



Title	A Correlation Analysis of the Questionnaire Survey on Coworking Spaces in Japan
Author(s)	Abe, Tomokazu; Uda, Tadashi
Citation	Discussion Paper, Series A, 299, 1-61
Issue Date	2016-02
Doc URL	http://hdl.handle.net/2115/60720
Type	bulletin (article)
File Information	DPA299new.pdf



[Instructions for use](#)

Discussion Paper, Series A, No.2016-299

A Correlation Analysis of the Questionnaire Survey
on Coworking Spaces in Japan

Tomokazu Abe and Tadashi Uda

February.2016

Graduate School of Economics &
Business Administration
Hokkaido University
Kita 9 Nishi 7, Kita-Ku, Sapporo 060-0809, JAPAN

A Correlation Analysis of the Questionnaire Survey on Coworking Spaces in Japan

Tomokazu Abe and Tadashi Uda

Graduate School of Economics and Business Administration, Hokkaido University

Abstract

The purpose of this paper is to analyze correlations about the actual condition of coworking spaces in Japan, based on a questionnaire survey. A way of working called “coworking” and a place for such work called “coworking space” have been attracting attention in recent years because they may provide a more flexible work style, diverse members to interact with, and open spaces than are experienced when working in a specific company or corporate office. However, the understanding of this phenomenon is insufficient. There is still hardly any empirical research that discusses the actual conditions of coworking and coworking spaces especially in Japan, though we can find some implicative descriptive papers on this phenomenon. Thus, we attempt to shed some light on the current status of coworking spaces in the following steps. Firstly, we review previous studies about coworking, focusing primarily on the annual Global Coworking Survey conducted around the world. Secondly, we show the result of correlation analysis based on a questionnaire survey conducted among almost all coworking spaces operating in Japan from six viewpoints: facility, management organization, business strategy, activity, space users, and performance.

Keywords: Coworking, Coworking Space, Correlation Analysis, Complete Enumeration

1. Introduction

This paper aims to shed light on the current status of coworking space in Japan based on a questionnaire survey. Specifically, we conduct an online survey, analyze the data obtained from 152 out of 365 spaces—nearly all the operating facilities in Japan (as of July 2014)—and show the results of the correlation analysis relating to the current status of those spaces from six perspectives: facility, management organization, business strategy, activity, space users, and performance.

The term “coworking” refers to a “way of working in which individual workers gather in a place, share information and wisdom through communication, and create value while cooperating as needed” (Uda, 2013), and “coworking space” refers to a workspace physically shared by individuals practicing coworking.

This way of working and its spaces have been attracting attention because they may be able to provide a more flexible work style, diverse members to interact with, and open spaces than are possible for those working in a company or corporate office. Coworking spaces have been established one after another in many countries, running to approximately 7,800¹ worldwide and more than 350 in Japan today. However, the current understanding of coworking and coworking spaces is insufficient. Therefore, this paper shows the actual condition of coworking spaces in Japan based on a questionnaire survey, in order to contribute researchers in related fields, space managers of coworking spaces, and those attempting to enter the industry.

The rest of this paper is structured as follows: Section 2 reviews previous studies on coworking. Section 3 explains the method used in this paper. Section 4 describes the results of a correlation analysis of the data collected using the method described in Section 3. Section 5 summarizes the discussion up to Section 4, presents the significance of this paper, and suggests future research issues.

2. Previous Studies

2.1 Theoretical trends on coworking

It is said that the way of work called “coworking” and its work space, called “coworking space,” began when Brad Neuberg, who was working as a freelance engineer, opened the space at Spiral

¹ See the facebook page of *Deskmag*: (<https://www.facebook.com/deskmag.coworking/photos/a.208558519173827.61310.186275991402080/1166979896665013/?type=3&theater>). *Deskmag*, an online magazine about coworking, conducts the *Global Coworking Survey* described later.

Muse in San Francisco on August 9, 2005 and began working with his friends.² Afterwards, similar attempts were made in the United States, primarily in large cities, as well as in Europe and other regions. As a result, close to 7,800 spaces worldwide—mainly in the United States and Europe—are in operation and are used by approximately 300,000 people³, as described earlier. More than 350 facilities have been offering the service in Japan since Tomio Ito opened Cahootz in Kobe in 2010, merely five years ago.

Thus, the phenomenon of coworking and coworking space is steadily spreading not only in the United States and Europe but also in Japan and other countries. As a result, various media are discussing the history, current state, and outlook of coworking. However, very few studies have empirically examined the actual condition of coworking or coworking space.

Needless to say, suggestive findings are being accumulated in Japan and overseas, albeit gradually. For example, Spinuzzi (2012) focused on nine coworking spaces located in Austin, Texas and attempted to explain the three research questions of “what is coworking,” “who coworks,” and “why do people cowork” based on interviews with 16 space managers and 17 users. As a result, the facts as follows were ascertained. Firstly, while space manager’s definition of “coworking” can be summed up as “community work space,” “unoffice,” or “federated spaces,” the users’ definitions—such as “alternative office space” or “social hub”—tend to be diverse and differ from those of space managers. Secondly, although space managers expected users who shared their own backgrounds, the users actually worked in a various industries and capacities. Lastly, users expect to get things like good locations and partnerships between users, and interaction.

Meanwhile, directing our attention to Japan, Arimoto, Matsumoto, Matsumoto, Kidosaki, and Naka (2012), classified spaces in Japan based on secondary sources and summarized the work styles of seven users based on a diary survey and interviews in an attempt to understand the current state of coworking. The results indicated that the 54 coworking spaces verified at the time of the study could be grouped into five categories—-independent type (48%), cafe/bar type (17%), corporate in-house type (5%), shared office type (17%), and other (13%)—based on their characteristics. The results also showed tendencies such as “spaces are likely to be used from early afternoon to early evening.”

In addition, Watanabe, Matsumoto, Matsumoto, Kidosaki, and Naka (2012) used data collected

² See the website on the history of coworking presented by *Deskmag*: (<http://www.tiki-toki.com/timeline/entry/156192/The-History-Of-Coworking-Presented-By-Deskmag/#vars!panel=1505040!>). For details on the development of the phenomenon of coworking, see Uda (2013) and Hanibuchi (2014).

³ See *Deskmag*’s article of December 19, 2014: (<http://www.deskmag.com/en/these-major-coworking-conferences-events-barcamps-will-take-place-in-2015>).

from 40 users through an online survey and examined factors that influenced them when choosing a space. The results showed that being available for use at all times as well as factors such as specialty and personality of the owner affected the choice of space.

Furthermore, after summarizing and examining the status of 23 spaces in Japan, Nakamura (2013) attempted to classify the spaces on two axes: the purpose of operation (specific purpose-oriented vs. community-oriented) and the style of use (drop-in style vs. tenant style). The results showed that coworking spaces are evolving from the drop-in/community-oriented type to the tenant/specific purpose-oriented type. It also presented seven space operation issues, such as the method of community formation in the space and the development of profit-generation systems.

Most of the research in Japan is being pursued in fields such as architecture and business management. Particularly worth noting is Hanibuchi (2014), which systematically and empirically examined coworking and coworking space. After clarifying the actual condition of coworking space as a place to work together, Hanibuchi discusses the effect that those spaces have on people's social relationships as well as cities and regions. Specifically, he describes the current status of the operation and usage of the spaces based on interviews with space managers as well as a survey and interviews conducted among users,⁴ discusses the analysis results, and makes policy recommendations by citing social capital as well as the creative city theory. In terms of space operation, the results showed that space managers value community formation and the diversity of members, face more difficulties in operating a space than in opening a space, and are more conscious of their relationship with the local government in rural areas than they are in urban areas. Meanwhile, in terms of the usage of space, numerous suggestive findings have been presented, such as the fact that primary users tend to be in their 30s (46.4%), male (82.8%), in professional or technical fields (e.g., engineers, software developers; 51%), and freelancers (46.9%).

However, there might be a certain regional bias in the data Hanibuchi relied on, which were collected mainly from spaces located in Nagoya and special districts in Tokyo as well as from their users. Therefore, the findings are unlikely to be fully in line with the actual condition of coworking and coworking spaces in Japan.

In addition, the other aforementioned Japanese studies are based on surveys with limited scopes

⁴ Specifically, interviews with 11 space managers (including five in Nagoya, three in special districts in Tokyo, and three in other regional cities), a survey among users at five spaces (including two locations in Nagoya, one location in a special district in Tokyo, and two locations in other regional cities), and interviews with five users (in Nagoya) were conducted.

or limited target populations and thus do not present a clear picture of this phenomenon.⁵

Under these circumstances, the *Global Coworking Survey* (GCS), conducted annually since 2010 by *Deskmag*, is a very valuable information source for understanding the overall picture and its changes on a global scale. Therefore, we will review the findings of the GCS in the next section.

2.2 Global Coworking Survey

The GCS is an annual survey on coworking conducted globally by *Deskmag*. The purpose of this survey is to describe the state of coworking spaces themselves, their users, space managers, and potential users.

The first survey, conducted in December 2010, collected data from 661 individuals in 24 countries. The second survey was conducted from October to November 2011 and, though using fewer questions than the first survey, collected data from more than 1,500 individuals in 52 countries. The third survey was conducted between October and November 2012 and collected data from 2,007 individuals. The fourth survey, conducted from November to December 2013, collected data from 2,706 individuals. The fifth survey was completed in December 2014.

Here, we will focus on the first through third surveys, which published summary reports, and discuss them from six perspectives: facility, management organization, business strategy, activity, space users, and performance. By focusing on these, we should be able to comprehensively understand the current state of coworking space.

Facility⁶

The average number of desks has been trending upwards from 38, to 40, and then to 41 from the first survey to the third. While the number of desks is less than 19 at nearly one third of the spaces, it is over 50 at one fourth of them. Looking at it by region, while the average number of desks at spaces in Europe is 34, it is 43—almost 30% more—at spaces in the United States. Whereas two thirds of the spaces in the United States have a capacity of over 30 people, comparable spaces account for less than one third of spaces in Europe.

⁵ Other studies on coworking include studies such as Kobayashi (2011), which discussed the establishment of the library as a coworking space (it mentions that people were practicing the idea before the concept of coworking emerged) and Koizumi, Sasai, Ikeda, and Motoe (2012) and Koizumi, Ikeda, and Motoe (2013, 2014), which revealed the current status of fabrication facilities typified by Fablab. However, since the former is a single case and the latter is a series of case studies focused on fabrication facilities, they all have the same limitations as the aforementioned studies.

⁶ Here, refer to the first GCS unless otherwise noted.

In terms of facility usage, while one half of spaces in the United States use flexible desks, only one third of spaces in Europe do. Notably, only 7% of all spaces provide private rooms as main offerings.⁷

On average, it takes seven months to open a facility.

Management Organization⁸

The average number of staff members at the time of opening a space was 2.8. Looking at it by facility size, while one third of small spaces with less than 10 members were opened by one individual, 2.2 individuals were involved on average. For spaces that offer more than 50 seats, four individuals are involved in opening. The survey also indicated that the number of space managers tends not to increase as the number of members increase.

In terms of the entity that operates a space, 80% are private, 13% are NPO (Non-profit Organization)s, and the remaining are government-related organizations. In addition, 74% of space managers have a second job.

The average cost of opening a space is 46,500 euros in Europe and 58,000 dollars in the United States; the levels of investment are thus quite similar, considering the foreign exchange rate. As for the procurement of opening funds, two thirds used their own funds. Those who used bank loans and funding from venture capital were in the minority, accounting for 13% and 5%, respectively. Only a few spaces opened by using crowdfunding or government aid. Incidentally, cases of self-funding are relatively rare among large spaces; in many cases, they use bank loans and private investments.

As for length of time the space has been in operation, although the average is 18, more than 50% of the spaces have been in operation for less than 12 months. The results by region are not very different: 16 months in Europe and 18 in the United States.

Business Strategy⁹

Coworking space's strongest competitor is the home office. Specifically, while most (58%) users have switched their workplace from the home to a coworking space, those who transitioned from corporate offices accounted for only 22%, and the rest accounted for even smaller percentages. The survey also shows that about 5.3 coworking spaces were operating within the same city.

⁷ The second GCS.

⁸ *Ibid.*

⁹ *Ibid.*

Furthermore, the vast majority (83%) of the spaces interact with other spaces in the region or local community; only a few (10%) spaces do not communicate at all with anyone else.

Activity

The average number of events held at a space per month is 4.5. However, while 21% of all spaces hold two events on average, 15% hold 10 events or more. By region, spaces in the United States hold events more frequently—seven times per month on average—than spaces in Europe, where an average of five events are held per month. Regarding size, the GCS also reports that the event participation rate is higher among spaces with a capacity of 50 people or more.¹⁰

Regarding the type of events, events for facilitating some kind of networking (e.g. common meals), workshops (e.g. legal advice, intro to coding), and presentation/information sessions each accounts for a large percentage: 75%, 72%, and 65%, respectively.¹¹

Space Users¹²

First, we will direct attention on the findings related to the attributes of users. The average age of users is 34.¹³ Most (78%) users are under the age of 40, and those under 30 account for 41%. By region, the average age is 34 in Europe and Canada and 33 in the United States, showing almost the same results. Regarding the size of the city where spaces are located, the average age is 32 in cities with a population of one million and 43 in cities with a population of less than 20,000 people, showing a gap of about 10 years.

In terms of the employment status of users, 54% are freelancers, 20% are entrepreneurs who employ others, and 20% work as a permanent employee (most working at a company with fewer than five employees¹⁴). By age group, while some coworking space users in the older segment (aged 50 to 64) are freelancers and some coworkers in the younger segment (aged 20 to 34) are employees of large companies, there are also many small business entrepreneurs. By region, about two thirds of the users are freelancers or small business owners in both Europe and the United States, which is below the average. Usage by company employees is relatively high (35% in the United States, for

¹⁰ *Ibid.*

¹¹ The third GCS.

¹² Refer to the first GCS unless otherwise noted.

¹³ The result in the second survey remained the same, at 34 years old. That said, it has been noted that the user base is expanding to both older and younger segments.

¹⁴ Those who work for companies with more than 100 employees account for 8% of the users in the United States.

example).

Regarding occupation, web development/design (44%) and public relations/marketing (13%) are relatively common. Overall, most users are in technical professions. Looking at it by age group, 42% of younger coworkers are web or IT developers. This figure drops to 25% among middle-aged users and down to 12% among older users. Meanwhile, we can find more consultants, PR experts, designers, and journalists in the older segment. By region, while in Europe there are slightly less programmers in coworking spaces than in North America, and a few more people working as architects and consultants in Europe.

The average number of members trends up from 38 to 44 between the second and third surveys. By region, the average number of members is 30 and 44 per space in Europe and the United States, respectively.¹⁵ Two-thirds are male.

Next, we will focus on the findings about the behavior and attitude of users. Concerning the meaning and value of coworking space, almost all (96%) users said that the community was valuable for space members. In addition, interactions with other people (84%), flexibility of the hours of use (83%), and the encouragement of serendipitous discoveries (82%) were mentioned as being important elements for coworkers.¹⁶

In fact, 81% of the users in the first survey expressed a desire for a strong community;¹⁷ three quarters expressed a longing to share knowledge with others and look for the community in the space in the second survey. This is associated with the fact that 51% want a relatively small space with less than 20 people. In addition, many respondents prefer to use spaces with flexible hours of work (use): only 30% want traditional hours of work (use). In Europe, 96% consider the flexible working hours to be important. Regarding the use of facilities, 47% want permanent desks while 51% want flexible desks.

How are they using the spaces? Most choose a monthly plan, and only 10% choose a daily or weekly plan.¹⁸ Most users choose a plan that allows them to use the space 24 hours a day, 365 days a year; this is the same in both Europe and the United States (60%). In terms of the number of days of space use, many users visit the space very frequently: one third use the space every day, and 60% use the space more than three or four times a week.¹⁹ Regarding form of usage, flexible seating,

¹⁵ The second GCS.

¹⁶ *Ibid.*

¹⁷ The figure remains 55% among space users in Europe.

¹⁸ The second GCS.

¹⁹ The majority (47%) uses the space regardless of time and day of week (24 hours a day, seven days a week).

which accounts for two thirds, exceeded permanent seating (one quarter). In addition, two thirds have used only their current space; only a few (4%) have used multiple spaces.²⁰

We will now direct attention on users' activities at their spaces. In terms of the unit in which to conduct an activity, 57% of all users said they often engage in work by forming a team.²¹ In terms of age groups, users prefer team activities to individual activities; the younger users tends to want to be involved in each project over a long period of time. In terms of space size, 74% of those who use small spaces and 53% of those who use large spaces said they often have an opportunity to work in a team.

What benefits do users gain by using a space? Of all users, 88% said they have been able to have good interactions²² with others.²³ Specifically, users at a space with fewer than 10 desks are building beneficial relationships with 10 people. The figure drops to five at a space with 10 to 19 desks and then increases up to seven people at a space with 60 or more desks. This suggests that there are many opportunities to make a new connection with others when the space is either small or large. However, as the space size increases, the tendency to work as a team or enjoy good interactions with others decreases. Younger coworkers have made an average of six valuable new connections within two months of joining a space.²⁴ Although the figure slightly declines among middle-aged users, it increases to seven among older users. The second survey showed that there were effects such as "The social circle was expanded through the use of the space" (92%), "The sense of isolation was reduced" (86%), "The business network was expanded" (80%), and "The productivity of work was increased" (75%). The third survey reported that the users saw changes in ideas related to business (74%), creativity (71%), able to focus (68%), completing the tasks in given time (64%), and standard of work (62%).

Finally, we will direct attention on how users rate the space. Almost all (more than 90%) users in both Europe and the United States are satisfied with the space, and most of them (two thirds) do not intend to leave the space. In the second survey, the average score for satisfaction with the space was

²⁰ The second GCS.

²¹ However, according to the second survey, the majority (53%) is satisfied with working individually.

²² In the third survey, users said they engage in chitchat with other users (77%), talk about each other's employer (72%), and share knowledge and advice (62%).

²³ In the second survey, the majority (74%) of users knows the names of all or many of their fellow users. The majority (77%) of users also socialized with at least some of the other users after work or at the weekends. While close to 30% (27%) socialize with almost all the users at least sometimes, only some (15%) users never interact with other users outside of work.

²⁴ In a related item, the second survey shows that on average, most users had met 3.6 useful new acquaintances in the past two months.

8.4 on a 10-point scale. Furthermore, the results showed that the users like aspects of the space such as people (81%), location (61%), and price (46%), and most (68%) do not intend to switch spaces. In the third survey, the average level of satisfaction stayed almost the same (8.3), a high score. By region, the scores are 8.2, 8.4, 8.7, 8.5, and 8.5 in Europe, North America, Latin America, Asia, and Africa, respectively, exhibiting no large differences.

Performance²⁵

The average desk utilization rate trended upwards from 44% to 50% and 55% from the first survey to the third. In the first survey, the rate is 54% in Europe and 43% in the United States and Canada. There is no large difference in terms of the size of the city where the space is located, since the rate is 48% among spaces in large cities and 44% among spaces in small cities. The survey also shows that the utilization rate is inversely proportional to the number of seats.

