenda have caused cutbacks and calls for improved efficiency in public funded healthcare. This development is a significant contributor to a growing concern about service quality in healthcare. Other developments, such as increased demand due to an aging population and an increased level of individualization of services also add to the mix. The proposed solutions to these challenges in European healthcare help illustrate the severity of the problems. One solution suggested by market proponents is to further concentrate resources in larger production units and increase efficiency in order to 'provide more care with better quality'. The problem with this solution is that the Scandinavian countries already have some of the most streamlined healthcare sectors in the world and there is probably a limit to how 'efficient' you can make healthcare services while maintaining acceptable levels of service quality. Another possible solution would be to increase public funding, but most European countries already have the highest taxes in the world. Thus, given these alternatives, a key issue for future healthcare in Europe is to find a way to provide high quality services to a greater number of patients at a reasonable and socially acceptable cost.

A different kind of solution is reflected in the growing interest in and practice of increasing public participation in healthcare. More than a decade ago the World Health Organization (WHO) maintained that there were basically three ways or mechanisms to channel public participation in healthcare governance: 'choice', 'voice' and 'representation'. Choice mostly applies to individual decisions in selecting insurance providers and/or services. Voice tends to be exercised at the group or collective level to express public or group views. Representation implies a formal, regulated and often obligatory role in the process of healthcare governance (2005). In the United Kingdom it was recently argued that public and patient engagement in healthcare is 'an idea whose time has come' (Hudson, 2014), while the Office of Public Management states that 'co-production is the new paradigm for effective health and social care' (Alakeson, et al., 2013). Moreover, co-production can potentially combine choice, voice and representation, by actively engaging citizens in the provision of public services, at the site of service delivery (Pestoff, 2008; 2009).

Peters (1996) states that mobilizing and harnessing resources beyond the command and control of leaders in the public and private sectors becomes increasing crucial for the sustainability of society and the achievement of both public and private goals. Citizens provide critical resources today, so we need to consider how best to mobilize and harness their resources, both in their role as professional service providers and user/citizen or co-producers of public services. Moreover, he argues that in order to mobilize vast latent or currently unused resources in the public sector a participatory administration model should focus on empowering the lower echelons of the service providers and their clients that would decentralize much of the decision-making to them. This should be reflected in their work environment, work satisfaction and how they perform their daily tasks.

The optimal setting for exploring greater citizen participation in healthcare would be found in user-owned and controlled healthcare services. Unfortunately, there are very few examples of such services in Europe; however, Japan has a unique healthcare system with not just one, but two user-owned healthcare providers, (United Nations, 1997). They are the Agricultural Co-ops (Japan Agriculture, JA) or its health and social service affiliate, *Koseiren*, which mainly provides healthcare in rural areas, and the Medical Co-ops, which mostly provides healthcare in major urban areas. *Koseiren* provides healthcare services for its members and the public at 114 hospitals and 66 clinics nationwide, with a capacity of nearly 35,000 beds. Nearly 40 percent of their hospitals are located in municipalities with populations of less than 50,000 people (Kurimoto, 2015, 2018). In 2010 the Japanese Health and Welfare Co-op Federation (HeW CO-OP) brought together the medical co-ops associated with the Japanese Consumers' Cooperative Union (JCCU). Today it runs 75 hospitals with more than 12,000 beds nationwide. In addition, the Medical Co-ops operate 267 clinics, 70 dental clinics and 187 visiting nurse stations nationwide.

Comparing these two user-owned healthcare groups with public providers of healthcare in Japan, allows us to identify and isolate the factors that facilitate greater staff control over their work-life and active patient participation in their own healthcare. This research project on Co-production, Work Environment and Service Quality in Japanese Healthcare relies on several data sources. First is the Organization Study that is comprised of interviews conducted in May, 2013 with the CEOs and Board Members of the eight cooperative hospitals that agreed to participate in our study. Second is the Staff Study based on questionnaires developed to explore the relation between work-life and service quality at these eight cooperative hospitals in 2016 plus the staff of two public hospitals in Osaka in 2017. In all, we received 6,859 staff responses from these 10 hospitals, for a response rate of 72.1%. Third is the data collected by the Patient Study and Volunteer Study in 2017, also through questionnaires, at four of the cooperative hospitals included in the Organization Study and Staff Study. The Patient Study includes 631 respondents and the Volunteer Study resulted in 236 completed volunteer questionnaires gathered at the four cooperative healthcare providers. In the cooperative healthcare providers.