The average desk occupancy rate trends downwards from 109% to 101% from the second survey to the third. For spaces with 100 or more desks, the average rate is 172%, far exceeding the overall average. The number of members who share each desk tends to increase as the space grows larger.

In terms of space business revenue, nearly half (40%) are making a profit. While most (56%) spaces with fewer than 10 seats are incurring a loss and profitable spaces are the minority (25%), the majority (70%) of spaces with 50 seats or more are making a profit, and only some (20%) of the spaces are operating at a loss. On average, the number of members has increased by approximately 30% since the time of opening, and profits tend to increase as members increase. Concerning region, whereas the incomes and expenses at half of the spaces in the United States are at either breakeven or profitable, the figure is only 30% in Europe; quite a few spaces cannot make a profit.

Most (72%) spaces exceed the breakeven point and become profitable after two years in operation. This figure increases to 87% when only private space is considered. Interestingly, a space tends to become more profitable and reach the breakeven point faster when the number of spaces operated in a given area is higher. By contrast, a monopolistic space in a given city is two times more likely to become unprofitable than an average space, indicating that demand is higher and the concept better known in areas with more spaces.

Concerning space manager's income, many (64%) full-time space managers of a space with less

²⁵ Here, the results are limited to those related to the space business. Unless otherwise noted, the descriptions refer to the second CGS.

than 30 members are earning as much or more than the average income.

2.3 Research Question

We have reviewed previous studies on coworking and coworking space. The results confirmed that studies attempting to describe and explain the phenomenon have gradually been accumulated in Japan and overseas. However, with the exception of the GCS annual worldwide survey, most studies are small and limited in scope and target population, thus failing to acquire an understanding of the overall picture of the operation and utilization of coworking space. In addition, although the analysis results of the GCS are certainly useful, it comprises a consolidation of data drawn from around the world. Though it mentions regional differences in the analysis results, elements such as regional characteristics, industry and employment structure, and the attitudes and behavior of working people may differ by country. Therefore, it is necessary to accumulate suggestive findings on the operation and utilization of spaces in each country concurrently with significant efforts like the GCS.

Therefore, this paper focuses on coworking spaces in Japan²⁶ and empirically examines their status.

3. Research Methods

3.1 Survey method

The dataset used in this paper is based on data obtained from a questionnaire survey we conducted independently. The survey was conducted online over the 38 days from July 28 to September 3, 2014 by using an online research company.

The sample population for the questionnaire survey was extracted through the following procedure. First, we used the dataset uploaded on Coworking JP's Facebook page.²⁷ We used the file dated January 28, 2014, which was the latest file as of the June 2014 period when we began preparing for the survey. In addition, as the number of coworking spaces was trending up, we also used other websites and updated the dataset.²⁸ Responses were obtained from 191 spaces out of the 365 that represented almost all facilities in operation in Japan as of July 2014 (a 52.3% response rate). We asked space managers to fill out the questionnaire. We also decided to limit the target

²⁶ We focus on coworking spaces in this paper because they do not change over time as much as coworkers, allowing us to obtain basic knowledge and helping us understand the overall picture of the phenomenon of coworking.

²⁷ Coworking JP (<https://www.facebook.com/groups/cowjp/>).

²⁸ We used websites such as coworking-space JP (<http://coworking-space.jp/>) and coworking.com (<http://co-work-ing.com/>).

population to the spaces that allow drop-in (i.e., temporary) usage because we believed that, as shown in Uda (2013), the nature of coworking is best exemplified in spaces where an openness of workspace and a diversity of members are expected. As a result, 152 responses were used in the analysis.

3.2 Analysis method

To provide the current status of coworking space comprehensively, we asked space managers to answer the questions divided into six parts: facility, management organization, business strategy, activity, space users, and performance. The questions are listed in Table 1²⁹. In this paper, we performed a correlation analysis to explicate the relationships among the items.

Table 1 Items for analysis

	Items
(1) Facility	<ul style="list-style-type: none"> • Floor size (m²) • Number of seats • Number of partitioned seats
(2) Management Organization	<ul style="list-style-type: none"> • Degree of specialization (1 = Space business only; 2 = Mainly space business but other business also exists; 3 = Space business is a side job; reversed in the analysis below, with degree of specialization indicated by (Reversed). • Number of staff • Space manager's working hours (days/week) • Space manager's age • Space manager's management experience
(3) Business Strategy	<ul style="list-style-type: none"> • Management policies • Cooperation policies
(4) Activity	<ul style="list-style-type: none"> • Events (frequency, type) • Space manager's view on events
(5) Space Users	<ul style="list-style-type: none"> • Number of users (heavy users) • Ratio of members/non-members • User attributes (jobs, age) • Amount of member/non-member usage time (days)
(6) Performance	<ul style="list-style-type: none"> • Sales • Ratio of member sales • Space manager's view on current state of space

²⁹ See the questionnaire at the end of the paper for specific question items.

4. Results

The correlation analysis results are presented below in the order shown in Table 1.³⁰ The correlation analysis relative to all the other items is not always discussed for every item in each part. Results are described selectively according to the discussion point.

4.1 Facility

As shown in Table 1, the items related to facilities in this paper are the space's floor size and number of seats (and partitioned seats). We will describe the correlation between these items.

As shown in Table 2, floor size and number of seats have a positive correlation (0.697).³¹ As shown in Figure 1, however, once floor size reaches about 150 m², the subsequent distribution varies: the distribution up to 150 m² approaches a straight line, while the subsequent distribution does not. This finding suggests that floor size and number of seats might not have a linear relationship. Differences in how the numbers of seats increase in spaces may occur above a certain floor size.

Similarly, a correlation was found between floor size and number of partitioned seats (0.388), as shown in Figure 2. This relationship is not as clear as the relationship between floor size and number of seats.

Table 2 Facility correlation matrix

	<i>M</i>	<i>SD</i>	floor size (m ²)	number of seats	number of partitioned seats
			1.000		
Facility			0.697 **	1.000	
			0.000		
			0.388 **	0.582 **	1.000
			0.000		
			0.000		

Note: *N*=152. *: *p* < 0.05, **: *p* < 0.01.

Each upper line contains Pearson product-moment correlation coefficients, and each lower line contains probabilities.

³⁰ This paper attempts to interpret analysis results assuming the occurrence of existing causal relationships. Naturally, correlation analysis results cannot be used to discuss causality. The findings presented in this paper must therefore be subjected to further analysis to provide a deeper discussion of causality. However, the aim of this paper is to present hypotheses, and causality will be discussed in a subsequent paper.

³¹ Unless otherwise noted, the significance level of correlation values in all parentheses is 1%. Significance levels of 5% or 10% will be so noted.

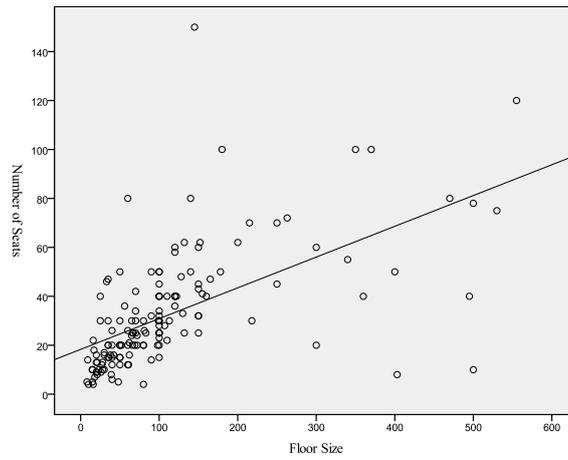


Figure 1 Relationship between floor size and number of seats

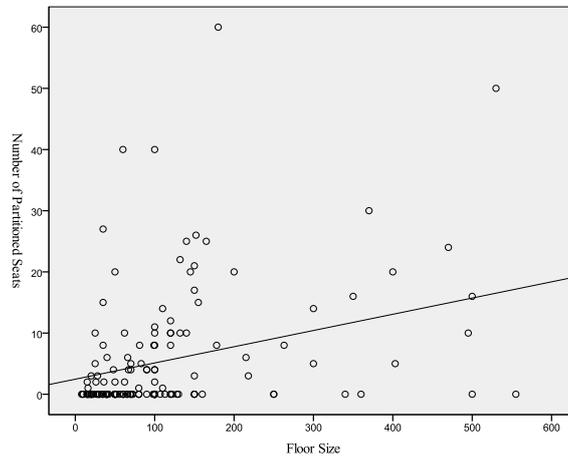


Figure 2 Relationship between floor size and number of partitioned seats

4.2 Management organization

As shown in Table 1, items on management organization are degree of specialization (R), number of staff, space manager's working hours (days/week), space manager's age, and space manager's management experience. This section describes the relationships between these management organization items and the facility-related items, as well as the relationships among management organization items.

As shown in Table 3, we found no correlation between a space's degree of specialization(R) and its floor size. We found only a negative correlation (-0.140) between degree of specialization (R) and number of seats at the 10% significance level. Space operation may need to be profitable when a

space is a dedicated one; thus, if the floor size were increased, the number of seats might be increased, and many users might be sought.³² However, this correlation doesn't always exist. .

The average number of staff was 5.57.³³ Staff size tends to increase as seats increase (0.211).³⁴ Figure 3 shows this relationship.

Space manager's average working hours was 7.29 hours per day and 4.74 days per week. We found no correlation between floor size/number of seats and working hours/days, suggesting that increases or decreases in floor size or seats are not covariant with work hours/days.

Among the management organization items, we will focus on space manager's average working hours/days and staff size. As shown in Table 3, the correlation between work hours/days and staff size suggests that, as the staff size increases, the number of space manager's average working hours/days decreases. Specifically, a negative correlation (-0.140) exists between space manager's working time hours and staff size, albeit only at the 10% significance level. As staff size increases, the number of space manager's working days decreases (-0.248). Even when the space manager is absent, maintaining the number of business days may be possible by increasing the number of staff.

Table 3 Management organization correlation matrix

	<i>M</i>	<i>SD</i>	specialization (R)	working hours (day)	working days (week)	space manager's experience (in months)	number of staff	floor size (m ²)	number of seats	number of partitioned seats
Management Organization	specialization (R)	2.55	0.68	1.000						
	working hours (day)	7.29	3.68	-0.093	1.000					
	working days (week)	4.74	1.76	-0.115	0.667 **	1.000				
	space manager's experience (in months)	19.49	12.24	0.038	0.129	0.042	1.000			
	number of staff	5.57	5.79	-0.092	-0.140	-0.248 **	0.037	1.000		
	floor size (m ²)	123.95	148.20	0.261	0.085	0.002	0.655	1.000		
Facility	number of seats	33.89	26.76	0.046	0.090	0.124	0.020	0.100	1.000	
	number of partitioned seats	5.75	10.13	0.576	0.272	0.127	0.804	0.221	0.211 **	0.697 **
				-0.140	0.112	0.151	0.003	0.009	0.000	1.000
				-0.114	0.053	0.012	-0.025	0.149	0.388 **	0.582 **
			0.163	0.520	0.880	0.760	0.067	0.000	0.000	1.000

Note: N=152. *: $p < 0.05$, **: $p < 0.01$.
Each upper line contains Pearson product-moment correlation coefficients, and each lower line contains probabilities.

³² Increasing the floor size would be expected to result in higher rent; thus, owners or space managers who prioritize profitability might avoid establishing or operating large spaces. However, fixed costs other than rent include labor costs for the space manager and staff. Labor costs may increase in proportion to hours of operation but likely less so than floor size. Given these considerations, owners or space managers running dedicated spaces would increase floor size.

³³ Just under 70% of all the spaces were run with a staff of five or fewer (Uda and Abe, 2015b).

³⁴ Such staff size growth in fixed proportion to seat growth is not necessarily an obvious relationship since, unlike in the restaurant industry, where customers are served individually, reception duties are the main work of coworking spaces, which may thus have little need to increase staff size when the seats increase.

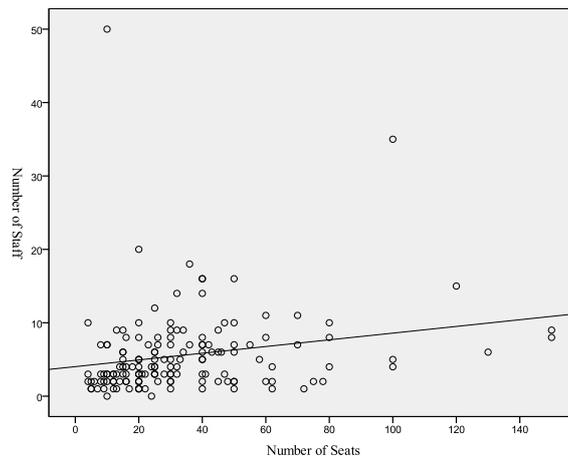


Figure 3 Relationship between number of seats and number of staff

4.3 Business Strategy

As shown in Table 1, the items related to strategy in this paper are space management policies and cooperation policies. These are broken down into 10 items.³⁵ Specifically, we asked that the following 10 items be rated on a five-point scale (1 = “disagree completely,” 5 = “agree completely”): (1) “Coworking spaces in the neighborhood are business competitors” (“compete with neighboring spaces”); (2) “Focus on the profitability of the coworking space itself” (“focus on profitability”); and (3) “Focus on community formation at the coworking space” (“focus on community formation”); (4) “Cooperate with coworking spaces in the neighborhood” (“cooperate with neighboring spaces”); (5) “Cooperate with coworking spaces outside the neighborhood” (“cooperate with distant spaces”); (6) “Actively involved in the local community where the coworking space is located” (“cooperate with the local community”); (7) “Cooperate with other companies” (“cooperate with other companies”); (8) “Cooperate with the local government” (“cooperate with the local government”); (9) “Cooperate with NPOs” (“cooperate with NPOs”); (10) “Cooperate with public institutions such as vocational schools, universities, and hospitals” (“cooperate with public institutions”); These items can be roughly divided into those on the space management policy (questions 1 through 3) and on the space cooperation policy (questions 4 to 10).

We will now discuss the relationship between these business strategy-related items and the items of facility and management organization. Additionally, we will discuss the relationship among the business strategy-related items.

³⁵ Respondents evaluated these items on a five-point scale ranging from “Completely disagree” (1) to “Completely agree” (5).

As shown in Table 4, a tendency to increase floor size was observed among spaces pursuing a strategy of focusing on profitability, but a significant relationship exists between these items at only the 10% level. A correlation was observed between “focus on profitability” and number of seats (0.262), suggesting that coworking spaces which prioritize profits focus on numbers of seats (which have a greater direct effect on business performance than floor size), establish spaces with large numbers of seats, and seek large numbers of users.

Among the items pertaining to cooperation policies and staff size, we found that staff size tends to increase along with a greater extent of cooperating with other companies (0.204, 5% significance level) and with public institutions (0.213). By contrast, no correlation was observed between staff size and degree of cooperating with neighboring/distant spaces, local community, local government, or NPOs.

Table 4 suggests that spaces which view the neighboring spaces as competitors do not cooperate with any other actors in the table. Spaces which view the neighboring spaces as competitors tend to focus on profitability (0.352), suggesting that they are competing fiercely with other spaces and seeking only profits. The more the space manager values community formation at the space, the more the space will tend to have cooperate with the local community (0.422), local government (0.309), distant spaces (0.276), neighboring spaces (0.261), and so forth. This finding suggests that space managers who value community formation at the space work with the local community and local government in an attempt to build a community more closely tied to the local community and try to build communities with other spaces. Practices aiming to create partnerships among spaces such as “Coworking Visa .jp” may have affected this trend.

We observed correlations among all items related to cooperation, albeit to varying degrees, indicating that, when partnering takes place with other spaces, it also takes place with other actors. We will mention only the notable correlations here. First, the more a space cooperates with another neighboring space, the greater its tendency to cooperate also with a distant space (0.464), suggesting that these spaces are playing a role of hubs linking many spaces. It is also likely that the more a space cooperates with another neighboring space, the more it will tend to cooperate with the local community (0.259), other companies (0.249), the local government (0.290), NPOs (0.324), or a public institutions (0.188, 5% significance level). Spaces cooperating with any one type of actor (i.e., another company, the local government, an NPO, or public institution) tend to cooperate with the other three types as well.

Table 4 Business Strategy correlation matrix

	<i>M</i>	<i>SD</i>	compete with neighboring spaces	focus on profitability	focus on community formation	cooperate with neighboring spaces	cooperate with distant spaces	cooperate with the local community	cooperate with other companies	cooperate with the local government	cooperate with NPOs	cooperate with public institutions	floor size (m ²)	number of seats	number of partitioned seats	specialization (R)	working hours (day)	working days (week)	space manager's experience (in months)	number of staff		
Business Strategy	compete with neighboring spaces	1.86	0.97	1.000																		
	focus on profitability	2.68	1.44	0.352 **	1.000																	
	focus on community formation	4.26	0.95	-0.076	0.133	1.000																
	cooperate with neighboring spaces	2.53	1.37	0.352	0.102	0.020	0.123	0.261 **	1.000													
	cooperate with distant spaces	2.75	1.48	-0.089	0.158	0.276 **	0.276 **	0.464 **	1.000													
	cooperate with the local community	3.47	1.30	0.015	0.021	0.422 **	0.422 **	0.259 **	0.306 **	1.000												
	cooperate with other companies	3.07	1.49	0.061	0.047	0.138	0.249 **	0.372 **	0.307 **	1.000												
	cooperate with the local government	2.63	1.50	0.452	0.564	0.091	0.002	0.000	0.000		1.000											
	cooperate with NPOs	2.44	1.42	-0.090	-0.020	0.309 **	0.290 **	0.295 **	0.350 **	0.398 **	1.000											
	cooperate with public institutions	2.24	1.29	0.268	0.811	0.000	0.000	0.000	0.000	0.000		1.000										
Facility	floor size (m ²)	123.95	148.20	-0.023	0.018	0.155	0.324 **	0.335 **	0.300 **	0.324 **	0.505 **	1.000										
	number of seats	33.89	26.76	0.781	0.825	0.057	0.000	0.000	0.000	0.000	0.000		1.000									
	number of partitioned seats	5.75	10.13	-0.064	-0.087	0.161 *	0.188 *	0.355 **	0.350 **	0.547 **	0.510 **	0.423 **	1.000									
	specialization (R)	2.55	0.68	0.434	0.285	0.048	0.020	0.000	0.000	0.000	0.000	0.000		1.000								
Management Organization	working hours (day)	7.29	3.68	0.089	0.142	0.072	0.052	0.131	0.068	0.274 **	0.210 **	0.111	0.216 **	1.000								
	working days (week)	4.74	1.76	0.275	0.080	0.378	0.524	0.107	0.403	0.001	0.010	0.173	0.008		1.000							
	space manager's experience (in months)	19.49	12.24	0.096	0.262 **	0.025	0.046	0.127	0.000	0.297 **	0.163 *	0.006	0.229 **	0.697 **		1.000						
	number of staff	5.57	5.79	0.240	0.001	0.755	0.573	0.120	0.995	0.000	0.045	0.937	0.005	0.000			1.000					
				0.100	0.250 **	-0.015	-0.005	0.007	0.009	0.152	0.104	0.026	0.124	0.388 **	0.582 **			1.000				
				0.219	0.002	0.852	0.949	0.933	0.908	0.062	0.204	0.751	0.129	0.000	0.000				1.000			

Note: N=152. *, p < 0.05, **, p < 0.01.