B. Previous research on work environment

Human resource guru, Pfeffer's latest book on management and work-life laments the fact that management practices can literally sicken and kill employees, yet they fail to improve organizational profitability or performance (2018). He notes that ill health from work place stress adversely affects productivity and drives up voluntary turn-over that costs employers and society more than half a trillion dollars per year in the US (*ibid.*, 3). He argues that the physical work environment is closely regulated and inspected in most countries, but the psycho-social work environment usually isn't. So, the costs of toxic workplaces result in social pollution that is passed on to various parts of the public health and welfare systems, not to mention

individual employees in the form of ill health. Among his lists of the ten most hazardous work-life stressors, there are some that are the focus of our project, like the lack of control at work, high work demands and receiving little social support at work (*ibid.*, 39). Pfeffer emphasizes the enormous toll of toxic workplaces and states that 'the lack of job control is the single most important predictor for developing heart disease' (*ibid.*, 154).

To rectify this dismal situation Pfeffer proposes several positive steps. First is measuring employee health and well-being both at the company and national level on an annual basis; second is highlighting and shaming the companies that are 'social polluters'; and third is capturing and recuperating the externalities they create; i.e., making them pay for the individual and social costs of their social pollution (*ibid.*, 202). He takes Walmart as an example of what he calls a 'social polluter'. He concludes that all work organizations have a choice: they can continue providing work places and implementing management practices that create physical and mental ill-heath, literally kill people, and drive up healthcare costs in the process, or they can make different choices that result in the opposite outcomes (*ibid.*, 211). Such choices become part and parcel of their corporate governance. Do their governance models only encompass the interests of a single stakeholder, the firm's owners, or can they perhaps comprise several of them, including the workers, and even their clients?

Given the relational nature of many services, including health and eldercare, our study is premised on the assumption that work environment and service quality are closely related or linked to each other. An employee who has tossed and turned all night worrying about work related problems, who feels tired and exhausted when they wake in the morning, who dreads the idea of going to work because they have little or no control or influence on the what, when, why, where and how of their daily routines, who has little chance to learn new things or advance at work, such an employee will not provide as good quality service as one who has the opposite experience and feeling about their work. Likewise, a client who experiences an unhappy, stressed or disgruntled service professional will not experience as good service quality as one being served by an employee with the opposite feelings. We intend to shed more light on the importance of such mechanisms for the relations between the staff and their clients and on how this is reflected in service quality in healthcare. In order to do so we will briefly introduce an internationally recognized work-life research model.

Karasek & Theorell (1990) note that work-life stress is related both to physical illness and lower productivity. They developed a two dimensional demand/control model to understand, analyze and explain work environment and its physical and psychosocial impacts on workers and organizations. Combining these two dimensions results in a fourfold classification of jobs, where demands are expressed by the columns and control by the rows. Low demands combined with high control result in low-strain jobs, while low demands and low control lead to passive jobs. High demands combined with high control result in

active jobs, but when control is low it produces high-strain jobs. The latter are usually considered most debilitating in work-life.

Figure 1. Psychological Demand/Decision Latitude Model.

Work-life demands and decision latitude or control:	Low	High
High	low strain	active
Low	passive	high-strain

Source: Karasek & Theorell, 1990, p. 32.

They expand their model by adding a third dimension, 'social support' at work. It refers to overall levels of helpful social interaction available on the job from both co-workers and supervisors (*ibid*.:69). They note that social support appears to provide buffering mechanisms between psychological stressors at work and adverse health outcomes. Thus, social contacts and social structure affect the basic physiological processes important both to the maintenance of long-term health as well as the acquisition of new knowledge. Accordingly, they note that "... together, these three dimensions of work activity - demand, control and social support - are capable of predicting much of the range of total variation in depression symptoms in the US population". Such symptoms increase in probability from 6% to 41%, given the right or wrong combination of these factors. (*ibid*.: 72). Later, a fourth work-life dimension concerning the nature and intensity of contacts with clients was proposed by Pestoff (1998).

C. Governance at the macro, meso and micro levels

The concept of governance gained extensive attention about 25 years ago, and became a buzz word in the social sciences. It is used in a wide array of contexts with widely divergent meanings. Van Kersbergen and van Waarden (2004) surveyed the literature and identified no fewer than nine different definitions of the concept; while Hirst (2002) attributes it five different meanings or contexts. They include economic development, international institutions and regimes, corporate governance, private provision of public services in the wake of New Public Management and new practices for coordinating activities through networks, partnerships and deliberative forums (ibid. 18–19), known today as New Public Governance (Osborne, 2010). Hirst argued that the main reason for promoting greater governance is the growth of 'organizational society'. Big organizations on either side of the public/private divide in advanced post-industrial societies leave little room for democracy or citizen influence. This is due to the lack of local control and democratic processes for internal decision-making in most large organizations. He argues that the concept of governance points to the need to rethink democracy and find new methods of control and regulation that do not rely on the state or public sector having a monopoly of such practices (ibid. 21).

Today, governance is used in many different contexts. It is employed differently at the macro, meso and micro levels, yet there are some notable similarities between the usage at various levels. From a macro

perspective, participatory governance, is related to concepts like network governance, New Public Governance, co-governance and it concerns public policy-making. In a multi-level European context, it is seen as "a method or mechanism for dealing with a broad range of problems or conflicts in which actors regularly arrive at mutual satisfactory and binding decisions by negotiating with each other and cooperating in the implementation of these decisions." (Schmitter, 2002: 53). It is posited on horizontal forms of interaction between actors who are sufficiently *independent* of each other so that neither can impose a solution on the other and yet sufficiently *interdependent* so that both would lose if no solution were found. Their regular participation results in trust and mutual accommodation. (*ibid.*) Participatory governance usually emerges as an attractive, yet second best solution when there is significant *market* and/or *state failure*. (*ibid.*: 54). It implies flexible combinations of both public and private authority by representatives of those collectivities that will be affected by the policy adopted, many of whom will be found in civil society. (*ibid.*:56) However, other roles than citizenship come into focus in participative governance, including those of rights-holders, stakeholders, shareholders, etc.

Another important consideration for discussing governance at the macro level is the role played by public administration regimes (PARs) in determining the rules of the game and setting the constraints for independent actors in the political arena in any given sector or policy field. Four different PARs were identified at play in the development of co-production in different national settings. PARs help determine the roles played by and set the constraints for the actions and activities of professional civil servants, public service clients and volunteers in a variety of ways (Pestoff, 2018b). In particular, it appears that a communitarian public administration regime is highly relevant for understanding the future development of healthcare in Japan. Given the challenges of a rapidly aging society, the national government and Ministry of Health and Welfare are actively promoting a policy known as 'Community Based Integrated Care' in both the policy arenas of healthcare and eldercare.

At the meso level, interactive governance refers to jointly managed networks and/or collaborative governance, co-management, etc. Ostrom maintains that citizenship was confined for too long to voting and consumption of public services. She notes that limiting citizens either to being voters or clients constrains them to passive roles that leave them in the hands of others, rather than being something which they can control. The latter can be achieved when citizens are attributed a more active role as co-producers of public services (1993). Therefore, she proposes a more collaborative and functional governance model that emphasizes a horizontal, two-way relationship among various participants in the community-local process, in contrast to the traditional hierarchical command and control model of public administration (*ibid*.: 230). Sicilia, *et al.* (2016) provide a good illustration of co-planning in a multi-level setting between different authorities providing services to parents with autistic children in Italy. Edelenbos & v. Meerkerk (2017) introduce three perspectives on interactive governance, particularly in an "Era of Big Society"

(2017). They comprise an *instrumental perspective* found in public administration literature, with a focus on effective governance and efficiency; a *cultural perspective* found in sociology and social psychology, with a focus on group dynamics and relationships; and a *democratic perspective* grounded in political science, with the objective of promoting legitimacy, democratic control and accountability in decision-making. However, they note that interactive governance is often subject to the "push and pull" of processes between citizens and governments. This leads them to distinguish between two main forms of interactive governance, government induced and citizen initiatives. The former is a top-down process that relies on 'citizen participation', but is strongly organized and constrained by governments, while the latter is based on bottom-up citizen initiatives and civic engagement that often stems from their dissatisfaction with government policy and action. (3)

At the micro level or governance at the point of service delivery, the concepts multi-stakeholder and co-production are relevant. Governance at the micro level refers to systems and processes concerned with ensuring the overall direction, supervision and accountability of an organization (Cornforth, 2004). Spears, et al. (2014) present six different models of corporate governance for nonprofit organizations, including principle-agent theory, democratic theory, stakeholder theory, resource dependency theory and managerial hegemony theory (Spears, et al., 2014). Both control and collaboration are essential elements of these theories. Accordingly, control helps to overcome human limitations through vigilance and discipline, while collaboration taps individuals' aspirations via cooperation and empowerment. Yet, there is always a need to balance them (ibid.). However, research shows that more than one governance model can exist side by side in the same NPO (Reuter & Wijkström, 2018).