Each upper line contains Pearson product-moment correlation coefficients, and each lower line contains probabilities.

4.4 Activity

As shown in Table 1, the items related to a space's operation activities are number of events, event type, and space manager's view on events. The last item is subdivided into ten items³⁶: (1) "Events are an important source of revenue ("events are revenue source" hereafter); (2) "Events help facilitate interactions with people outside the space" ("events help facilitate external interaction"); (3) "Events help facilitate interactions among users within the space" ("events help facilitate user interaction"); (4) "The quality of events is an important issue in operating a space" ("events are space operation issue"); (5) "Events are often planned personally by the space manager" ("events are planned by the space manager"); (6) "Event plans are often proposed by users" ("events are proposed by users"); (7) "The space manager often personally plays roles such as event lecturer" ("the space manager works as event lecturer"); (8) "Users often play roles such as event lecturer" ("users work as event lecturer"); (9) "Events help increase the number of users" ("events help increase users"); and (10) "Events are important for the space" ("events are important").

We will start with the discussion in Section 4.4.1 on the relationships between number of events and the items in facility, management organization, business strategy, activity (items on space manager's view on events), space users, and performance (except sales-related items). Section 4.4.2 will then discuss the relationships between the items related to space manager's view on events and the items in management organization and business strategy, along with the relationships among the items related to space manager's view on events.

4.4.1 Event

The average number of events was 5.68 events per month, with a median value of four events per month, implying that spaces hold events about once per week (Uda and Abe, 2015b).

As shown in Table 5-1,³⁷ we observed no correlation between a space's floor size and number of events, but we observed a significantly positive correlation between number of seats and number of events (0.261), suggesting that the more seats a space has, the more events it holds.³⁸

³⁶ Respondents evaluated these items on a five-point scale ranging from "Completely disagree" (1) to "Completely agree" (5).

³⁷ Table 5-1 shows the variables thought to have a relationship to event frequency and their correlation coefficients. See Table 5-2 for the correlation matrix with all the variables under discussion.

³⁸ A space's floor size and number of seats are correlated, but floor size and event frequency are not covariant, while number of seats and event frequency are. Several interpretations of these relationships are possible. For example, spaces with many seats may have users packed closely together; these spaces would therefore need to use events to promote interaction and build relationships to the point where users could greet each other when using the space, thereby increasing event frequency. This interpretation is also suggested by the lack of correlation between number of

A negative correlation was observed between a space's degree of specialization (R) and its number of events (-0.194, 5% significance level), perhaps indicating that the need to ensure profits from space operation rises along with the degree of specialization to the space business and that events are held frequently as a way to make a profit.

The more of their own time space managers spend on space operation, the more the number of events tends to rise. This finding can be seen from the significantly positive relationships that space manager's working hours per day (0.284) and working days per week (0.246) have with number of events. However, the opposite relationship could also exist: frequent events could result in longer working hours; thus, care is needed in interpretation. We observed no correlation between space manager's management experience and number of events.

The more a strategy of focusing on profitability is pursued, the more event frequency rises (0.261). Space managers might expect increases in event frequency to lead to greater profitability, but we found no correlation between the degree to which community formation within the space is valued and event frequency. We occasionally found some cases in which events were held to build a community originating from the space.³⁹ Accordingly, this finding may run counter to space managers' expectations.

Event frequency has a significantly positive correlation with each of the following items: "Events are revenue source" (0.188, 5% significance level); "events are space operation issue" (0.172, 5% significance level);" and "events help increase users" (0.230). Event frequency also has a positive correlation with the items "the space manager works as event lecturer" (0.230) and "events are proposed by users" (0.232). These findings suggest that users take part in planning and holding of events in spaces frequently. Among the relationships with event frequency, the most noteworthy finding is the lack of correlations between items related to event-driven interaction inside or outside the space and event frequency. Such findings run counter to the expectations of space managers seeking to use events to promote interaction.

We observed no correlation between the attributes of users (such as employees or freelancers) and event frequency.⁴⁰

partitioned seats and event frequency.

³⁹ For example, pages 14 and 15 of *Coworking Magazine* (Volume 1) describe an event held for community-formation.

⁴⁰ A reverse causal relationship could also be considered for this assumption (that users of a specific type will increase or decrease in response to increases or decreases in event frequency), but no correlation was observed in either case.

The items pertaining to performance (current state excluding sales) are characterized by the fact that we observed correlations between items pertaining to interaction among users and event frequency only at the 10% significance level. In other words, the more space managers work to facilitate interaction among users (0.144, 10% significance level) or the more users facilitate interaction by themselves (0.151, 10% significance level), the greater the event frequency.

Table 5-1 Event frequency correlation

	<i>M</i>	<i>SD</i>	number of events (month)
Activity	number of events (month)	5.68	6.30
			1.000
	floor size (m ²)	123.95	148.20
			0.049
			0.552
Facility	number of seats	33.89	26.76
			0.261 **
			0.001
	number of partitioned seats	5.75	10.13
			0.077
			0.343
	specialization (R)	2.55	0.68
			-0.194 *
			0.017
	working hours (day)	7.29	3.68
			0.284 **
			0.000
Management Organization	working days (week)	4.74	1.76
			0.246 **
			0.002
	space manager's experience (in months)	19.49	12.24
			0.116
			0.153
	number of staff	5.57	5.79
			0.121
			0.136
	compete with neighboring spaces	1.86	0.97
			0.076
			0.351
	focus on profitability	2.68	1.44
			0.261 **
			0.001
	focus on community formation	4.26	0.95
			0.114
			0.161
	cooperate with neighboring spaces	2.53	1.37
			-0.037
			0.651
	cooperate with distant spaces	2.75	1.48
			0.185 *
			0.023
Business Strategy	cooperate with the local community	3.47	1.30
			0.021
			0.797
	cooperate with other companies	3.07	1.49
			0.224 **
			0.006
	cooperate with the local government	2.63	1.50
			0.236 **
			0.003
	cooperate with NPOs	2.44	1.42
			0.173 *
			0.033
	cooperate with public institutions	2.24	1.29
			0.110
			0.177
	events are revenue source	3.34	1.37
			0.188 *
			0.020
	events help facilitate external interaction	4.05	1.08
			0.144
			0.077
	events help facilitate user interaction	3.79	1.19
			0.099
			0.224
	events are space operation issue	3.84	1.13
			0.172 *
			0.034
Activity (excluding number of events)	events are planned by the space manager	3.29	1.13
			-0.071
			0.386
	events are proposed by users	3.13	1.03
			0.232 **
			0.004
	the space manager works as event lecturer	2.49	1.09
			0.023
			0.778
	users work as event lecturer	3.18	1.04
			0.230 **
			0.004
	events help increase users	3.33	1.00
			0.230 **
			0.004
	events are important	4.26	0.94
			0.215 **
			0.008
	students (%)	10.59	15.36
			-0.048
			0.557
	employees (%)	29.71	23.17
			0.034
			0.677
Space Users	freelancers (%)	42.80	27.49
			-0.044
			0.592
	housewives/husbands (%)	8.57	15.44
			-0.014
			0.865
	others (%)	8.34	19.53
			0.070
			0.391
	the space manager facilitates user interaction	3.73	1.22
			0.144
			0.076
	users facilitate own interaction	3.41	1.20
			0.151
			0.063
	the space is used for the purpose of getting work done	3.72	0.95
			0.044
			0.594
	users hope to interact with the space manager	3.38	0.92
			0.141
			0.083
Performance (excluding sales)	users hope to interact with other users	3.51	1.03
			0.096
			0.240
	new products and services are created through collaboration	3.43	1.12
			0.124
			0.128
	new products and services are created by individual users	3.32	1.09
			0.091
			0.262
	want to increase users at the space	4.43	0.85
			0.083
			0.311
	satisfied with the space's current state	2.26	1.08
			0.119
			0.145
	the space is profitable on a non-consolidated basis	2.28	1.30
			0.234 **
			0.004

Note: N=152. *, p < 0.05, **, p < 0.01.

Each upper line contains Pearson product-moment correlation coefficients, and each lower line contains probabilities.

Table 5-2 Event frequency correlation matrix

	M	SD	number of events (month)	number of event types (month)	floor size (m ²)	number of seats	number of partitioned seats	specialization (R)	working hours (day)	working days (week)	space manager's experience (in months)	number of staff	complete with neighboring spaces	focus on profitability	focus on community formation	cooperate with neighboring spaces	cooperate with distant spaces	cooperate with the local community	cooperate with other companies	cooperate with the local government	cooperate with NPOs	cooperate with public institutions	events are revenue source	events help facilitate external interaction	events help facilitate user interaction
Activity			1.000																						
	number of events (month)	5.68	6.30																						
	number of event types (month)	3.68	3.53	0.808 **	1.000																				
Facility			0.049	0.056	1.000																				
	floor size (m ²)	123.95	148.20	0.552	0.644																				
	number of seats	33.89	26.76	0.261 **	0.237 **	0.697 **	1.000																		
Management Organization			0.077	0.139	0.388 **	0.582 **	1.000																		
	number of partitioned seats	5.75	10.13	0.343	0.089	0.000	0.000																		
	specialization (R)	2.55	0.68	-0.194 *	-0.222 **	0.046	-0.140	1.000																	
Management Organization			0.017	0.096	0.576	0.086	0.163																		
	working hours (day)	7.29	3.68	0.284 **	0.109	0.000	0.112	0.053	0.000	1.000															
	working days (week)	4.74	1.76	0.246 **	0.119	0.124	0.151	0.012	-0.115	0.667 **	1.000														
Business Strategy			0.116	0.064	0.020	0.003	-0.025	0.038	0.129	0.042	1.000														
	space manager's experience (in months)	19.49	12.24	0.153	0.435	0.864	0.974	0.760	0.640	0.114	0.698														
	number of staff	5.57	5.79	0.121	0.138	0.400	0.211 **	0.149	-0.092	-0.140	-0.248 **	0.037	1.000												
Business Strategy			0.076	0.145	0.089	0.096	0.100	-0.036	0.056	0.041	-0.072	-0.059	1.000												
	cooperate with neighboring spaces	1.86	0.97	0.351	0.074	0.275	0.240	0.219	0.664	0.495	0.614	0.380	0.471												
	focus on profitability	2.68	1.44	0.261 **	0.293 **	0.142	0.262 **	0.250 **	-0.367 **	0.195 *	0.148	-0.077	0.092	0.352 **	1.000										
Business Strategy			0.001	0.000	0.080	0.001	0.002	0.000	0.016	0.070	0.348	0.259	0.000	0.000	0.000										
	focus on community formation	4.26	0.95	0.114	0.141	0.072	0.025	-0.015	-0.044	0.113	-0.063	-0.196 *	0.128	-0.076	0.133	1.000									
	cooperate with neighboring spaces	2.53	1.37	-0.037	0.022	0.052	0.046	-0.005	0.031	0.025	-0.136	0.005	0.091	0.020	0.123	0.261 **	1.000								
Business Strategy			0.185 *	0.205 *	0.131	0.127	0.007	-0.074	0.074	-0.040	0.136	0.135	-0.089	0.158	0.276 **	0.464 **	1.000								
	cooperate with distant spaces	2.75	1.48	0.023	0.011	0.107	0.120	0.933	0.364	0.364	0.624	0.095	0.097	0.276	0.052	0.001	0.000								
	cooperate with the local community	3.47	1.30	0.021	0.035	0.068	0.000	0.009	-0.058	-0.034	-0.159	-0.146	0.100	0.015	0.021	0.422 **	0.259 **	0.306 **	1.000						
Business Strategy			0.224 **	0.210 **	0.274 **	0.297 **	0.152	0.043	0.016	-0.044	0.129	0.204 *	0.061	0.047	0.138	0.249 **	0.372 **	0.307 **	1.000						
	cooperate with other companies	3.07	1.49	0.006	0.009	0.001	0.000	0.062	0.600	0.846	0.589	0.113	0.012	0.452	0.564	0.091	0.505	0.000	0.000						
	cooperate with the local government	2.63	1.50	0.236 **	0.188 *	0.210 **	0.100 *	0.104	0.111	0.002	-0.012	0.119	-0.090	-0.020	0.359 **	0.290 **	0.350 **	0.398 **	1.000						
Business Strategy			0.003	0.020	0.010	0.045	0.204	0.172	0.982	0.698	0.832	0.145	0.268	0.841	0.000	0.000	0.000	0.000	0.000						
	cooperate with NPOs	2.44	1.42	0.173 *	0.145	0.111	0.006	0.026	0.098	-0.048	-0.108	0.004	0.097	-0.023	0.018	0.155	0.324 **	0.335 **	0.300 **	0.324 **	0.505 **	1.000			
	cooperate with public institutions	2.24	1.29	0.033	0.074	0.173	0.937	0.751	0.227	0.554	0.187	0.960	0.256	0.781	0.825	0.057	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Business Strategy			0.177	0.132	0.216 **	0.124	0.063	0.009	-0.160 *	0.126	0.213 **	-0.064	0.087	0.161 *	0.188 *	0.355 **	0.350 **	0.547 **	0.510 **	0.423 **	1.000				
	events are revenue source	3.34	1.37	0.108 *	0.147	0.097	0.122	-0.123	-0.117	0.202 *	0.115	-0.066	0.066	0.140	0.135	0.136	0.055	0.231 **	0.033	0.072	0.125	0.085	1.000		
	events help facilitate external interaction	4.05	1.08	0.020	0.070	0.233	0.136	0.131	0.153	0.013	0.209	0.158	0.422	0.422	0.085	0.097	0.095	0.497	0.009	0.703	0.375	0.124	0.297	0.000	0.000
Business Strategy			0.144	0.098	0.114	0.028	-0.102	0.042	0.125	0.115	-0.114	-0.042	-0.164 *	0.011	0.329 **	0.165 *	0.046	0.195 *	0.134	0.307 **	0.123	0.187	0.087	0.377 **	1.000
	events help facilitate user interaction	3.79	1.19	0.077	0.228	0.161	0.734	0.212	0.608	0.126	0.157	0.162	0.608	0.044	0.893	0.000	0.042	0.576	0.016	0.099	0.000	0.133	0.289	0.000	0.000
	events are space operation issue	3.84	1.13	0.172 *	0.085	0.056	0.025	-0.057	-0.034	0.182 *	0.236 **	-0.303 **	-0.121	0.053	0.119	0.241 **	0.024	0.020	0.069	0.014	0.121	0.142	-0.033	0.412 **	0.437 **
Business Strategy			0.024	0.297	0.496	0.757	0.483	0.081	0.025	0.003	0.000	0.138	0.520	0.143	0.003	0.768	0.808	0.399	0.663	0.136	0.080	0.563	0.136	0.080	0.000
	events are planned by the space manager	3.29	1.13	-0.071	-0.118	0.009	-0.033	-0.044	0.086	-0.068	-0.099	-0.165 *	-0.132	-0.139	-0.085	0.227 **	0.042	0.032	0.165 *	0.012	0.159	0.073	-0.200	0.171 *	0.408 **
	events are proposed by users	3.13	1.03	0.386	0.148	0.910	0.684	0.589	0.290	0.403	0.912	0.042	0.104	0.088	0.298	0.005	0.005	0.005	0.001	0.374	0.820	0.035	0.000	0.000	0.000
Business Strategy			0.004	0.000	0.692	0.396	0.011	0.461	0.077	0.066	0.737	0.066	0.456	0.740	0.066	0.500	0.045	0.494	0.861	0.500	0.000	0.000	0.000	0.000	0.000
	the space manager works as event lecturer	2.49	1.09	0.022	-0.008	-0.060	-0.120	-0.096	0.095	-0.019	0.003	-0.041	-0.109	-0.074	-0.102	0.090	0.089	0.039	0.153	0.074	0.206 *	0.181 *	0.148	0.172 *	0.187 *
	users work as event lecturer	3.18	1.04	0.078	0.640	0.460	0.142	0.239	0.244	0.817	0.967	0.819	0.182	0.346	0.210	0.272	0.274	0.632	0.061	0.362	0.011	0.025	0.075	0.024	0.004
Business Strategy			0.230 **	0.204 *	-0.124	-0.134	-0.221 **	0.087	0.117	0.200 *	-0.016	-0.074	0.097	-0.001	-0.067	-0.034	-0.010	-0.987	-0.069	0.000	-0.101	0.065	0.052	0.023	0.007
	events help increase users	3.33	1.00	0.004	0.012	0.128	0.099	0.006	0.286	0.152	0.014	0.841	0.362	0.234	0.987	0.415	0.681	0.905	0.288	0.884	0.571	0.780	0.107	0.061	0.086
	events are important	4.26	0.94	0.230 **	0.163 *	0.109	0.048	-0.150	0.114	0.087	0.108	-0.152	0.053	-0.096	0.069	0.251 **	0.056	0.007	0.115	0.030	0.493 **	0.501 **	0.111	0.027	0.493 **
Business Strategy			0.008	0.008	0.112	0.283	0.112	0.869	0.224	0.695	0.010	0.271	0.818	0.650	0.000	0.299	0.919	0.001	0.097	0.000	0.046	0.162	0.000	0.000	0.000
	students (%)	10.59	15.36	-0.048	-0.068	-0.135	0.013	0.084	-0.085	0.132	0.068	-0.042	0.087	-0.124	-0.093	-0.029	-0.165 *	-0.065	0.069	-0.111	-0.106	-0.044	0.050	0.006	-0.145
	employees (%)	29.71	23.17	0.034	0.061	0.013	0.015	0.097	-0.007	0.010	0.048	-0.061	0.176 *	0.054	0.091	-0.191 *	0.038	0.049	-0.089	0.024	-0.052	0.007	-0.041	0.031	-0.058
Space Users			0.577	0.406	0.097	0.871	0.304	0.299	0.106	0.403	0.606	0.288	0.127	0.873	0.523	0.724	0.042	0.253	0.401	0.174	0.194	0.589	0.544	0.943	0.075
	freelancers (%)	42.80	27.49	-0.044	-0.010	-0.005	-0.073	-0.146	0.016	-0.006	-0.108	0.066	-0.179 *	0.130	0.094	0.153	0.180 *	0.007	0.081	0.022	0.016	0.052	-0.004	0.005	0.095
	housewives/husbands (%)	8.57	15.44	0.592	0.360	0.438	0.773	0.073	0.846	0.977	0.187	0.419	0.027	0.110	0.248	0.009	0.027	0.931							