Moreover, Sacchetti, S., (2013) argues that both governance and decision-making practices can be divided into inclusive and exclusive categories. Inclusive governance coordination structures embody awareness of the effects generated on specific stakeholders or 'publics' and on society more broadly and, therefore, they take into account both outcomes and impacts of decisions on these 'publics'. By extending impacts to encompass broader society, inclusive governance structures can activate resources from participating 'publics' and produce durable networks based on reciprocity and trust, as well as produce innovate outcomes. (16) Her combination of the inclusive/exclusive categories results in four different types of organizations that correspond roughly with three of the four types of healthcare providers found in this study of Japanese healthcare. The inclusive/inclusive are found in the Medical Coops, the inclusive/exclusive are seen in Koseiren, the exclusive/inclusive are seen in the medical corporations (not included in this study), while the exclusive/exclusive are found in public sector hospitals.

Governance can play an important role for developing new methods and models to improve work environment in healthcare in Japan. The three most central and relevant governance models for studying cooperative and public healthcare in Japan are the command and control model, the stewardship model and

the democratic, multi-stakeholder model. The command and control model is based on the Weberian ideal for public bureaucracy. The stewardship model assumes that managers want to do a good job and will act as effective stewards of an organization's resources, in collaboration with the main stakeholders. As a result, senior management and the stakeholders or members of an organization are seen as partners. The role of the board is primarily strategic: to add value to important decisions and improve organizational performance. Here board members are selected on the basis of their professional expertise, skills and contacts and they should receive proper training. By contrast, the democratic model includes ideas of open elections on the basis of one member one vote, pluralism, representation of different interests and accountability to its members. The board is often recruited from lay members and its main function is to represent the diverse interests of the organization's members. (Cornforth, 2004).

From a business administration perspective, governance models usually focus on the relationship between the board and top management of a TSO or cooperative. However, employing a more holistic or encompassing approach, based on different academic perspectives, like political science, social work or sociology, would call for broadening the focus. The CEO and board do not provide the whole picture, so we intend to include other major stakeholders in our purview. However, the CEO and board provide a natural starting point and they were interviewed with a semi-structured interview schedule in May, 2013. These eight co-op healthcare providers comprise the Organizational Study of this project. Preliminary results suggest that agricultural co-ops and the *Koseiren* comprise a stewardship model of governance, while the consumer and Medical Co-ops embody a democratic model. However, it is worth noting that these concepts are initially considered heuristic tools and it remains an empirical question how they actually differ in terms of the governance of their healthcare organizations and the role they attribute to other stakeholders, like the staff, patients and volunteers.

Figure 2. The staff's autonomy in different governance institutions.

Command & Control	Stewardship	Democratic, Multi-stakeholder
Low	Medium	High

Source: V. Pestoff, 2018.

These three models can be distinguished by the degree of autonomy given to the staff in terms of their everyday work-life and the degree of inclusiveness of various stakeholders in discussions and decision-making. Differences between them can be visualized and summarized by the step-stool figure above, where staff autonomy is represented by the vertical and inclusiveness on the horizontal axis. The higher up a governance model is on the stool the more the autonomy it gives to the staff, while the lower down on the stool the less autonomy given to the staff. The first step is a hierarchical command and control, top-down model that allows for little autonomy or discretion to either the staff or clients. Traditional public services

embody the hierarchical model. The middle step is a corporatist model based on a 70-year public private partnership in Japanese healthcare that started at the end of World War II. It provided healthcare for more than seven decades to large groups of citizens in rural areas residing well beyond the reach of public services. Finally, multi-stakeholder organizations are found on the top step that represents the highest level of autonomy and greatest inclusiveness. They embody a bottom-up democratic, multi-stakeholder model of governance that has evolved in Japan for nearly 100 years. It is worth noting that differences between these three steps or models do not simply involve the staff or the service users, but both groups together.

D. Exploring the combined effect of the Demand/Control Model for 10 Japanese hospitals

By combining the two main variables in the Karasek/Theorell work-life model, demands and control, we can explore their joint effect on work environment of the 10 Japanese hospitals in our study. The figure below shows the combined effect of Demand and Control for the staff at these hospitals. The number and proportion of respondents/staff is also indicated.