events are space operation issue	events are planned by the space manager	events are proposed by users	the space manager works as event lecturer	users work as event lecturer	events help increase users	events are important	students (%)	employees (%)	freelancers (%)	housewives/husbands (%)	others (%)	the space manager facilitates user interaction	users facilitate own interaction	the space is used for the purpose of giving work done	users hope to interact with the space manager	users hope to interact with other users	new products and services are created through collaboration	new products and services are created by individual users	want to increase users at the space	satisfied with the space's current state	the space is profitable on a non-consolidated basis
1.000																					
0.401 **	1.000																				
0.000																					
0.046	-0.288 **	1.000																			
0.578	0.000																				
0.171 *	0.420 **	0.093	1.000																		
0.035	0.000	0.254																			
0.188 *	-0.192 *	0.524 **	-0.013	1.000																	
0.020	0.018	0.000	0.877																		
0.275 **	0.188 *	0.229 **	0.186	0.134	1.000																
0.001	0.039	0.005	0.055	0.058																	
0.514 **	0.287 **	0.076	0.078	0.150	0.438 **	1.000															
0.000	0.000	0.351	0.339	0.065	0.000																
-0.012	-0.012	-0.135	-0.053	-0.054	-0.017	-0.145	1.000														
0.881	0.882	0.098	0.517	0.512	0.832	0.074															
0.140	0.058	0.041	-0.049	-0.058	-0.004	0.038	-0.097	1.000													
-0.085	0.477	0.617	0.548	0.480	0.965	0.643	0.236														
-0.035	-0.079	0.107	0.052	0.113	-0.006	0.056	-0.353 **	-0.484 **	1.000												
0.671	0.333	0.189	0.522	0.166	0.937	0.492	0.000	0.000													
-0.006	0.081	-0.123	0.114	0.028	0.044	-0.003	-0.042	-0.200 *	-0.281 **	1.000											
0.939	0.320	0.130	0.161	0.736	0.587	0.969	0.608	0.013	0.000												
-0.103	-0.012	0.004	-0.064	-0.070	-0.008	-0.007	-0.142	-0.270 **	-0.333 **	-0.124	1.000										
0.207	0.880	0.960	0.433	0.391	0.921	0.928	0.081	0.001	0.000	0.127											
0.343 **	0.289 **	0.037	0.174 *	0.043	0.240 **	0.355 **	-0.177 *	-0.157	0.149	-0.016	0.129	1.000									
0.000	0.001	0.647	0.032	0.597	0.003	0.000	0.030	0.053	0.067	0.841	0.114										
0.112	0.058	0.124	0.078	-0.006	0.200 *	0.187 *	-0.150	-0.166 *	0.099	0.023	0.157	0.569	1.000								
0.168	0.641	0.128	0.339	0.938	0.013	0.021	0.065	0.041	0.226	0.775	0.053	0.000									
0.070	-0.134	0.159	-0.065	-0.009	-0.006	0.097	-0.049	0.105	0.167 *	-0.223 **	-0.144	-0.072	-0.048	1.000							
0.394	0.099	0.051	0.426	0.910	0.942	0.233	0.547	0.199	0.040	0.006	0.076	0.377	0.559								
0.102	0.175 *	0.076	0.174 *	0.034	0.182 *	0.210 **	-0.195 *	-0.203 *	0.112	0.070	0.181 *	0.520 **	0.633 **	-0.022	1.000						
0.210	0.030	0.352	0.023	0.679	0.025	0.009	0.016	0.012	0.171	0.389	0.025	0.000	0.000	0.789							
0.115	0.153	0.083	0.045	-0.017	0.223 **	0.255 **	-0.286 **	-0.098	0.134	0.030	0.129	0.535 **	0.645 **	-0.076	0.680 **	1.000					
0.158	0.060	0.307	0.586	0.839	0.006	0.002	0.000	0.227	0.099	0.712	0.114	0.000	0.000	0.350	0.000						
0.070	0.020	0.102	0.027	0.053	0.185 *	0.202 *	-0.139	-0.203 *	0.124	-0.035	0.203 *	0.473 **	0.605 **	0.086	0.497 **	0.555 **	1.000				
0.389	0.802	0.212	0.746	0.517	0.023	0.013	0.088	0.012	0.127	0.672	0.012	0.000	0.000	0.295	0.000	0.000					
0.052	0.069	0.141	0.102	0.049	0.218 **	0.171 *	-0.150	-0.184 *	0.102	-0.065	0.244 **	0.414 **	0.541 **	0.108	0.460 **	0.414 **	0.786 **	1.000			
0.523	0.397	0.084	0.213	0.552	0.007	0.035	0.065	0.024	0.212	0.425	0.002	0.000	0.000	0.183	0.000	0.000					
0.209 **	0.043	0.112	-0.170 *	0.079	0.145	0.352 **	-0.124	-0.033	0.145	-0.134	0.038	0.322 **	0.165 *	0.160 *	0.226 **	0.228 **	0.131	0.200 *	1.000		
0.010	0.601	0.168	0.037	0.336	0.075	0.002	0.127	0.687	0.074	0.100	0.640	0.000	0.016	0.049	0.005	0.005	0.109	0.013			
-0.134	-0.140	0.083	-0.014	-0.090	0.060	-0.054	-0.038	0.091	-0.113	-0.025	-0.011	0.151	0.249 **	0.127	0.064	0.212 **	0.249 **	-0.246 **	1.000		
0.099	0.086	0.307	0.864	0.273	0.460	0.508	0.644	0.870	0.264	0.166	0.756	0.892	0.064	0.002	0.119	0.433	0.009	0.002			
-0.110	-0.163 *	0.043	-0.203 *	-0.135	-0.019	-0.053	0.016	0.028	0.028	-0.104	-0.003	0.138	0.189 *	0.118	0.073	0.048	0.176 *	0.193 *	0.030	0.457 **	1.000
0.178	0.044	0.598	0.012	0.098	0.813	0.517	0.842	0.733	0.734	0.204	0.969	0.089	0.020	0.149	0.370	0.557	0.030	0.017	0.713	0.000	

4.4.2 Space manager's view on events

As shown in Table 6, we found the following relationships between space manager's working hours and space manager's view on events. Each of the two items "Events are revenue source" (0.202, 5% significance level) and "Events are a consideration for space operation" (0.182, 5% significance level) has a positive correlation with space manager's daily working hours. Although a significant relationship was not observed for all 10 of the items pertaining to space manager's view on events, it can be inferred that the more space managers value events, the more time they will spend on space operation. Overall, we observed negative correlations between space manager's management experience and space manager's view on events, including items without a significant relationship, indicating that the more management experience space managers have, the less they tend to value events. This finding may indicate that, when a space manager has operated a space for a long time, some type of community already exists among the users, producing less of a need to create a new community through events. Moreover, given the previously described results for events, another possible interpretation may be that the longer space manager's management experience, the less the importance of holding events is.

We will focus on the main findings for business strategy and space manager's view on events. We observed no correlation between the variables "focus on profitability" and "Events are important." However, the more space managers focus on community formation at the space, the more they consider events to be important for the space (0.415), feel that events facilitate interaction among people within the space (0.362), and feel that events facilitate interaction among people outside the space (0.329). These findings can be interpreted that space managers feel that events are not linked to space business profitability but lead to interaction and community-formation.

The more a space cooperates with the local community (0.266), local government (0.295), or NPOs (0.162, 5% significance level), the more the space managers view events as important. We observed no correlation between the degree of cooperating with neighboring or distant spaces and these items, suggesting that the more a space pursues cooperation with actors except for other spaces, the more it values events.⁴¹

The correlations among the items related to space manager's view on events suggest the following. There is a positive correlation (0.703) between the two variables "events help facilitate

⁴¹ This finding may indicate a tendency to hold events cooperating with non-space organizations in order to provide users with a variety of benefits.

external interaction” and “events help facilitate user interaction.” Space managers likely feel that the more they use events to promote interaction among users, the more interaction with outsiders will be promoted (and vice-versa).

The more space managers consider that events help facilitate user interaction (0.501) or the more they consider that events help facilitate external interaction (0.493), the more they consider that events help increase users. Since we observed correlations for both these items, we expect that space managers consider that the more events help facilitate user and external interaction, the more number of users increases.

A significantly positive correlation is observed between “Events are important” and most other items. This finding could indicate that space managers view events as important because events are revenue source, help facilitate user and external interaction, help increase users, and are space operation issues.

Table 6 Correlation matrix for space manager's view on events

	<i>M</i>	<i>SD</i>	events are revenue source	events help facilitate external interaction	events help facilitate user interaction	events are space operation issue	events are planned by the space manager	events are proposed by users	the space manager works as event lecturer	users work as event lecturer	events help increase users	events are important	specialization (R)	working hours (day)	working days (week)	
Activity	events are revenue source	3.34	1.37	1.000												
	events help facilitate external interaction	4.05	1.08	0.377 **	1.000											
	events help facilitate user interaction	3.79	1.19	0.364 **	0.703 **	1.000										
	events are space operation issue	3.84	1.13	0.412 **	0.437 **	0.516 **	1.000									
	events are planned by the space manager	3.29	1.13	0.171 *	0.408 **	0.331 **	0.401 **	1.000								
	events are proposed by users	3.13	1.03	0.138	0.214 **	0.145	0.046	-0.288 **	1.000							
	the space manager works as event lecturer	2.49	1.09	0.172 *	0.187 *	0.233 **	0.171 *	0.420 **	0.093	1.000						
	users work as event lecturer	3.18	1.04	0.153	0.140	0.228 **	0.188 *	-0.192 *	0.524 **	-0.013	1.000					
	events help increase users	3.33	1.00	0.279 **	0.493 **	0.501 **	0.275 **	0.168 *	0.229 **	0.156	0.154	1.000				
	events are important	4.26	0.94	0.001	0.000	0.000	0.001	0.039	0.005	0.055	0.058	1.000				
Management Organization	specialization (R)	2.55	0.68	-0.117	0.042	0.020	-0.034	0.086	-0.060	0.095	0.087	0.114	-0.013	1.000		
	working hours (day)	7.29	3.68	0.153	0.608	0.805	0.681	0.290	0.461	0.244	0.286	0.163	0.869	-0.093	1.000	
	working days (week)	4.74	1.76	0.202 *	0.125	0.118	0.182 *	-0.068	0.144	-0.019	0.117	0.087	0.099	-0.032	0.667 **	1.000
	space manager's experience (in months)	19.49	12.24	0.013	0.126	0.148	0.025	0.403	0.077	0.817	0.152	0.286	0.224	0.256	0.159	0.000
	number of staff	5.57	5.79	-0.115	-0.114	-0.066	-0.302 **	-0.165 *	-0.027	-0.041	-0.016	-0.152	-0.208 *	0.038	0.129	0.042
	compete with neighboring spaces	1.86	0.97	0.158	0.162	0.420	0.000	0.042	0.737	0.619	0.841	0.062	0.010	0.640	0.114	0.608
	focus on profitability	2.68	1.44	-0.066	-0.042	-0.053	-0.121	-0.132	-0.013	-0.109	-0.074	0.053	0.090	-0.092	-0.140	-0.248 **
	focus on community formation	4.26	0.95	0.422	0.608	0.514	0.138	0.104	0.872	0.182	0.362	0.517	0.271	0.261	0.085	0.002
	cooperate with neighboring spaces	2.53	1.37	0.066	-0.164 *	-0.008	0.053	-0.139	0.163 *	-0.074	0.097	-0.096	-0.019	-0.036	0.056	0.041
	cooperate with distant spaces	2.75	1.48	0.422	0.044	0.921	0.520	0.088	0.045	0.365	0.234	0.239	0.816	0.664	0.495	0.614
Business Strategy	cooperate with the local community	3.47	1.30	0.140	0.011	0.030	0.119	-0.085	0.161 *	-0.102	-0.001	0.069	0.037	-0.367 **	0.195 *	0.148
	cooperate with other companies	3.07	1.49	0.085	0.893	0.717	0.143	0.298	0.047	0.210	0.987	0.396	0.650	0.000	0.016	0.070
	cooperate with the government	2.63	1.50	0.135	0.329 **	0.362 **	0.241 **	0.227 **	0.014	0.090	-0.067	0.251 **	0.415 **	-0.044	0.113	-0.063
	cooperate with NPOs	2.44	1.42	0.097	0.000	0.000	0.003	0.005	0.861	0.272	0.415	0.002	0.000	0.591	0.166	0.439
	cooperate with public institutions	2.24	1.29	0.136	0.165 *	0.157	0.024	0.042	0.061	0.089	-0.034	0.056	0.085	0.031	0.025	-0.136
				0.095	0.042	0.053	0.768	0.605	0.456	0.274	0.681	0.491	0.299	0.707	0.762	0.095
				0.055	0.046	0.139	0.020	0.032	-0.027	0.039	-0.010	0.007	0.008	-0.074	0.074	-0.040
				0.497	0.576	0.088	0.808	0.697	0.740	0.632	0.905	0.935	0.919	0.364	0.364	0.624
				0.211 **	0.195 *	0.218 **	0.069	0.165 *	-0.024	0.153	-0.087	0.115	0.266 **	-0.058	-0.034	-0.159
				0.009	0.016	0.007	0.399	0.042	0.768	0.061	0.288	0.157	0.001	0.475	0.677	0.050
			0.031	0.134	0.135	0.014	0.012	0.055	0.074	-0.012	0.030	0.135	0.043	0.016	-0.044	
			0.703	0.099	0.098	0.863	0.880	0.500	0.362	0.884	0.715	0.097	0.600	0.846	0.589	
			0.072	0.307 **	0.218 **	0.121	0.159	-0.055	0.206 *	-0.046	0.149	0.295 **	0.111	0.002	-0.032	
			0.375	0.000	0.007	0.136	0.051	0.500	0.011	0.571	0.067	0.000	0.172	0.982	0.698	
			0.125	0.123	0.179 *	0.142	0.073	-0.002	0.181 *	0.023	0.111	0.162 *	0.098	-0.048	-0.108	
			0.124	0.133	0.027	0.080	0.374	0.984	0.025	0.780	0.173	0.046	0.227	0.554	0.187	
			0.085	0.087	0.072	-0.033	-0.020	-0.067	0.145	-0.131	0.032	0.114	0.063	0.009	-0.160 *	
			0.297	0.289	0.381	0.683	0.805	0.409	0.075	0.107	0.699	0.162	0.439	0.910	0.048	

Note: $N=152$. * $p < 0.05$, ** $p < 0.01$.

Each upper line contains Pearson product-moment correlation coefficients, and each lower line contains probabilities.

4.5 Space Users

As shown in Table 1, the items related to users in this paper are number of users (and heavy users), ratio of members/non-members, user attributes (jobs, age), and amount of member/non-member usage time (day). Section 4.5.1 below discusses the relationships between number of users and the items related to facility, management organization, business strategy, activity, and space users (number of heavy users). Section 4.5.2 covers the relationships between ratio of members/non-members and the items related to business strategy, activity, space users (user attributes) and performance (except sales-related items). Section 4.5.3 discusses the relationships among user job types. Finally, Section 4.5.4 covers the relationships between amount of member/non-member usage time and the items related to facility, management organization, and performance (except sales-related items).

4.5.1 Number of users

The average number of users per month was 265.92, with a median value of 70 (Uda and Abe, 2015b). As shown in Table 7, a correlation (0.162, 5% significance level) appears between floor size and number of users. However, the data suggests a relationship between number of users and number of seats (0.409), as Figures 4 and 5 show.

We found a positive correlation of 0.400 between number of users and staff size. Spaces may be increasing their staff sizes to accommodate growing numbers of users.⁴² As shown in Figure 6, however, it may not be possible to interpret the distribution of spaces with few users as linear. Each of these spaces may exhibit differences in staff size.

We observed no correlation between space manager's working time and number of users, suggesting that an increase in space manager's working time (hours or days) does not necessarily indicate user growth.⁴³

The data for the relationships between business strategy items and number of users suggest that spaces that cooperate with public institutions (0.209), other companies (0.205, 5% significance level), or distant spaces (0.191, 5% significance level) tend to have more users. When considering all relationships up to the 10% significance level, we found that spaces that cooperate with NPOs also

⁴² While this relationship seems obvious at first, staff workload does not increase linearly along with user growth because, as mentioned in footnote 34, reception duties are the main work done by the staff of coworking spaces, and they have very few opportunities to deal with all customers individually, as happens in the restaurant industry.

⁴³ When considering only heavy users, however, we observed a correlation between space manager's daily work hours and number of users (0.205, 5% significance level).

tend to have more users. There is also a significant relationship between space management policies and number of users. We observed that the more a space focuses on profitability, the more users it tends to have (0.205, 5% significance level). By contrast, we found no correlation between degree of focusing on community formation and number of users, suggesting that pursuing community formation at the space does not result in user growth.

Among the relationships between the items related to activities (events) and number of users, data suggested that the more event frequency (0.401) or type (0.308) increases, the more number of users rises.

When the number of users increases, the number of heavy users also increases (0.639). This finding may not be as obvious as intuitively expected when considering that drop-in users may represent the majority in some spaces.