In general, about one third of the staff/respondents working at the 10 Japanese hospitals in our study are classified as having Low Strain jobs and another third as having High Strain jobs, while the remaining third is divided between Passive or Active jobs. High Strain jobs are the most risk-full in terms of negative health consequences for individual employees. They can also have negative effects in terms of service quality, according to our expectations.

Table 1. Demands and Control on/by the Staff at Japanese hospitals.

Demands/Control	Low	High
High	low strain 35.1% (2,407)	active 17.1% (1,170)
Low	passive 14.3% (992)	high strain 33.5% (2,248)

Source: Pestoff, 2018.

In addition, more than one of eight respondents is classified as having a passive job, which is characterized both by low demands and low control over daily tasks, while less than one of five has an active job. In the latter category high demands are combined with high discretion or control over the execution of daily tasks. This is considered the most beneficial work-life situation and it usually results both in good working conditions and also a healthier and longer life.

We will now examine the relationship between these four work-life situations and the indices of work environment employed by this study. The table below provides an overview of seven work environment indices that were calculated from 3 to 6 items each, for a total of 29 work environment items. It only reports the proportion of staff claiming a high value on these 29 items. These work environment indices were divided into three roughly equal parts, where a score well above or below 33.3% is usually noteworthy. The

Cronbach's Alfa and cut-off points for these indices are found in Table A in the appendix.

Table 2. Proportion of staff scoring 'high' on Indices of Work Environment, by Karasek & Theorell's Demand & Control categories.

WE Index*	% high**	Passive	Low strain	Active	High strain
Work Satisfaction	31.8	25.4	49.2	34.4	14.0
Social Support	33.0	28.1	51.9	32.2	14.7
Influence	34.4	19.1	57.0	41.4	12.9
Pers & Prof. Dev.	39.7	28.9	54.4	47.8	24.2
Work/Life Balance	33.3	30.1	47.6	32.4	19.5
Networking	26.4	20.3	30.2	31.7	21.5
Service Quality***	46.8	46.1	63.3	47.0	27.2

Source: Pestoff, 2018. *Note that they don't add to 100% either row or column-wise; **Proportion of staff with a high score on this work-life index (See Appendix A for details); ***this index was dichotomized, rather than divided into high, medium and low categories.

The difference between the highest and lowest score on most of these work-life indices is greatest for the staff found in the Low respective High Strain categories. This general pattern suggests that the difference between the proportion of staff reporting low or high strain determines the overall satisfaction of the staff and the quality of the service it provides. The goal of management and human resource officers should, therefore, be to move staff out of a High Strain into Active and then, if possible, into a Low Strain work-life situation. This can be achieved by providing them with more control over the 'nuts and bolts' of their daily work tasks, i.e, more control over what they do and how and when they do it. Organizations that best meet this challenge will not only provide its staff a better work environment, but they will have a more satisfied staff, and healthier staff members. Thus, one of the most important lessons of the Karasek/Theorell model is the necessity of giving the staff more autonomy over the contents of their daily work as a way of improving the work environment and hopefully the service quality as well.

The Low Strain category is noted for having a much larger proportion of high scores on the following work-life indices; Work Satisfaction, Social Support, Influence, Professional and Personal Development, Work/Life Balance and Service Quality. The High Strain category, by contrast, has a much lower proportion of high scores on the same indices. Their high score is only half or a third of the Low Strain staff on Work Satisfaction, Social Support, Influence, Personal and Professional Development and Work/Life Balance. In particular, the High Strain staff rate their hospital's Service Quality less than half of what Low Strain staff do. They clearly feel the pressure of high strain at work in terms of their lack of satisfaction with the quality of the service they provide.

Elsewhere we have reported in greater detail on the relation between work environment and service quality (Pestoff & Saito, 2018). There we discussed the relation between five of the work environment

indices and the Index of Work Satisfaction. They all had a medium Spearman's Rho correlation that varied between .525 and .439. We concluded, therefore, that it can serve as a surrogate for the other work environment variables. Then we considered the relation between the Index of Work Satisfaction and the Index of Service Quality. We expect work satisfaction will be positively related to service quality. Healthcare is a typical relational service, so the service they provide to their clients will depend to a large extent on the relationship between the staff and their clients, as too will be the perceived service quality.

For various levels of Work Satisfaction, we will only present the high category of Service Quality for the sake of simplicity and to reduce the amount of data to absorb. The Spearman's Rho correlation between Work Satisfaction and Service Quality is .482. Work Satisfaction seems to be related to Service Quality in a fashion that confirms our expectations. Going from the high level of Work Satisfaction to the low, we note a sharp reduction in the percent of respondents who claim a high level of Service Quality, decreasing from a high of 71.6% to a low of 23.0%, for a decrease of almost 50 percentage points. This is a rather sharp drop.

Table 3. Work Satisfaction and Service Quality.

Work Satisfaction*	Service Quality*	Percent	dif. (h-l)
High	High	71.6	
Low	High	23.0	48.6

Source: Pestoff, 2018. *Only shows the high values of each index.

E. Introducing the hospitals: work environment and service quality

Taking this analysis one step further, we will now introduce the organization type or the hospital group where the staff works. This allows us to focus on the difference between hospital groups in a given demand/control category. Table 4 introduces the specific patterns found when controlling for this in the Karasek/Theorell Demand/Control model. A separate noting exists for the difference between the highest and lowest scores, dif. (h-l) in the figure below.

A quick overview shows that there is not much difference between the staff at these 10 hospitals in terms of either passive or active jobs. A nearly equal proportion of staff at all three types of hospitals are classified as having Passive or Active jobs, and the difference between hospital groups is rather small, only 0.7 or 2.8 percentage points for these two types of work environments. By contrast, the difference between hospitals is much larger when it comes to Low Strain and High Strain jobs. In the former category, Low Strain jobs, we note a difference of 20.5 percentage points between the highest and lowest hospital group, while a similar difference is noted for High Strain jobs, 19.3 percentage points. In both these situations, the staff at Medical Co-ops is clearly in the most beneficial situation in terms of their work environment. More of them claim Low Strain jobs and fewer of them claim High Strain jobs. By contrast, the staff at public hospitals is much less fortunate. Fewer of them claim Low Strain jobs, while many more claim High Strain

jobs. Staff at the Koseiren hospitals falls in between the Medical Co-ops and public hospitals, both in terms of Low Strain and High Strain jobs.

Table 4. Demands and Control by hospital group.

Demands/Control	Low	High
	low strain MC: 43.1%	active MC: 17.1%
High	K: 33.9%	K: 16.9%
	Pub.: 22.6%	Pub.:17.6%
	passive MC: 13.4%	high strain MC: 26.5%
Low	K: 16.2%	K: 33.0%
	Pub.: 14.0%	Pub.: 45.8%

Source: Pestoff, 2018. Key: MC = Medical Co-ops, K = Koseiren & Pub. = Public.)

Similar to Table 2, the table below provides an overview of five work environment indices that were calculated from 3 to 6 items each, for a total of 29 work environment items. These work environment indices were then divided into three roughly equal parts, where a score well above or below 33.3% is noteworthy. It only reports the proportion of staff claiming a high value on these indices. The Cronbach's Alpha for these indices varies from .706 to .833, and they all show a reasonable degree of commonality between the items included in each index. More details are found in Table A in the appendix, along with the proportion of the staff getting high, medium and low scores on the work-life/work environment indices. Below we consider these indices for the three hospital groups included in this study.

Table 5. Five Work Environment Indices, plus Service Quality.*

Index name	% high**	Med co-ops	Koseiren	Public
Work Satisfaction	31.8	37.5	28.6	24.8
Demands (Reasonable)	34.8	40.5	34.0	24.1
Social Support	33.3	39.8	29.7	24.1
Pers/Prof. Development	39.7	45.9	35.6	36.4
Work/Life Balance	33.0	40.4	29.2	27.0
Service Quality***	46.4	53.0	41.8	40.5

Source: Pestoff, 2018. *Only shows the high scores for each work environment index; Note that they don't add to 100% either row or column-wise; **Proportion of staff with a high score on this work-life index (See Appendix A for details); ***Note that this variable is dichotomized, not trichotomized.

The Medical Co-ops rate highest on all these indices, Koseiren comes much lower, while the public hospitals rank lowest on all but one. Koseiren comes last on the Index of Personal and Professional Development, which probably reflects the nature of the labor market in most rural areas, where it is often

the only healthcare provider, or at least the largest. So, fewer opportunities exist in rural areas for changing jobs and/or climbing a career ladder. The difference between the Medical co-ops and public hospitals ranges from a low of 12.7 percentage points to a high of 16.4 percentage points. It is least for Work Satisfaction and greatest for (reasonable) Demands. Taken together, these five work environment indices provide evidence for the idea that the staff at Medical co-ops has much more autonomy in their daily work-life than the staff at Koseiren and public hospitals. However, the differences are less between different providers of healthcare than those found in Table 2 on work life categories.