Table 7 Correlation matrix for number of users

	<i>M</i>	<i>SD</i>	number of users (month)	number of heavy users (month)	floor size (m ²)	number of seats	number of partitioned seats	specialization (R)	working hours (day)	working days (week)	space manager's experience (in months)	number of staff	compete with neighboring spaces	focus on profitability	focus on community formation	cooperate with neighboring spaces	cooperate with distant spaces	cooperate with the local community	cooperate with other companies	cooperate with the local government	cooperate with NPOs	cooperate with public institutions	number of events (month)	number of event types (month)
Space Users			1.000																					
	number of users (month)	265.92	612.35	1.000																				
	number of heavy users (month)	55.17	183.82	0.639 **	1.000																			
Facility					1.000																			
	floor size (m ²)	123.95	148.20	0.162 *	0.092	1.000																		
	number of seats	33.89	26.76	0.409 **	0.240 **	0.697 **	1.000																	
Management Organization								1.000																
	number of partitioned seats	5.75	10.13	0.289 **	0.066	0.388 **	0.582 **	1.000																
	specialization (R)	2.55	0.68	-0.140	0.042	0.046	-0.140	-0.114	1.000															
Business Strategy									1.000															
	working hours (day)	7.29	3.68	0.100	0.205 *	0.090	0.112	0.053	-0.093	1.000														
	working days (week)	4.74	1.76	-0.002	0.128	0.124	0.151	0.012	-0.115	0.667 **	1.000													
Activity											1.000													
	space manager's experience (in months)	19.49	12.24	0.184 *	0.096	0.020	0.003	-0.025	0.038	0.129	0.042	1.000												
	number of staff	5.57	5.79	0.400 **	0.127	0.100	0.211 **	0.149	-0.092	-0.140	-0.248 **	0.037	1.000											
Activity													1.000											
	compete with neighboring spaces	1.86	0.97	-0.035	0.051	0.089	0.096	0.100	-0.036	0.056	0.041	-0.072	-0.059	1.000										
	focus on profitability	2.68	1.44	0.205 *	0.224 **	0.142	0.262 **	0.250 **	-0.367 **	0.195 *	0.148	-0.077	0.092	0.352 **	1.000									
Activity															1.000									
	focus on community formation	4.26	0.95	-0.021	-0.071	0.072	0.025	-0.015	-0.044	0.113	-0.063	-0.196 *	0.128	-0.076	0.133	1.000								
	cooperate with neighboring spaces	2.53	1.37	0.045	-0.027	0.052	0.046	-0.005	0.031	0.025	-0.136	0.005	0.091	0.020	0.123	0.261 **	1.000							
Activity																	1.000							
	cooperate with distant spaces	2.75	1.48	0.191 *	-0.022	0.131	0.127	0.007	-0.074	0.074	-0.040	0.136	0.135	-0.089	0.158	0.276 **	0.464 **	1.000						
	cooperate with the local community	3.47	1.30	0.019	0.792	0.107	0.120	0.933	0.364	0.624	0.095	0.097	0.276	0.052	0.601	0.000	0.000	0.000	1.000					
Activity																			1.000					
	cooperate with other companies	3.07	1.49	0.205 *	0.125	0.274 **	0.297 **	0.152	0.043	0.016	-0.044	0.129	0.204 *	0.061	0.047	0.138	0.249 **	0.372 **	0.307 **	1.000				
	cooperate with the local government	2.63	1.50	0.183	0.660	0.010	0.045	0.204	0.172	0.982	0.698	0.832	0.145	0.268	0.811	0.000	0.000	0.000	0.000	0.000	1.000			
Activity																					1.000			
	cooperate with NPOs	2.44	1.42	0.152	0.144	0.111	0.006	0.026	0.098	-0.048	-0.108	0.004	0.097	-0.023	0.018	0.155	0.324 **	0.335 **	0.300 **	0.324 **	0.505 **	1.000		
	cooperate with public institutions	2.24	1.29	0.061	0.076	0.173	0.937	0.751	0.227	0.554	0.187	0.960	0.236	0.781	0.825	0.057	0.000	0.000	0.000	0.000	0.000	0.000	1.000	
Activity																						1.000		
	number of events (month)	5.68	6.30	0.401 **	0.313 **	0.049	0.261 **	0.077	-0.194 *	0.284 **	0.246 **	0.116	0.121	0.076	0.261 **	0.114	-0.037	0.185 *	0.021	0.224 **	0.236 **	0.173 *	0.110	1.000
	number of event types (month)	3.68	3.53	0.308 **	0.049	0.056	0.237 **	0.139	-0.222 **	0.109	0.119	0.064	0.135	0.145	0.293 **	0.141	0.022	0.205 *	0.035	0.210 **	0.188 *	0.145	0.122	0.808 **

Note: N=152, *: $p < 0.05$, **: $p < 0.01$.
Each upper line contains Pearson product-moment correlation coefficients, and each lower line contains probabilities.

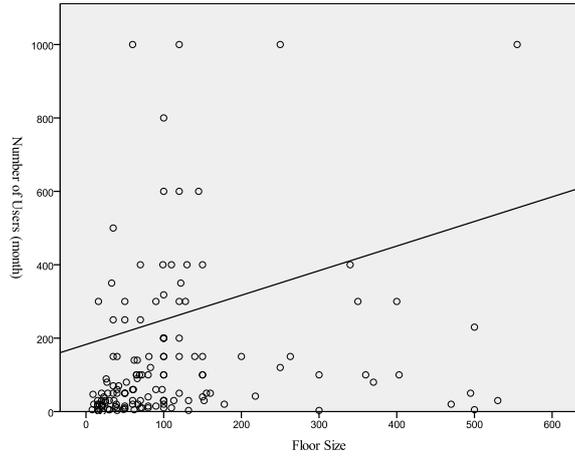


Figure 4 Relationship between the space's floor size and number of users

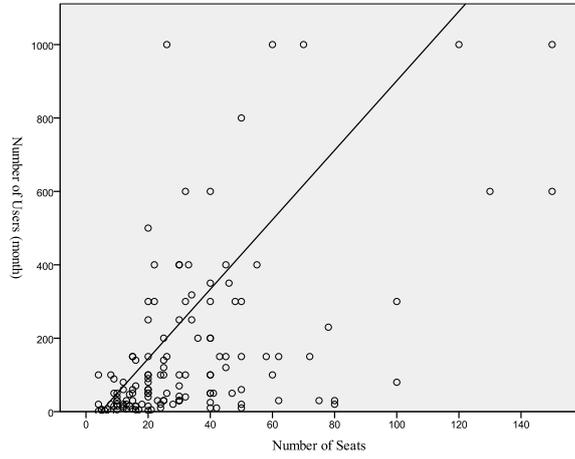


Figure 5 Relationship between number of seats and number of users

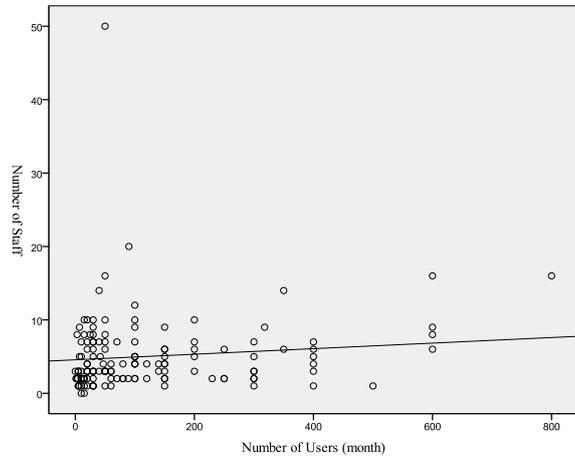


Figure 6 Relationship between number of users and number of staff

4.5.2 Member ratio

The average member ratio of the spaces surveyed was 46.7% (Uda and Abe, 2015b). As shown in Table 8-1,⁴⁴ we found no significant relationship between any of the business strategy items (management policies/cooperating policies) and the member ratio. When considering all relationships up to the 10% significance level, however, we found that the data suggested that the more spaces focus on community-formation, the higher ratios of members may be.

Among the items related to activities (events), the data suggest that event frequency and type have no effect on the member ratio and that events do not help increase the ratio of users who utilize the space frequently. Given the information presented in this paper's previous discussion, the interpretation that events do not help create the settlement of users is likely valid.

We will also discuss the relationship between member ratio and user types (job types). We observed no correlation between specific user types and the member ratio. Similarly, no significant correlation was observed between specific age brackets and the member ratio.

Finally, we will discuss the correlations between the member ratio and items related to space manager's view on the current state of space. The more the space manager facilitates user interaction, the higher the member ratio tends to be (0.165, 5% significance level). The more users hope to interact with the space manager (0.216) or the more users hope to interact with other users (0.206, 5%), the higher the member ratio. In addition, the more new products and services created through collaboration (0.202, 5%) or the more new products and services created by individual users (0.177, 5% significance level), the higher the member ratio. These findings suggest that, the more some sort of achievement by users is produced, the more the settlement of users tends to be.

⁴⁴ Table 8-1 shows the correlation coefficients with variables thought to have a relationship with the member ratio. See Table 8-3 for the correlation matrix of all the variables discussed.

Table 8-1 Member ratio correlations

	<i>M</i>	<i>SD</i>	members (%)	non-members (%)
			1.000	
Space Users			-1.000 ** 1.000	
			0.000	
			-0.015	0.015
			0.850	0.850
			0.067	-0.067
			0.414	0.414
			0.152	-0.152
			0.061	0.061
			-0.084	0.084
			0.301	0.301
			0.029	-0.029
			0.720	0.720
			0.015	-0.015
			0.854	0.854
			0.093	-0.093
			0.256	0.256
			0.070	-0.070
			0.392	0.392
			0.022	-0.022
			0.791	0.791
			0.112	-0.112
			0.170	0.170
			0.065	-0.065
			0.426	0.426
			0.038	-0.038
			0.639	0.639
			-0.077	0.077
			0.347	0.347
			-0.038	0.038
			0.645	0.645
			-0.134	0.134
			0.099	0.099
			0.051	-0.051
			0.529	0.529
			0.055	-0.055
			0.502	0.502
			0.088	-0.088
			0.278	0.278
			-0.159	0.159
			0.050	0.050
			-0.041	0.041
			0.614	0.614
			-0.040	0.040
			0.628	0.628
			-0.096	0.096
			0.238	0.238
			0.127	-0.127
			0.119	0.119
			-0.143	0.143
			0.079	0.079
			0.080	-0.080
			0.327	0.327
			0.165 *	-0.165 *
			0.042	0.042
			0.116	-0.116
			0.155	0.155
			0.066	-0.066
			0.418	0.418
			0.216 **	-0.216 **
			0.008	0.008
			0.206 *	-0.206 *
			0.011	0.011
			0.105	-0.105
			0.198	0.198
			0.202 *	-0.202 *
			0.013	0.013
			0.177 *	-0.177 *
			0.029	0.029
			0.137	-0.137
			0.092	0.092
			0.101	-0.101
			0.214	0.214

Note: *N*=152. *: *p* < 0.05, **: *p* < 0.01.

Each upper line contains Pearson product-moment correlation coefficients, and each lower line contains probabilities.

4.5.3 User job types

We asked about the ratio of space users—student, employee (e.g., company employee), freelancer, housewife/husband, and other—ensuring that the percentages added up to 100%. We now focus on Table 8-2. The correlations between freelancers and all other users were negative. Specifically, we found the following relationships: employees (−0.484), students (−0.353), others (−0.333), and housewives/husbands (−0.281). Since we were asking about ratios, when the ratio of one type increases, the ratios of the other types decrease; it is noteworthy, however, that freelancers had negative correlations with all the other user types. Spaces used by freelancers tend to be used only by freelancers. The same tendency was also observed for employees, housewives/husbands (−0.200, 5% significance level), and others (−0.270). In other words, there is little user job type diversity among the spaces surveyed.

Table 8-2 User job type correlation matrix

	<i>M</i>	<i>SD</i>	students (%)	employees (%)	freelancers (%)	housewives/husbands (%)	others (%)
students (%)	10.59	15.36	1.000				
employees (%)	29.71	23.17	-0.097	1.000			
Space Users			0.236				
freelancers (%)	42.80	27.49	-0.353 **	-0.484 **	1.000		
housewives/husbands (%)	8.57	15.44	-0.042	-0.200 *	-0.281 **	1.000	
others (%)	8.34	19.53	0.608	0.013	0.000	-0.124	1.000
			-0.142	-0.270 **	-0.333 **	0.127	
			0.081	0.001	0.000		

Note: *N* = 152. *: *p* < 0.05, **: *p* < 0.01.

Each upper line contains Pearson product-moment correlation coefficients, and each lower line contains probabilities.

Table 8-3 Member ratio correlation matrix

	<i>M</i>	<i>SD</i>	members (%)	non-members (%)	compete with neighboring spaces	focus on profitability	focus on community formation	cooperate with neighboring spaces	cooperate with distant spaces	cooperate with the local community	cooperate with other companies	cooperate with the local government	cooperate with NPOs	cooperate with public institutions	number of events (month)	number of event types (month)	number of users (month)	number of heavy users (month)		
Space Users			1.000																	
	members (%)	46.66	38.91																	
	non-members (%)	53.34	38.91	-1.000 **	1.000															
	compete with neighboring spaces	1.86	0.97	-0.015	0.015															
	focus on profitability	2.68	1.44	0.850	0.850															
	focus on community formation	4.26	0.95	0.067	-0.067	0.352 **	1.000													
	cooperate with neighboring spaces	2.53	1.37	0.152	-0.152	-0.076	0.133	1.000												
	cooperate with distant spaces	2.75	1.48	0.061	0.061	0.352	0.102	0.261 **												
	cooperate with the local community	3.47	1.30	-0.084	0.084	0.020	0.123	0.261 **	0.464 **											
	cooperate with other companies	3.07	1.49	0.301	0.301	0.805	0.130	0.001	0.276 **	0.464 **										
Business Strategy	cooperate with the local government	2.63	1.50	0.029	-0.029	-0.089	0.158	0.000	0.276 **	0.464 **										
	cooperate with NPOs	2.44	1.42	0.720	0.720	0.276	0.052	0.001	0.000											
	cooperate with public institutions	2.24	1.29	0.015	-0.015	0.015	0.021	0.422 **	0.259 **	0.306 **	1.000									
	number of events (month)	5.68	6.30	0.854	0.854	0.856	0.798	0.000	0.001	0.000										
	number of event types (month)	3.68	3.53	0.093	-0.093	0.061	0.047	0.138	0.249 **	0.372 **	0.307 **	1.000								
	number of users (month)	265.92	612.35	0.256	0.256	0.452	0.564	0.091	0.002	0.000	0.000									
	number of heavy users (month)	55.17	183.82	0.070	-0.070	-0.090	-0.020	0.309 **	0.290 **	0.295 **	0.350 **	0.398 **	1.000							
	under 20s (%)	5.32	10.00	0.392	0.392	0.268	0.811	0.000	0.000	0.000	0.000									
	20s (%)	21.15	15.33	0.022	-0.022	-0.023	0.018	0.155	0.324 **	0.335 **	0.300 **	0.324 **	0.505 **	1.000						
	30s (%)	28.38	19.43	0.791	0.791	0.781	0.825	0.057	0.000	0.000	0.000	0.000	0.423 **	1.000						
Space Users (excluding percentage of members)	40s (%)	22.75	13.91	0.112	-0.112	-0.064	-0.087	0.161 *	0.188 *	0.350 **	0.547 **	0.510 **	0.423 **	1.000						
	50s (%)	8.63	9.18	0.170	0.170	0.434	0.285	0.048	0.020	0.000	0.000	0.000	0.000	0.000	1.000					
	over 60s (%)	3.78	6.88	0.065	-0.065	0.076	0.261 **	0.114	-0.037	0.185 *	0.021	0.224 **	0.236 **	0.173 *	0.110	1.000				
	students (%)	10.59	15.36	0.426	0.426	0.351	0.601	0.161	0.651	0.023	0.797	0.006	0.003	0.033	0.177	0.808 **	1.000			
	employees (%)	29.71	23.17	0.038	-0.038	0.145	0.293 **	0.141	0.022	0.205 *	0.035	0.210 **	0.188 *	0.145	0.122	0.808 **	1.000			
	freelancers (%)	42.80	27.49	0.639	0.639	0.074	0.000	0.083	0.792	0.011	0.673	0.009	0.020	0.074	0.134	0.000				
	housewives/husbands (%)	8.57	15.44	-0.077	0.077	-0.035	0.205 *	-0.021	0.045	0.191 *	0.041	0.205 *	0.108	0.152	0.209 **	0.401 **	0.308 **	1.000		
	others (%)	8.34	19.53	0.347	0.347	0.670	0.011	0.793	0.580	0.019	0.617	0.011	0.183	0.061	0.010	0.000	0.000	0.000		
	the space manager facilitates user interaction	3.73	1.22	-0.038	0.038	0.051	0.224 **	-0.071	-0.027	-0.022	0.001	0.125	0.036	0.144	0.087	0.313 **	0.049	0.639 **	1.000	
	users facilitate own interaction	3.41	1.20	0.645	0.645	0.531	0.005	0.382	0.738	0.792	0.991	0.124	0.660	0.076	0.286	0.000	0.547	0.000		
the space is used for the purpose of getting work done	3.72	0.95	-0.134	0.134	-0.075	-0.056	-0.076	-0.093	-0.104	-0.025	-0.099	0.018	0.138	0.036	0.056	0.051	0.102	0.034		
users hope to interact with the space manager	3.38	0.92	0.099	0.099	0.361	0.494	0.352	0.255	0.203	0.762	0.223	0.825	0.090	0.656	0.494	0.529	0.212	0.673		
users hope to interact with other users	3.51	1.03	0.051	-0.051	-0.089	-0.089	0.011	-0.009	-0.039	0.048	0.098	-0.071	-0.025	0.109	0.019	-0.025	0.129	0.061		
new products and services are created through collaboration	3.43	1.12	0.529	0.529	0.278	0.738	0.889	0.911	0.634	0.557	0.231	0.385	0.764	0.182	0.819	0.757	0.454	0.454		
new products and services are created by individual users	3.32	1.09	0.055	-0.055	0.194 *	-0.011	0.049	0.058	0.059	-0.065	0.020	-0.097	-0.115	-0.078	-0.092	-0.057	-0.169 *	-0.108		
want to increase users at the space	4.43	0.85	0.502	0.502	0.017	0.897	0.550	0.478	0.473	0.429	0.811	0.236	0.159	0.342	0.257	0.488	0.037	0.184		
satisfied with the space's current state	2.26	1.08	0.088	-0.088	-0.001	0.051	0.018	0.026	-0.028	0.004	-0.106	0.040	-0.002	-0.141	0.058	0.012	-0.073	0.012		
the space is profitable on a non-consolidated basis	2.28	1.30	0.278	0.278	0.994	0.529	0.822	0.750	0.734	0.958	0.196	0.625	0.976	0.083	0.474	0.884	0.375	0.888		
			-0.159	0.159	-0.097	0.031	-0.104	-0.064	0.061	0.017	-0.045	0.043	0.037	0.008	-0.107	0.022	0.035	0.672		
			0.050	0.050	0.233	0.704	0.201	0.434	0.455	0.837	0.596	0.653	0.922	0.189	0.381	0.789	0.672	0.672		
			-0.041	0.041	-0.110	0.163 *	0.049	0.025	0.047	0.080	0.145	0.267 **	0.134	0.199 *	0.163 *	0.213 **	0.161 *	0.050		
			0.614	0.614	0.178	0.045	0.547	0.764	0.564	0.326	0.074	0.001	0.099	0.014	0.045	0.047	0.540	0.540		
			-0.040	0.040	-0.124	-0.093	-0.029	-0.165 *	-0.065	0.069	-0.111	-0.106	-0.044	0.050	-0.048	-0.068	0.126	0.091		
			0.628	0.628	0.127	0.253	0.724	0.042	0.425	0.401	0.174	0.194	0.589	0.541	0.557	0.406	0.264	0.264		
			-0.096	0.096	0.054	0.091	-0.191 *	0.038	0.049	-0.089	0.024	-0.052	0.007	-0.041	0.034	0.061	0.129	-0.021		
			0.238	0.238	0.512	0.266	0.018	0.639	0.545	0.274	0.765	0.527	0.927	0.619	0.677	0.453	0.115	0.795		
			0.127	-0.127	0.130	0.094	0.153	0.180 *	0.007	0.081	0.022	0.016	0.052	-0.004	-0.044	-0.010	-0.161 *	-0.040		
			0.119	0.119	0.110	0.248	0.059	0.027	0.931	0.323	0.787	0.848	0.528	0.964	0.592	0.900	0.048	0.626		
			-0.143	0.143	-0.188 *	-0.145	-0.084	-0.053	-0.055	-0.029	-0.069	0.030	-0.101	0.005	-0.014	-0.038	-0.023	0.000		
			0.079	0.079	0.020	0.074	0.305	0.520	0.504	0.724	0.397	0.718	0.217	0.952	0.865	0.640	0.777	0.999		
			0.080	-0.080	0.000	-0.052	0.100	-0.127	0.026	-0.039	0.082	0.099	0.033	0.010	0.070	0.026	-0.008	0.010		
			0.165 *	-0.165 *	0.125	0.138	0.480 **	0.283 **	0.326 **	0.318 **	0.283 **	0.262 **	0.179 *	0.142	0.144	0.156	-0.120	-0.039		
			0.042	0.042	0.126	0.089	0.000	0.000	0.000	0.000	0.001	0.028	0.081	0.076	0.055	0.142	0.635	0.635		
			0.116	-0.116	0.032	0.040	0.324 **	0.140	0.246 **	0.245 **	0.223 **	0.172 *	0.121	0.194 *	0.151	0.130	-0.154	-0.043		
			0.155	0.155	0.691	0.629	0.000	0.084	0.002	0.002	0.006	0.034	0.138	0.017	0.063	0.109	0.059	0.603		
			0.066	-0.066	0.094	0.181 *	0.022	0.019	-0.046	-0.016	0.046	-0.085	0.098	-0.086	0.044	0.149	0.081	0.105		
			0.418	0.418	0.248	0.026	0.785	0.820	0.572	0.847	0.571	0.300	0.230	0.291	0.594	0.067	0.324	0.198		
			0.216 **	-0.216 **	0.014	0.027	0.396 **	0.181 *	0.181 *	0.269 **	0.161 *	0.151	0.115	0.137	0.141	0.148	-0.236 **	-0.073		
			0.008	0.008	0.865	0.742	0.000	0.563	0.025	0.001	0.047	0.064	0.157	0.092	0.083	0.070	0.003	0.368		
			0.206 *	-0.206 *	0.004	0.097	0.461 **	0.157	0.188 *	0.367 **	0.247 **	0.122	0.179 *	0.096	0.118	-0.117	-0.082	0.000		
			0.011	0.011	0.959	0.232	0.000	0.053	0.020	0.000	0.002	0.005	0.134	0.027	0.240	0.147	0.150	0.318		
			0.105	-0.105	0.025	0.009	0.305 **	0.066	0.162 *	0.224 **	0.353 **	0.165 *	0.074	0.167 *	0.168 *	-0.056	0.018	0.018		
			0.198	0.198	0.759	0.909	0.000	0.420	0.046	0.005	0.000	0.043	0.363	0.039	0.128	0.039	0.658	0.827		
			0.202 *	-0.202 *	0.099	-0.047	0.162 *	-0.012	0.067	0.085	0.318 **	0.087	0.095	0.120	0.091	0.082	-0.111	0.049		
			0.013	0.013	0.226	0.563	0.046	0.880	0.414	0.298	0.000	0.289	0.242	0.141	0.262	0.314	0.175	0.550		
			0.177 *	-0.177 *	0.225 **	0.265 **	0.240 **	0.039	-0.041	0.076	0.067	0.033	0.018	-0.118	0.083	0.119	-0.238 **	0.010		
			0.029	0.029	0.005	0.001	0.003	0.637	0.618	0.353	0.414	0.686	0.823	0.149	0.311	0.144	0.003	0.902		