The final item in the table was the Index of Service Quality by hospital groups. It was calculated on the basis of questions 23 and 27, and divided into two parts, high and low, rather than the usual three categories. This was due to a frequency distribution that ruled out dividing it into three categories. It shows a clear difference between these hospital groups that follows the pattern previously noted for the work environment indices. The Medical Co-ops come highest and the public hospitals lowest, while the difference between the Koseiren and public hospitals is rather small.

F. Governance models: control, influence and networking

Based on the discussion earlier in section C we expect that command and control governance institutions are hierarchical and exclusive in their nature. They leave little room for staff autonomy and allow very few degrees of freedom for the staff to take their own initiative to solve everyday problems and/or improve service quality. Moreover, there is no need for a dialog with clients or making efforts to obtain their input, since 'the experts know what is best' for their clients. Stewardship governance institutions are more inclusive and can be found in user-owned organizations that allow more room for staff autonomy and accept more degrees of freedom for the staff to take their own initiative to solve everyday problems. However, long-term public-private partnerships may erode some of their autonomy and these governance institutions can gradually assume the character of command & control governance structures (Brandsen, et al., 2017). Finally, democratic, multi-stakeholder governance institutions are most inclusive, they allow the staff greatest autonomy and permit them the most degrees of freedom to take their own initiative in solving everyday problems and/or improve service quality. Moreover, various stakeholders have both a voice and vote in deciding important strategic matters and everyday issues, as well as improving service quality (Vidal, 2013).

Therefore, we expect that these different governance models will promote more or less participatory governance. In order to explore it we will examine two indices of participatory governance from the Staff Study, i.e., the Index of Influence and Index of Control at Work. Note that only the high scores are reported here. However, they speak volumes about the governance institutions found in the hospitals included in this study. The democratic, multi-stakeholder model clearly rates best in terms of control and influence at work,

the command and control model is weakest, while the stewardship model falls in between the other two.

Table 6. Governance Models, Control, Influence and Networking at Japanese Hospitals.*

Indices	% high**	Public	Koseiren	Medical Co-ops
Index of Control	34.0	22.9	33.3	40.1
Index of Influence	34.4	23.8	31.6	42.2
Index of Networking***	26.4	16.2	21.0	35.1

Source: Pestoff, 2018. *percent providing a positive response (Agree & agree somewhat) to the items included in these indices; **Proportion of staff with a high score on this work-life index (See Appendix A for details); ***This index covers the frequency of staff contacts with the following stakeholders/groups: patients, volunteers and the local community.

Furthermore, by examining the frequency of staff discussions with other key stakeholders about important issues concerning the hospital, we can construct the Index of Networking. As might be expected, staff working at democratic, multi-stakeholder institutions claim a much higher level of frequent contacts with key stakeholders than the staff at public hospitals. Just over one third do so, which is more than twice as many as the staff at public hospitals. Staff working at the stewardship model fall in between the other two.

G. Conclusions

The Karasek/Theorell Demand/Control model of work environment presented in Figure 1 proved highly relevant for exploring the relationship between work environment and service quality in Japanese hospitals. It has clear heuristic and predictive value. Combining these two variables in Table 1 we found a pattern where nearly one third of the staff at these ten Japanese hospitals have Low Strain jobs, one third High Strain jobs, while the remainder is divided between Passive and Active jobs. Table 2 documented the impact of the four work-life or job categories on the work environment indices employed by this study. In particular, they have a clear impact on service quality, where three of five staff members with Low Strain jobs claim high Service Quality, while only one of four staff with High Strain jobs make the same claim.

We maintained that Work Satisfaction could serve as a surrogate for the six other work environment indices. Table 3 showed that Work Satisfaction was closely related to Service Quality. More than two thirds of the staff that was highly satisfied with their job said that the service quality was high, while less than one fourth of those who were least satisfied claimed high service quality. Our data clearly shows that work environment and service quality are positively related. Thus, a healthy work environment not only results in greater work satisfaction, but it promotes better service quality.

Furthermore, we argued that governance systems can help explain some of the most notable differences in work environment, work satisfaction, and service quality. Governance systems can be viewed from various angles. A key perspective is the degree of autonomy given to staff and clients to interact and resolve certain issues by themselves related to service provision and service quality. Also the degree of inclusiveness of various stakeholders or 'publics' is important to consider. We noted that three governance

models embody different levels of autonomy and inclusion in decision-making for both the staff and clients, illustrated in Figure 2. First, is a hierarchical command and control model that is usually associated with traditional public administration and that was first articulated by Max Weber. Second, is a stewardship model where the leaders and representatives of the group served make decisions on their behalf. It clearly involves more autonomy and inclusion than the first model, but not as much as the last one. Third, is a more horizontal, multi-stakeholder model that attributes greater autonomy to both the staff and their clients to resolve some key issues about service provision and quality, together, themselves.

The first step is a hierarchical command and control, top-down model that allows for little autonomy or discretion to either the staff or clients. Traditional public services embody the hierarchical model. The middle step is a corporatist model based on a 70-year public private partnership in Japanese healthcare that started at the end of World War II to provide healthcare to large groups residing well beyond the reach of the public services. Finally, multi-stakeholder organizations are found on the top step that represents the highest level of autonomy. They embody a bottom-up democratic model of governance that has existed and evolved in Japan for nearly 100 years. It is worth noting that differences between these three steps or models do not simply involve the staff or the service users, but both groups together. To achieve the highest level of autonomy and become viable they both need to be present and actively involved.

Finally, Table 6 considered control and influence at Japanese hospitals in relation to governance models. Democratic multi-stakeholder models promoted greater control and influence than either the stewardship or command and control model. It also presented data about the frequency of contacts with three key stakeholder groups: patients, volunteers and the local community. It demonstrates that staff at a democratic multi-stakeholder model has more inclusive discussions with its key stakeholders about hospital affairs than the other hospital groups.

It follows from this configuration that the governance model made an impact on the work environment. Staff with greater autonomy was more satisfied than those with less autonomy, as seen in some of the tables presented in this paper. This, in turn, can have a positive or negative impact on perceived service quality. It suggests that governance models are an important intervening variable between work environment and service quality. Thus, governance models, rather than ownership *per se*, appear to require closer attention in research on work environment and service quality in healthcare and other public financed services. However, different ownership constellations might learn from the best practices found in these separate governance models. Moreover, in the next round of analysis, we intend to consider the patient and volunteer data to confirm or reject the picture provided by the staff concerning service quality.

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Table A. Reliability scaling for work-life indices and cutting points for High, Medium & Low or High/Low categories.

Index	variables	Cronbach's Alpha	Cut points for 3 parts	% high	% med.	% low
Work Satisfaction	10.3, 11.1, 11.2, 11.3, 11.4, 11.5	.877	2.00 & 2.83	31.8	34.3	33.9
Work Demands	12.1, 12.2, 12.3, 12.4 & 17.1, 17.2	.748	2.67 & 3.50	34.8	30.6	31.5
Soc. Sup.	13.1, 13.2, 13.3, 13.4	.833	2.00 & 3.25	33.0	35.9	31.1
Control	14.1, 14.2, 14.3, 14.4	.855	2.50 & 3.33	34.0	31.5	34.5
Influence	15.1, 15.2, 15.3	.912	2.00 & 3.33	34.4	39.7	25.9
Pers. Dev.	16.1, 16.2, 16.3	.758	2.33 & 3.33	39.7	32.4	27.9
Wk/life bal.	18.2.1, 18.2.2	.811	2.00 & 3.50	33.3	39.5	27.2
Networking	20.1, 20.2, 20.5	.636	2.33 & 3.33	26.4	36.1	37.5
			Cut point for 2 parts*			
Demands	12.1, 12.2, 12.3, 12.4 & 17.1, 17.2	.748	3.0/3,17	50.1		49.9
Control	14.1, 14.2, 14.3, 14.4	.855	2.75/3.00	52.5		47.5
Serv. Qual.	23 & 27	.706	2.00/2.50	46.4		53.6

^{*}these indices were only divided into two categories, high and low.

Ch. 10; WE, Gov & SQ, 619.

ⁱ. The data collection was financed by the Japanese Society for the Promotion of Science (JSPS) and the Mitsubishi Foundation, and it was supervised by Prof. Yayoi Saito, Osaka University and the Consumer Co-operative Institute of Japan (CCIJ). The project is conducted within the framework of an established cooperation between senior researchers at Ersta Sköndal Bräcke University College in Stockholm (Prof. V. Pestoff & doc. J. Vamstad) and the Faculty of Human Sciences, Osaka University (Prof. Y. Saito). This interdisciplinary group of Swedish and Japanese researchers is supported by a reference group of the relevant cooperative healthcare providers in Japan, Koseiren and the Japanese Health and Welfare Co-operative Federation HeW CO-OP JAPAN.

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