4.5.4 Usage time

The average member usage time was 4.56 hours per day (Uda and Abe, 2015b). As shown in Table 9, we observed a correlation between a space's floor size and member usage time (0.368). Figure 7 shows this relationship. We also observed that number of seats (0.282) and number of partitioned seats (0.212) each had a positive correlation with usage time.

Among the management organization items, we will focus on space manager's working time and age. A correlation appears between space manager's working time (days) and member usage time (0.343), perhaps indicating that space managers extend the space's operation hours to meet user demand or that usage time increases due to long operation hours. The older the space manager, the shorter the member usage time tends to be (-0.180, 5% significance level). The average space manager age was 38.91, and most users were in their thirties or forties. Thus, the more the age gap between the space manager and users increases, the more the difficulty of interacting and sharing information with users might increase.

The following findings on the relationships between items pertaining to space manager's view of the current state of the space and usage time were noteworthy. The more space managers facilitate user interaction (0.220) or the more users facilitate own interaction (0.230), the longer the member usage time tends to be. The more users hope to interact with the space manager (0.191, 5% significance level) or the more they hope to interact with other users (0.251), the longer the usage time tends to be. The more new products and services created through collaboration (0.229) or the more new products and services created by individual users (0.279), the longer the usage time becomes.

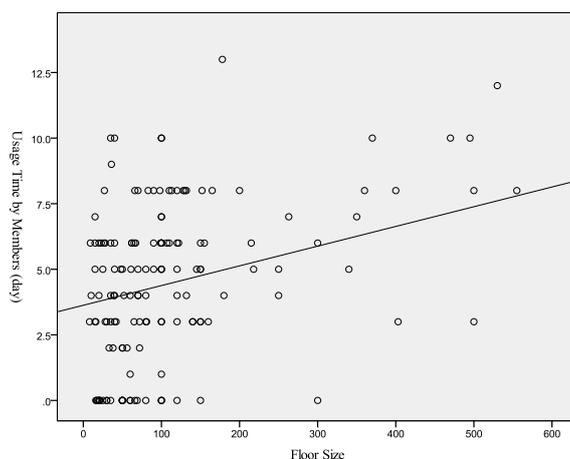


Figure 7 Relationship between floor size and member usage time

4.6 Performance

As shown in Table 1, the items pertaining to performance are sales, member sales ratio, and space manager’s view on the current state of the space. This last item is subdivided into 10 items:⁴⁵ (1) “The space manager works to facilitate interactions among users” (“the space manager facilitates user interaction” hereafter); (2) “Users try to interact on their own by exchanging business cards, etc.” (“users facilitate own interaction”); (3) “Users use the space because they can get work done” (“the space is used for the purpose of getting work done”); (4) “Users use the space because they hope to interact with the space manager” (“users hope to interact with the space manager”); (5) “Users use the space because they hope to interact with other users” (“users hope to interact with other users”); (6) “New business and services are created through collaboration between users” (“new products and services are created through collaboration”); (7) “New businesses and services are created by individual users” (“new products and services are created by individual users”); (8) “I would like to increase users at the space that I operate” (“want to increase users at the space”); (9) “I’m satisfied with the current state of the space that I operate” (“satisfied with the space’s current state”); and (10) “The space generates profits on a non-consolidated basis” (“the space is profitable on a non-consolidated basis”)

Section 4.6.1 below discusses the relationships between sales and the items in facility to performance (items related to member sales ratio and space manager’s view on the current state of the space). Section 4.6.2 covers the relationships between the ten items comprising the view on the

⁴⁵ Respondents evaluated these items on a five-point scale ranging from “Completely disagree” (1) to “Completely agree” (5).

current state of the space and the items pertaining to facility to space users, along with the relationships among the 10 items comprising the space manager's view on the current state of the space.

4.6.1 Sales

The average monthly sales generated by space business was 512,420 yen⁴⁶. The median value was 200,000 yen, and about 85% of the sales did not exceed 1 million yen (Uda and Abe, 2015b).

As shown in Table 10-1,⁴⁷ the more a space's floor size increases, the higher its sales (0.281). Taking investment in fixed assets such as the space itself or equipment into consideration, few owners or space managers might increase the floor size because sales have increased, suggesting that owners or space managers who want to select a large space and increase sales right from the start of operation tend to also have high sales as a result. The more the number of seats increases, the higher the sales (0.500). Figures 8 and 9 show these relationships. Since it is difficult to significantly increase the number of seats after opening a space (even if not as difficult as increasing the floor size), the more a space manager tends to have opened a large space with a large number of seats, the more its sales tend to be high.

We observed a negative correlation between degree of specialization (R) and sales (-0.272 , 5% significance level), suggesting that the more a space manager is dedicated to the space business, the higher its sales.⁴⁸ Moreover, the larger the staff size, the higher the sales (0.502). However, it is also possible to infer that a space manager employs more because sales are high. We did not observe a correlation between space manager's working hours/days and sales, suggesting that, even with long business hours, a space may not be able to increase sales. We did not observe a correlation between space manager's age or experience (in months) and sales. Given that both variables are proxies for space manager's experience, space manager's experience may not be linked to space business success.

⁴⁶ 1 Yen was approximately 0.00951 US Dollar or 0.00726 Euro as of September 3, 2014 when was the last day of our questionnaire survey, according to the Bank of Japan's statistical data about Foreign Exchange (<https://www.boj.or.jp/statistics/market/forex/fxdaily/2014/140903.pdf>).

⁴⁷ Table 10-1 shows the correlation coefficients with variables thought to have a relationship with sales (monthly). See Table 10-2 for the correlation matrix of all the variables discussed.

⁴⁸ The responses for degree of specialization (R) were as follows: 14 respondents reported doing space operation only, 37 reported mainly doing space operation, and 98 reported business other than space operation as their main business. The spaces analyzed in this paper are thought to represent slightly more than 40% of all coworking spaces in Japan. These findings imply that the sample is unlikely to have a normal distribution for degree of specialization. The interpretations of the findings in this section therefore require caution.

It is not necessarily true that the more a space manager focuses on profitability on a non-consolidated basis, the higher its sales. Similarly, we did not observe a correlation between the degree to which a space manager focuses on community formation in the space and sales (though there was a correlation at the 10% significance level).

While we generally observed links between the degree of cooperating with other actors or the local community and sales, they were not strong. We observed correlations between the degree of cooperating with other companies (0.266, 5% significance level) or with public institutions (0.230, 5% significance level) and sales. However, we did not observe correlations between the degree of cooperating with neighboring/distant spaces, the local community, or NPOs and sales. We found many cases of cooperating, such as projects or spaces facilitating the mutual use of spaces like “Coworking Visa .jp”, and events cohosted with local community or local government, but the data suggest that cooperating does not, alone, result in sales increases.

We observed that higher the number of events (0.278, 5% significance level) or more diverse event types (0.369) tended to result in higher sales.

The more the number of users increases, the higher the sales of a space (0.721). We observed no correlation between the ratio of a specific user type (such as employee or freelancer) among all the users and sales. We observed no correlation between the average daily usage time of members or non-members (drop-ins) and sales. This finding suggests that, for both members and drop-ins, increases in average usage time are not tied to sales. This finding may be partly explained by the billing system of coworking spaces. For many spaces, fees do not increase as a linear function of usage time: for members, a fixed monthly fee system is dominant. For drops-ins, the fee system is based on number of times used (such as 1,000 yen per day) or time-based fees incrementally reduced (such as 500 yen for two hours or 1,000 yen for a half-day).

We did not observe a correlation between the degree to which the space manager facilitates user interaction or the degree to which users facilitate own interaction and sales. In other words, whether user interaction is promoted or not makes no difference to the sales of the space. We did not observe a correlation between the degree of the creation of new business or services by users either through user collaboration or by individual users and sales, indicating that performance created through the use of a space do not contribute directly to its business.

We did not observe a correlation between the member sales ratio and sales, suggesting that increases in the relative proportion of members are not necessarily tied to sales increases.

Table 10-1 Sales correlations

	<i>M</i>	<i>SD</i>	sales (month)
			1.000
Performance	sales (month) †	51.42	117.16
	percentage of member sales (%)	46.66	38.91
	percentage of non-member sales (%)	53.34	38.91
Facility	floor size (m ²)	123.95	148.20
	number of seats	33.89	26.76
	number of partitioned seats	5.75	10.13
	specialization (R)	2.55	0.68
Management Organization	working hours (day)	7.29	3.68
	working days (week)	4.74	1.76
	space managers' experience (in months)	19.49	12.24
	space manager's age ‡	38.91	8.95
Business Strategy	number of staff	5.57	5.79
	compete with neighboring spaces	1.86	0.97
	focus on profitability	2.68	1.44
	focus on community formation	4.26	0.95
	cooperate with neighboring spaces	2.53	1.37
	cooperate with distant spaces	2.75	1.48
	cooperate with the local community	3.47	1.30
	cooperate with other companies	3.07	1.49
	cooperate with the local government	2.63	1.50
	cooperate with NPOs	2.44	1.42
	cooperate with public institutions	2.24	1.29
	number of events (month)	5.68	6.30
	number of event types (month)	3.68	3.53
	number of users (month)	265.92	612.35
Space Users	number of heavy users (month)	55.17	183.82
	students (%)	10.59	15.36
	employees (%)	29.71	23.17
	freelancers (%)	42.80	27.49
Performance (excluding sales)	housewives/husbands (%)	8.57	15.44
	others (%)	8.34	19.53
	members (%)	46.66	38.91
	non-members (%)	53.34	38.91
	usage time by members (day)	4.56	3.02
	usage time by non-members (day)	3.14	2.05
	the space manager facilitates user interaction	3.73	1.22
	users facilitate own interaction	3.41	1.20
	the space is used for the purpose of getting work done	3.72	0.95
	users hope to interact with the space manager	3.38	0.92
users hope to interact with other users	3.51	1.03	
new products and services are created through collaboration	3.43	1.12	
new products and services are created by individual users	3.32	1.09	
want to increase users at the space	4.43	0.85	
satisfied with the space's current state	2.26	1.08	
the space is profitable on a non-consolidated basis	2.28	1.30	

Note: *N* = 152, †: *N* = 84, ‡: *N* = 151 *; *p* < 0.05, **; *p* < 0.01.

Each upper line contains Pearson product-moment correlation coefficients, and each lower line contains probabilities.

Table 10-2 Sales correlation matrix

	M	SD	sales (month) †	percentage of member sales (%)	percentage of non-member sales (%)	floor size (m ²)	number of seats	number of partitioned seats	specialization (R)	working hours (day)	working days (week)	space manager's experience (in months)	space manager's age †	number of staff	compete with neighboring spaces	focus on profitability	focus on community formation	cooperate with neighboring spaces	cooperate with distant spaces	cooperate with the local community	cooperate with other companies	cooperate with the local government	
			1.000																				
Performance			sales (month) †	51.42	117.16																		
			percentage of member sales (%)	46.66	38.91	0.035	1.000																
			percentage of non-member sales (%)	53.34	38.91	-0.035	-1.000	**	1.000														
Facility			floor size (m ²)	123.95	148.20	0.281**	0.197*	-0.197*	1.000														
			number of seats	33.89	26.76	0.500**	0.116	-0.116	0.697**	1.000													
			number of partitioned seats	5.75	10.13	0.000	0.153	0.153	0.000	0.000	0.538**	0.082	-0.082	0.388**	0.582**	1.000							
			specialization (R)	2.55	0.68	-0.272*	-0.045	0.045	0.046	-0.140	-0.114	1.000											
			working hours (day)	7.29	3.68	0.097	0.005	-0.005	0.090	0.112	0.053	-0.093	1.000										
			working days (week)	1.49	1.76	0.278	0.047	0.047	0.272	0.168	0.250	0.256	0.667**	1.000									
Management Organization			space manager's experience (in months)	19.49	12.24	0.271	0.677	0.677	0.127	0.064	0.880	0.159	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			space manager's age †	38.91	8.95	0.261**	0.298	0.298	0.804	0.974	0.760	0.640	0.114	0.608	0.065	0.065	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			number of staff	5.57	5.79	0.502**	0.124	-0.124	0.100	0.211**	0.149	-0.092	-0.140	-0.248**	0.037	-0.102	1.000						
			compete with neighboring spaces	1.86	0.97	0.965	0.209	0.209	0.275	0.240	0.219	0.064	0.495	0.614	0.380	0.802	0.471	1.000					
			focus on profitability	2.68	1.44	0.210**	0.142	-0.142	0.142	0.262**	0.259**	-0.267**	0.195*	0.148	-0.077	0.018	0.092	0.092	0.352**	1.000			
			focus on community formation	4.26	0.95	0.065	0.214**	-0.214**	0.072	0.025	-0.015	-0.044	0.113	-0.063	-0.196*	0.058	0.128	-0.076	0.133	1.000			
			cooperate with neighboring spaces	2.53	1.37	0.178	-0.016	0.016	0.052	0.046	-0.009	0.031	0.025	-0.136	0.005	-0.085	0.091	0.020	0.127	0.261**	1.000		
			cooperate with distant spaces	2.75	1.48	0.172	0.493	-0.493	0.131	0.127	0.007	-0.074	0.074	-0.040	0.136	0.071	0.135	-0.089	0.158	0.276**	0.464**	1.000	
			cooperate with the local community	3.47	1.30	0.036	0.074	-0.074	0.008	0.000	0.009	-0.058	-0.034	-0.159	-0.146	0.030	0.100	0.015	0.021	0.422**	0.259**	0.306**	1.000
			cooperate with other companies	3.07	1.49	0.256**	0.123	-0.123	0.274**	0.297**	0.152	0.043	0.033	0.204*	0.061	0.047	0.138	0.240**	0.372**	0.307**	0.307**	1.000	
			cooperate with the local government	2.63	1.50	0.054	0.174	-0.174	0.010	0.045	0.204	0.172	0.982	0.698	0.832	0.050	0.145	0.268	0.811	0.000	0.000	0.000	0.000
			cooperate with NPOs	2.44	1.42	0.106	0.055	-0.055	0.111	0.006	0.026	0.098	-0.048	-0.108	0.004	0.106	0.097	-0.022	0.018	0.155	0.324**	0.335**	0.309**
			cooperate with public institutions	2.24	1.29	0.230**	0.133	-0.133	0.216**	0.229**	0.124	0.063	0.009	-0.160**	0.126	0.037	0.213**	-0.064	-0.087	0.161*	0.188**	0.355**	0.350**
			number of events (month)	5.68	6.30	0.278**	0.085	-0.085	0.049	0.261**	0.077	-0.194**	0.284**	0.246**	0.116	-0.052	0.121	0.076	0.261**	0.114	-0.037	0.185**	
			number of event types (month)	3.68	3.53	0.010	0.298	0.298	0.552	0.000	0.343	0.017	0.000	0.002	0.156	0.529	0.136	0.351	0.001	0.461	0.651	0.023	
			number of users (month)	265.92	612.25	0.721**	-0.076	0.076	0.162**	0.409**	0.289**	0.100	-0.002	0.184**	-0.154	0.400**	-0.035	0.205*	-0.021	0.045	0.191*	0.041	
			number of heavy users (month)	55.17	183.82	0.161	0.089	0.089	0.092	0.240**	0.066	0.042	0.205*	0.128	0.096	-0.003	0.127	0.051	0.224**	-0.071	0.027	0.022	
			students (%)	10.59	15.36	0.142	0.276	0.276	0.261	0.003	0.416	0.004	0.011	0.228	0.071	0.228	0.071	0.531	0.068	0.382	0.738	0.792	
			employees (%)	29.71	23.17	0.038	-0.079	0.079	-0.135	0.013	0.084	-0.085	0.132	0.068	-0.042	-0.191**	0.087	-0.124	-0.093	-0.029	-0.165*	-0.065	
			freelancers (%)	42.80	27.49	0.159	-0.059	0.059	0.013	0.015	0.097	-0.007	0.010	0.048	-0.061	-0.082	0.176**	0.054	0.091	-0.191**	0.038	0.049	
			house/ives/husbands (%)	8.57	15.44	0.150	0.472	0.472	0.870	0.853	0.233	0.935	0.905	0.558	0.453	0.316	0.030	0.512	0.266	0.018	0.639	0.545	
			others (%)	8.34	19.53	0.165	0.155	-0.155	-0.005	-0.073	-0.146	0.016	-0.006	-0.108	0.066	0.097	-0.179*	0.130	0.094	0.153	0.180*	0.007	
			members (%)	46.66	38.91	0.013	0.854**	-0.854**	0.197*	0.078	0.053	-0.090	0.006	0.000	0.117	-0.026	0.117	-0.015	0.067	0.084	0.029		
			non-members (%)	53.34	38.91	-0.013	-0.854**	0.854**	-0.197*	-0.078	-0.053	0.090	-0.006	0.000	-0.117	-0.026	-0.117	0.015	-0.067	-0.152	0.084		
			usage time by members (day)	4.56	3.02	0.117	0.442**	-0.442**	0.368**	0.282**	0.212**	-0.014	0.343**	0.131	0.087	-0.180*	0.099	0.158	0.230**	0.217**	0.153		
			usage time by non-members (day)	3.14	2.05	0.288	0.000	0.000	0.000	0.000	0.009	0.862	0.000	0.109	0.287	0.027	0.401	0.053	0.004	0.067	0.056		
			the space manager facilitates user interaction	3.73	1.22	0.087	0.027	0.027	0.002	0.042	0.163	0.102	0.000	0.017	0.538	0.162	0.228	0.072	0.296	0.792	0.181		
			users facilitate own interaction	3.41	1.20	0.080	0.201*	-0.201*	0.178**	0.081	-0.012	-0.009	0.144	0.060	0.018	0.030	-0.122	0.125	0.138	0.480**	0.281**		
			the space is used for the purpose of getting work done	3.72	0.95	0.469	0.013	0.013	0.029	0.321	0.884	0.401	0.077	0.463	0.823	0.715	0.134	0.126	0.089	0.000	0.000		
			users hope to interact with the space manager	3.38	0.92	0.185	0.119	-0.119	0.096	-0.175*	0.048	0.175*	0.163**	0.004	-0.086	0.042**	0.040	0.032	0.040	0.324**	0.140		
			users hope to interact with other users	3.51	1.03	0.045	0.238**	-0.238**	0.098	-0.088	0.388	0.031	0.560	0.045	0.955	0.293	0.691	0.629	0.000	0.084	0.002		
			new products and services are created through collaboration	3.43	1.12	0.686	0.003	0.003	0.230	0.278	0.079	0.904	0.553	0.746	0.738	0.290	0.871	0.959	0.232	0.000			
			new products and services are created by individual users	3.32	1.09	0.025	0.180**	-0.180**	0.168**	0.084	-0.018	0.008	0.054	0.037	0.122	-0.110	0.021	0.025	0.009	0.305**			
			want to increase users at the space	4.43	0.85	0.824	0.026	0.026	0.039	0.301	0.828	0.919	0.505	0.653	0.134	0.181	0.801	0.759	0.909	0.000			
			satisfied with the space's current state	2.26	1.08	0.014	0.489	-0.489	0.116	0.455	0.249	0.896	0.423	0.768	0.804	0.325	0.465	0.511	0.798	0.542			
			the space is profitable on a non-consolidated basis	2.28	1.30	0.349**	0.140	-0.140	0.254**	0.346**	0.111	0.092	-0.246**	0.131	-0.129	0.164**	-0.188**	0.001	0.011	-0.075			

Note: N=152, T=N=84, T; N=151 *p < 0.05, **p < 0.01. Each upper line contains Pearson product-moment correlation coefficients, and each lower line contains probabilities.

cooperate with NPOs	cooperate with public institutions	number of events (month)	number of event types (month)	number of users (month)	number of heavy users (month)	students (%)	employees (%)	freelancers (%)	housewives/husbands (%)	others (%)	members (%)	non-members (%)	usage time by members (day)	usage time by non-members (day)	the space manager facilitates user interaction	users facilitate own interaction	the space is used for the purpose of getting work done	users hope to interact with the space manager	users hope to interact with other users	new products and services are created through collaboration	new products and services are created by individual users	want to increase users at the space	satisfied with the space's current state	the space is profitable on a non-consolidated basis
1.000																								
0.423 **	1.000																							
0.000																								
0.173 *	0.110	1.000																						
0.033	0.177																							
0.145	0.122	0.808 **	1.000																					
0.074	0.134	0.000																						
0.152	0.209 **	0.401 **	0.308 **	1.000																				
0.061	0.010	0.000	0.000																					
0.144	0.087	0.313 **	0.049	0.639 **	1.000																			
0.076	0.286	0.000	0.547	0.000																				
-0.044	0.050	-0.048	-0.068	0.126	0.091	1.000																		
0.589	0.541	0.557	0.406	0.121	0.264																			
0.007	-0.061	0.034	0.061	0.129	-0.021	-0.097	1.000																	
0.927	0.619	0.677	0.453	0.115	0.795	0.236																		
0.052	-0.004	-0.044	-0.010	-0.161 *	-0.040	-0.353 **	-0.484 **	1.000																
0.528	0.964	0.592	0.900	0.048	0.626	0.000	0.000																	
-0.101	0.005	-0.014	-0.038	-0.023	0.000	-0.042	-0.200 *	-0.281 **	1.000															
0.217	0.852	0.865	0.640	0.777	0.999	0.608	0.013	0.000																
0.033	0.010	0.070	0.026	-0.008	0.010	-0.142	-0.270 **	-0.333 **	-0.124	1.000														
0.688	0.901	0.391	0.755	0.926	0.907	0.081	0.001	0.000	0.127															
0.022	0.112	0.065	0.038	-0.077	-0.038	-0.040	-0.096	0.127	-0.143	0.080	1.000													
0.791	0.170	0.426	0.639	0.347	0.645	0.628	0.238	0.119	0.079	0.327														
0.022	0.112	-0.065	-0.038	0.077	0.038	0.040	0.096	-0.127	-0.143	-0.080	-1.000 **	1.000												
0.791	0.170	0.426	0.639	0.347	0.645	0.628	0.238	0.119	0.079	0.327	0.000													
0.118	0.180	0.120	0.122	0.004	-0.017	-0.134	-0.047	0.215 **	-0.295 **	0.093	0.373 **	-0.373 **	1.000											
0.149	0.066	0.139	0.135	0.963	0.838	0.100	0.564	0.008	0.000	0.257	0.000	0.000												
0.066	-0.048	0.122	0.105	0.047	0.119	-0.077	-0.004	0.198 *	-0.144	-0.100	-0.216 **	0.216 **	0.391 **	1.000										
0.418	0.555	0.135	0.196	0.562	0.144	0.343	0.864	0.014	0.078	0.220	0.008	0.008	0.000											
0.179 *	0.142	0.144	0.156	-0.120	-0.039	-0.177 *	-0.157	0.149	-0.016	0.129	0.165 *	-0.165 *	0.220 **	0.050	1.000									
0.028	0.081	0.076	0.055	0.142	0.635	0.030	0.053	0.067	0.841	0.114	0.042	0.042	0.006	0.541										
0.121	0.194 *	0.151	0.130	-0.154	-0.043	-0.150	-0.166 *	0.099	0.023	0.157	0.116	-0.116	0.230 **	0.118	0.569 **	1.000								
0.138	0.017	0.063	0.109	0.089	0.603	0.065	0.041	0.226	0.775	0.053	0.155	0.155	0.004	0.147	0.000									
0.098	-0.086	0.044	0.149	0.081	0.105	-0.049	0.105	0.167 *	-0.223 **	-0.144	0.066	-0.066	0.111	0.151	-0.072	-0.048	1.000							
0.230	0.291	0.594	0.067	0.324	0.198	0.547	0.199	0.040	0.006	0.076	0.418	0.172	0.063	0.377	0.559									
0.115	0.137	0.141	0.148	-0.236 **	-0.073	-0.195 *	-0.203 *	0.112	0.070	0.181 *	0.216 **	-0.216 **	0.191 *	-0.056	0.520 **	0.633 **	-0.022	1.000						
0.157	0.092	0.083	0.070	0.003	0.368	0.012	0.171	0.389	0.025	0.008	0.008	0.018	0.660	0.000	0.000	0.789								
0.122	0.179 *	0.096	0.118	-0.117	-0.082	-0.286 **	-0.098	0.134	0.030	0.129	0.206 *	-0.206 *	0.251 **	0.031	0.535 **	0.645 **	-0.076	0.689 **	1.000					
0.134	0.027 *	0.240	0.147	0.150	0.318	0.000	0.227	0.099	0.712	0.114	0.011	0.011	0.002	0.706	0.000	0.000	0.350	0.000						
0.074	0.167 *	0.124	0.168 *	-0.036	0.018	-0.139	-0.203 *	0.124	-0.035	0.203 *	0.105	-0.105	0.229 **	0.157	0.473 **	0.605 **	0.086	0.827 **	0.555 **	1.000				
0.363	0.039	0.128	0.039	0.658	0.827	0.088	0.012	0.127	0.072	0.012	0.198	0.198	0.005	0.054	0.000	0.000	0.295	0.000	0.000					
0.095	0.120	0.091	0.082	-0.111	0.049	-0.150	-0.184 *	0.102	-0.065	0.244 **	0.202 *	-0.202 *	0.279 **	0.174 *	0.414 **	0.541 **	0.108	0.460 **	0.414 **	0.786 **	1.000			
0.242	0.141	0.262	0.314	0.175	0.550	0.065	0.024	0.212	0.425	0.002	0.013	0.013	0.001	0.032	0.000	0.000	0.183	0.000	0.000					
0.018	-0.318	0.083	0.139	-0.238 **	0.010	-0.124	-0.033	0.145	-0.234	0.038	0.177 *	-0.177 *	0.182 *	-0.055	0.322 **	0.195 *	0.160 *	0.226 **	0.228 **	0.331	0.200 *	1.000		
0.823	0.148	0.311	0.144	0.003	0.902	0.127	0.087	0.074	0.100	0.640	0.029	0.029	0.025	0.504	0.000	0.016	0.049	0.005	0.005	0.109	0.013			
0.062	0.165 *	0.119	0.113	0.221 **	0.139	-0.038	0.013	0.091	-0.113	-0.025	0.137	-0.137	0.072	0.111	-0.011	0.151	0.249 **	0.127	0.064	0.212 **	0.249 **	-0.246 **	1.000	
0.449	0.042	0.145	0.166	0.006	0.088	0.644	0.870	0.264	0.166	0.756	0.092	0.092	0.375	0.172	0.892	0.064	0.002	0.119	0.433	0.009	0.002	0.002		
0.030	0.087	0.234 **	0.264 **	0.338 **	0.268 **	0.016	0.028	0.028	-0.104	-0.003	0.101	-0.101	0.211 **	0.096	0.138	0.189 *	0.118	0.073	0.048	0.176 *	0.193 *	0.030	0.457 **	1.000
0.712	0.285	0.004	0.001	0.000	0.001	0.842	0.733	0.734	0.304	0.969	0.214	0.214	0.009	0.238	0.089	0.020	0.149	0.370	0.557	0.030	0.017	0.713	0.000	

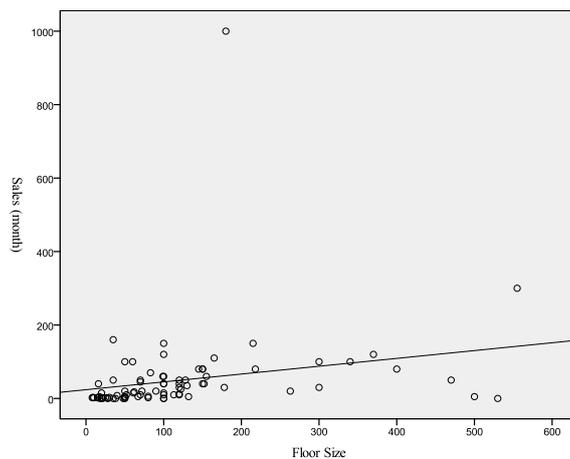


Figure 8 Relationship between a space's floor size and sales

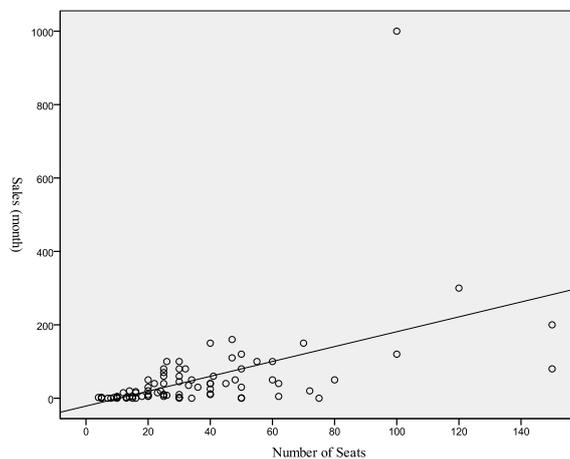


Figure 9 Relationship between number of seats and sales

4.6.2 Space manager's view on current state of space

As shown in Table 11-1,⁴⁹ the larger floor size, the more profit a space generates on a non-consolidated basis (0.254). Similarly, we observed a positive correlation with number of seats (0.346), suggesting that the more seats a space has, the more it tends to generate profit.

The larger the staff size, the greater the tendency to be satisfied with the current state of the space (0.236) and the more that profits on a non-consolidated basis tend to increase (0.164, 5% significance level). This finding may indicate that the more the staff size increases, the more the

⁴⁹ Table 11-1 shows the correlation coefficients with variables thought to have a relationship with the 10 items comprising the space manager's views on the current state of the space. See Table 11-2 for the correlation matrix of all the variables discussed.

profit on a non-consolidated basis increases, and the more the satisfaction level with space operation rises. The inverse also holds, however: the generation of profits could also increase the satisfaction level and increase the staff size. Care in interpretation is therefore required. We did not observe a correlation between space manager's working hours/days and the level of satisfaction with the space's current state or profit on a non-consolidated basis, suggesting that, even if space managers work long hours, there is no direct connection to profits on a non-consolidated basis.

The findings suggested by the correlations with the items related to strategy are as follows. The more a space views other neighboring spaces as competitors, the more profits it tends to generate on a non-consolidated basis (0.188, 5% significance level). The more a space cooperates with other actors, the more new business and services tends to be created through collaboration between users.

We also observed some notable tendency among space management policies. The more the space manager focuses on profitability, the more he/she wants to increase users at the space (0.265) and the more profits are actually generated on a non-consolidated basis (0.397). The more the space manager focuses on community formation, the more the space manager facilitates user interaction (0.480) and the more he/she considers that users hope to interact with him/her (0.396).

The noteworthy findings concerning the correlations with items related to activity are as follows. The more events planned by space managers (-0.163, 5% significance level) increase or the more space managers work as event lecturer (-0.203, 5% significance level), the less profit is generated on a non-consolidated basis. This finding could indicate that events held by space managers are not tied to profit or that space managers see events as a path to profitability when the space business is not generating profits and thus hold them enthusiastically.

When the number of users increases, the space becomes profitable on a non-consolidated basis (0.338). When examining the number of users, however, attention should also be paid to the relationship of this item to other items. The more the number of space users increases, the less space managers tend to consider that users hope to interact with the space manager (-0.236), indicating that space managers consider that, as the number of users increases, interaction between the space manager and users becomes increasingly difficult.⁵⁰ We observed a tendency for space managers to stop wanting to increase the number of users as their number increases (-0.238), suggesting that space managers are trying to set a fixed upper limit on the number of users instead of wanting to increase profits through unrestricted user growth. While user growth is indispensable for increasing

⁵⁰ This finding could also indicate that not seeking to improve interaction results in user growth.

profits, problems arise when user numbers rise, which may be why we observed no strong relationship between number of users and satisfaction with the current state of the space (0.221).

The more the ratio of members increases, the more space managers tend to feel that users hope to interact with the space manager (0.216) or the more they tend to feel that users hope to interact with other users (0.206, 5% significance level). Thus, as the ratio of users who utilize the space frequently increases, space managers feel that there is a greater expectation of interaction between the space manager and users and among users. In other words, this finding may suggest that space managers feel that it is difficult for users to interact with the space manager or with other users when there is an increase in the ratio of users who use the space temporarily compared to the members like drop-in users.

The longer the member usage time, the more new products and services are created through collaboration among users (0.229) and by individual users (0.279). Increasing usage time also tends to increase profits on a non-consolidated basis (0.211).

Among the items related to performance, we found that the higher the sales, the higher the profits on a non-consolidated basis (0.349). Our findings on relationships among the 10 items related to space manager's view on the current state are as follows. There is a positive correlation between the two variables "The space manager facilitates user interaction" and "Users facilitate own interaction" (0.569), suggesting that space managers feel that their work to facilitate interaction in the space is effective in creating interaction among users.

Space manager's facilitation of user interaction is also tied to the creation of new business or services. New business and services are created both by collaboration among users (0.473) and by individual users (0.414).

These trends were also observed from interaction among users. Specifically, the more interaction among users is facilitated, the more new business and services are created by collaboration among users (0.605) or by individual users (0.541), suggesting that space managers feel that interaction among users is tied to the creation of new services and business in the space.

Interaction among users also has a positive correlation with profits on a non-consolidated basis (0.189, 5% significance level). We did not observe a correlation between the degree of space manager's facilitation to increase interaction among users and the degree of profits generated on a non-consolidated basis.⁵¹

⁵¹ There is a significantly positive correlation at the 10% significance level, however, with a coefficient of 0.138.

The more new business and services are created through collaboration among users (0.212) or by individual users (0.249), the more space managers are satisfied with the spaces' current state. These two items also have positive correlations with generating profits on a non-consolidated basis. Specifically, the more new business and services are created through collaboration among users (0.176, 5% significance level) or by individual users (0.193, 5% significance level), the more profits tend to be generated on a non-consolidated basis. When these relationships are considered together, the findings suggest that space managers feel that interaction among users and the creation of new business and services in the space are tied to satisfaction with the current state and to profits.

Table 11-1 Correlations of space manager's view on current state of space

	M	SD	the space manager facilitates user interaction	users facilitate own interaction	the space is used for the purpose of getting work done	users hope to interact with the space manager	users hope to interact with other users	new products and services are created through collaboration	new products and services are created by individual users	want to increase users at the space	satisfied with the space's current state	the space is profitable on a non-consolidated basis
			1.000									
the space manager facilitates user interaction	3.79	1.22										
users facilitate own interaction	3.41	1.20	0.560 **	1.000								
the space is used for the purpose of getting work done	3.72	0.85	-0.072	-0.048	1.000							
users hope to interact with the space manager	3.38	0.92	0.377	0.559		1.000						
users hope to interact with other users	3.51	1.08	0.520 **	0.653 **	-0.022		1.000					
new products and services are created through collaboration	3.43	1.12	0.473 **	0.605 **	0.086	0.480 **		1.000				
new products and services are created by individual users	3.32	1.09	0.414 **	0.541 **	0.108	0.480 **	0.414 **		1.000			
want to increase users at the space	4.43	0.85	0.322	0.195	0.180	0.226 **	0.228 **	0.131	0.200 *	1.000		
satisfied with the space's current state	2.26	1.08	0.892	0.064	0.002	0.119	0.483	0.212 **	0.249 **	-0.246 **	1.000	
the space is profitable on a non-consolidated basis	1.28	1.30	0.089	0.020	0.149	0.370	0.557	0.176 *	0.193 *	0.030	0.457 **	1.000
floor size (m ²)	123.85	148.20	0.178 *	0.096	-0.012	-0.015	0.095	0.168 *	0.203 *	0.049	0.128	0.234 **
number of seats	33.89	24.76	0.029	0.238	0.880	0.858	0.290	0.039	0.012	0.549	0.116	0.002
number of partitioned seats	5.75	10.13	0.081	-0.079	0.005	-0.176 *	-0.088	0.084	0.090	0.042	0.115	0.346 **
specialization (R)	2.55	0.68	0.321	0.331	0.853	0.080	0.278	0.301	0.273	0.606	0.155	0.000
working hours (day)	7.29	3.68	-0.012	-0.141	0.090	-0.250 **	-0.143	-0.018	-0.024	0.016	0.094	0.296 **
working days (week)	4.74	1.76	0.884	0.082	0.270	0.002	0.079	0.828	0.765	0.842	0.249	0.000
space manager's experience (in months)	19.49	12.24	-0.069	-0.003	-0.119	-0.001	-0.010	0.008	0.065	0.075	-0.044	-0.246 **
number of staff	5.57	5.79	0.401	0.968	0.145	0.987	0.904	0.919	0.428	0.361	0.592	0.002
complete with neighboring spaces	1.86	0.97	0.144	0.175	0.088	0.134	0.048	0.054	0.051	0.036	-0.018	0.131
focus on profitability	2.68	1.44	0.077	0.031	0.279	0.100	0.553	0.505	0.533	0.657	0.829	0.108
focus on community formation	4.26	0.95	0.060	0.048	0.060	0.089	-0.026	0.037	0.019	-0.041	-0.065	0.092
cooperate with neighboring spaces	2.53	1.37	0.463	0.560	0.465	0.480	0.746	0.653	0.814	0.614	0.423	0.280
cooperate with distant spaces	2.75	1.48	0.018	0.163	0.018	0.029	-0.027	0.122	0.131	-0.211 **	0.354 **	0.424
cooperate with the local community	2.47	1.30	0.823	0.045	0.821	0.720	0.798	0.134	0.107	0.009	0.000	0.000
cooperate with other companies	3.07	1.49	-0.122	-0.086	0.127	-0.080	0.013	0.021	-0.021	-0.069	0.236 **	0.164 *
cooperate with the local government	2.69	1.50	0.134	0.283	0.120	0.325	0.871	0.801	0.797	0.399	0.009	0.043
cooperate with NPOs	2.44	1.42	0.125	0.032	0.094	0.014	0.004	0.025	0.099	0.225 **	-0.054	0.188 *
cooperate with public institutions	2.24	1.29	0.126	0.691	0.248	0.865	0.859	0.759	0.226	0.005	0.511	0.021
number of events (month)	5.68	6.30	0.138	0.040	0.181 *	0.027	0.097	0.009	-0.047	0.265 **	0.021	0.397 **
number of event types (month)	3.68	3.53	0.089	0.659	0.026	0.742	0.322	0.909	0.563	0.001	0.798	0.000
events are revenue source	3.34	1.37	0.480 **	0.324 **	0.022	0.396 **	0.491 **	0.305 **	0.162 *	0.240 **	0.050	0.001
events help facilitate external interaction	4.05	1.08	0.000	0.000	0.785	0.000	0.000	0.000	0.048	0.000	0.542	0.988
events help facilitate user interaction	3.79	1.19	0.283 **	0.140	0.019	0.047	0.157	0.066	-0.012	0.039	-0.081	-0.075
events are space operation issue	3.94	1.13	0.000	0.084	0.820	0.563	0.093	0.420	0.880	0.637	0.322	0.362
events are planned by the space manager	3.20	1.13	0.336 **	0.246 **	-0.046	0.181 *	0.188 *	0.162 *	0.067	-0.041	0.017	0.002
events are proposed by users	3.13	1.03	0.000	0.002	0.572	0.025	0.020	0.046	0.414	0.618	0.839	0.983
the space manager works as event lecturer	2.40	1.09	0.318 **	0.245 **	-0.016	0.369 **	0.367 **	0.224 **	0.085	0.076	0.101	-0.034
users work as event lecturer	3.18	1.04	0.000	0.002	0.847	0.001	0.000	0.005	0.298	0.353	0.216	0.679
events help increase users	3.33	1.00	0.283 **	0.223 **	0.046	0.161 *	0.247 **	0.353 **	0.315 **	0.067	0.146	0.176 *
events are important	4.26	0.94	0.000	0.006	0.571	0.047	0.002	0.000	0.000	0.414	0.072	0.028
number of users (month)	265.92	612.35	0.262 **	0.172 *	-0.085	0.151	0.227 **	0.165 *	0.087	0.033	0.070	-0.055
number of heavy users (month)	51.17	189.82	0.001	0.034	0.300	0.064	0.005	0.043	0.289	0.696	0.394	0.500
members (%)	45.66	39.91	0.179 *	0.121	0.098	0.115	0.122	0.074	0.095	0.018	0.052	0.030
non-members (%)	53.34	39.91	0.028	0.138	0.230	0.157	0.134	0.363	0.242	0.823	0.449	0.712
usage time by members (day)	4.56	3.02	0.142	0.194 *	-0.086	0.137	0.179 *	0.167 *	0.120	-0.118	0.165 *	0.097
usage time by non-members (day)	3.14	2.05	0.081	0.017	0.291	0.092	0.027	0.039	0.141	0.149	0.042	0.285
sales (month) †	31.42	117.16	0.144	0.151	0.044	0.141	0.094	0.124	0.091	0.083	0.119	0.234 **
			0.076	0.069	0.594	0.083	0.240	0.128	0.262	0.311	0.145	0.094
			0.156	0.139	0.149	0.148	0.118	0.168 *	0.082	0.119	0.113	0.246 **
			0.055	0.109	0.067	0.070	0.147	0.059	0.314	0.144	0.166	0.001
			0.162 *	0.123	-0.063	0.160 *	0.116	0.041	0.001	0.094	-0.073	-0.101
			0.046	0.132	0.308	0.049	0.156	0.619	0.800	0.305	0.860	0.214
			0.418 **	0.331 **	-0.128	0.347 **	0.369 **	0.288 **	0.194 *	0.141	0.322	0.004
			0.000	0.000	0.115	0.000	0.000	0.000	0.017	0.082	0.786	0.964
			0.550 **	0.376 **	-0.077	0.356 **	0.400 **	0.312 **	0.215 **	0.102	0.105	0.012
			0.000	0.000	0.348	0.000	0.000	0.000	0.008	0.210	0.198	0.882
			0.343 **	0.112	0.070	0.102	0.115	0.070	0.082	0.208 **	-0.134	-0.110
			0.000	0.168	0.394	0.210	0.158	0.389	0.521	0.010	0.096	0.178
			0.259 **	0.038	-0.124	0.176 *	0.153	0.020	0.069	0.048	-0.140	-0.168 *
			0.001	0.641	0.069	0.080	0.060	0.802	0.397	0.601	0.085	0.044
			0.037	0.124	0.159	0.076	0.083	0.102	0.141	0.112	0.085	0.043
			0.647	0.128	0.051	0.352	0.307	0.212	0.084	0.166	0.307	0.596
			0.174 *	0.078	-0.085	0.174 *	0.045	0.027	0.102	-0.170 *	-0.014	-0.208 **
			0.032	0.339	0.426	0.032	0.586	0.746	0.213	0.037	0.894	0.012
			0.043	-0.005	-0.009	0.034	-0.017	0.053	0.049	0.079	-0.090	-0.135
			0.597	0.698	0.910	0.879	0.859	0.517	0.552	0.336	0.273	0.098
			0.240 **	0.200 *	-0.006	0.182 *	0.223 **	0.185 **	0.218 **	0.145	0.040	-0.019
			0.003	0.013	0.242	0.025	0.006	0.023	0.007	0.075	0.460	0.813
			0.355 **	0.187 *	0.097	0.210 **	0.255 **	0.202 *	0.171 *	0.232 **	-0.054	-0.053
			0.000	0.021	0.233	0.009	0.002	0.013	0.085	0.002	0.508	0.517
			-0.120	-0.154	0.081	-0.236 **	-0.117	-0.086	-0.111	-0.238 **	0.221 **	0.338 **
			0.142	0.059	0.324	0.003	0.150	0.458	0.175	0.008	0.006	0.000
			-0.029	-0.043	0.105	-0.073	-0.082	0.018	0.049	0.010	0.139	0.268 **
			0.653	0.603	0.198	0.348	0.318	0.827	0.550	0.902	0.088	0.001
			0.165 *	0.116	0.066	0.216 **	0.206 **	0.105	0.202 *	0.177 *	0.137	0.101
			0.042	0.155	0.418	0.008	0.011	0.198	0.013	0.029	0.092	0.214
			-0.165 *	-0.116	-0.066	-0.216 **	-0.206 **	-0.105	-0.202 *	-0.177 *	-0.137	-0.101
			0.042	0.155	0.418	0.008	0.011	0.198	0.013	0.029	0.092	0.214
			0.220 **	0.230 **	0.111	0.191 *	0.251 **	0.229 **	0.279 **	0.182 *	0.072	0.211 **
			0.006	0.004	0.172	0.018	0.002	0.005	0.001	0.025	0.375	0.009
			0.050	0.118	0.151	-0.086	0.031	0.157	0.174 *	-0.055	0.111	0.096
			0.541	0.147	0.063	0.860	0.706	0.054	0.082	0.504	0.172	0.238
			-0.080	-0.185	0.080	-0.270 *	-0.045	0.025	-0.108	-0.335 **	0.267 *	0.346 **
			0.469	0.092	0.470	0.013	0.495	0.824	0.390	0.002	0.014	0.001

Note: N=152, †: N=94. *, p < 0.05, **, p < 0.01. Each upper line contains Pearson product-moment correlation coefficients, and each lower line contains probabilities.

cooperate with neighboring systems	cooperate with other systems	cooperate with the local community	cooperate with other cooperatives	cooperate with the local government	cooperate with NGOs	cooperate with public institutions	number of events (month)	number of event types (month)	events are revenue source	events help facilitate mutual interaction	events help facilitate user interaction	events are space operators/issue	events are planned by the space manager	events are proposed by users	the space manager works as event lecturer	users work as event lecturer	events help increase users	events are important	number of users (month)	number of heavy users (month)	members (%)	non-members (%)	usage time by members (day)	usage time by non-members (day)	sales (month)											
1.000																																				
0.464	**	1.000																																		
0.000																																				
0.259	**	0.506	**	1.000																																
0.001		0.000																																		
0.249	**	0.375	**	0.307	**	1.000																														
0.002		0.000	0.000																																	
0.290	**	0.285	**	0.150	**	0.198	**	1.000																												
0.000		0.000	0.000	0.000																																
0.324	**	0.335	**	0.300	**	0.324	**	0.105	**	1.000																										
0.000		0.000	0.000	0.000	0.000																															
0.188	**	0.355	**	0.150	**	0.140	**	0.423	**	1.000																										
0.020		0.000	0.000	0.000	0.000	0.000																														
-0.037	**	0.182	**	0.021	**	0.224	**	0.175	**	0.110	1.000																									
0.451	**	0.023	**	0.797	**	0.008	0.003	0.033	0.177	0.000																										
0.022	**	0.205	**	0.055	**	0.235	**	0.188	**	0.145	0.122	0.608	**	1.000																						
0.782	**	0.031	**	0.473	**	0.009	0.020	0.074	0.134	0.000																										
0.136	**	0.055	**	0.211	**	0.051	0.072	0.123	0.085	0.188	*	0.147	**	1.000																						
0.095	**	0.497	**	0.009	**	0.703	0.375	0.124	0.297	0.020	0.070																									
0.165	**	0.046	**	0.195	**	0.134	0.307	**	0.123	0.087	0.144	0.098	0.375	**	1.000																					
0.042	**	0.576	**	0.016	**	0.099	0.000	0.133	0.289	0.077	0.238	0.000																								
0.157	**	0.139	**	0.218	**	0.135	0.218	**	0.179	**	0.072	0.099	0.056	0.586	**	0.703	**	1.000																		
0.023	**	0.083	**	0.007	**	0.098	0.007	0.027	0.381	0.224	0.493	0.000	0.000																							
0.024	**	0.020	**	0.599	**	0.024	0.121	0.142	-0.033	0.172	**	0.083	0.422	**	0.437	**	0.519	**	1.000																	
0.788	**	0.063	**	0.399	**	0.065	0.156	0.080	0.083	0.024	0.297	0.000	0.000																							
0.043	**	0.012	**	0.145	**	0.012	0.159	0.073	-0.020	-0.071	-0.188	0.175	**	0.408	**	0.211	**	0.401	**	1.000																
0.005	**	0.697	**	0.042	**	0.380	0.051	0.374	0.305	0.386	0.148	0.032	0.000	0.000	0.000																					
0.061	**	-0.027	**	-0.024	**	0.055	-0.055	-0.002	-0.067	0.232	**	0.298	**	0.138	0.214	**	0.145	0.046	-0.283	**	1.000															
0.456	**	0.740	**	0.768	**	0.500	0.500	0.894	0.409	0.004	0.000	0.090	0.008	0.074	0.278	0.000																				
0.089	**	0.039	**	0.135	**	0.074	0.106	**	0.181	**	0.145	0.023	-0.028	0.172	**	0.187	**	0.233	**	0.171	**	0.420	**	0.093	1.000											
0.274	**	0.632	**	0.048	**	0.362	0.011	0.023	0.075	0.778	0.640	0.034	0.021	0.004	0.035	0.000	0.024																			
-0.024	**	-0.010	**	-0.087	**	-0.012	-0.046	0.023	-0.131	0.230	**	0.204	**	0.125	0.140	0.228	**	0.188	**	-0.192	**	0.224	**	-0.013	1.000											
0.881	**	0.905	**	0.338	**	0.838	0.271	0.780	0.107	0.004	0.012	0.046	0.088	0.002	0.020	0.038	0.000	0.877																		
0.056	**	0.007	**	0.115	**	0.050	0.149	0.111	0.052	0.220	**	0.165	**	0.275	**	0.495	**	0.501	**	0.275	**	0.168	**	0.229	**	0.156	0.124	1.000								
0.461	**	0.815	**	0.117	**	0.715	0.087	0.173	0.669	0.004	0.043	0.003	0.000	0.000	0.001	0.039	0.005	0.025	0.028																	
0.085	**	0.008	**	0.366	**	0.135	0.285	**	0.162	**	0.114	0.212	**	0.217	**	0.335	**	0.250	**	0.462	**	0.514	**	0.287	**	0.076	0.078	0.150	0.438	**	1.000					
0.299	**	0.919	**	0.001	**	0.097	0.000	0.046	0.192	0.008	0.005	0.000	0.000	0.000	0.000	0.000	0.351	0.339	0.063	0.000																
0.045	**	0.191	**	0.041	**	0.208	**	0.108	0.152	0.209	**	0.403	**	0.308	**	-0.169	**	-0.155	**	-0.144	**	-0.090	**	-0.175	**	-0.028	-0.093	-0.081	0.003	0.014	1.000					
0.380	**	0.019	**	0.417	**	0.011	0.183	0.061	0.010	0.000	0.000	0.037	0.093	0.077	0.271	0.031	0.754	0.234	0.318	0.969	0.863															
-0.027	**	-0.022	**	0.001	**	0.122	0.026	0.144	0.087	0.311	**	0.049	-0.053	-0.019	-0.037	0.047	-0.085	0.103	-0.013	0.081	0.129	-0.003	0.659	**	1.000											
0.738	**	0.792	**	0.091	**	0.124	0.660	0.076	0.256	0.000	0.247	0.694	0.016	0.834	0.262	0.300	0.205	0.869	0.320	0.114	0.973	0.000														
-0.084	**	0.029	**	0.012	**	0.090	0.070	0.022	0.112	0.043	0.038	-0.119	0.119	0.043	0.025	0.119	-0.026	0.055	-0.113	0.000	0.035	-0.077	-0.038	1.000												
0.021	**	0.720	**	0.154	**	0.256	0.292	0.791	0.170	0.428	0.039	0.148	0.143	0.439	0.760	0.142	0.496	0.500	0.166	0.999	0.865	0.347	0.845													
0.084	**	-0.029	**	-0.023	**	-0.093	-0.070	-0.022	-0.112	-0.043	-0.038	0.119	-0.119	-0.063	-0.022	-0.119	0.024	-0.025	0.103	0.000	-0.035	0.077	0.028	-1.000	**	1.000										
0.101	**	0.720	**	0.154	**	0.256	0.292	0.791	0.170	0.428	0.039	0.148	0.143	0.439	0.760	0.142	0.494	0.500	0.166	0.999	0.865	0.347	0.845													
0.155	**	0.169	**	0.032	**	0.230	**	0.093	0.118	0.150	0.122	0.036	0.151	0.071	0.106	0.032	0.021	-0.008	-0.004	0.162	**	0.904	**	-0.017	0.373	**	-0.375	**	1.000							
0.056	**	0.037	**	0.890	**	0.009	0.243	0.149	0.066	0.139	0.135	0.046	0.063	0.382	0.193	0.879	0.226	0.793	0.253	0.928	0.947	0.983	0.838	0.000	0.000											
0.109	**	0.008	**	0.039	**	-0.030	-0.043	0.122	0.105	0.208	**	0.041	0.094	0.119	-0.044	0.204	0.004	0.045	0.118	0.183	**	0.041	0.119	-0.216	**	0.216	**	0.391	**	1.000						
0.181	**	0.926	**	0.834	**	0.331	0.718	0.418	0.355	0.135	0.198	0.012	0.413	0.252	0.146	0.438	0.012	0.943	0.673	0.146	0.024	0.562	0.344	0.008	0.008	0.000										
0.148	**	0.172	**	0.058	**	0.246	**	0.211	0.106	0.230	**	0.278	**	-0.394	-0.150	-0.160	-0.283	**	-0.220	**	-0.218	**	-0.199	-0.246	**	-0.216	**	0.095	0.721	**	0.361	0.013	-0.013	0.117	0.002	1.000
0.178	**	0.119	**	0.745	**	0.012	0.024	0.356	0.033	0.010	0.001	0.074	0.174	0.147	0.009	0.044	0.046	0.070	0.024	0.048	0.392	0.000	0.342	0.909	0.909	0.288	0.987									

5. Conclusion

Table 12 summarizes the major findings of this paper,⁵² which has presented the results of a correlation analysis on the operational features of coworking space, divided into six parts. As mentioned, few empirical studies on coworking spaces and coworking have been done. As studies attempting to provide a whole picture of these phenomena are particularly scarce, we convince that our study based on the data from 152 spaces in Japan has some theoretical and practical contributions. Several challenges remain, however, concerning survey design and the way of analyzing.

One of the survey design challenges is to conduct a user survey. Studies such as the GCS and Hanibuchi (2014) have gathered and analyzed data on users. Along with space manager surveys, user surveys are indispensable for gaining a comprehensive understanding of phenomenon on coworking. It would also be beneficial to conduct a panel survey on space operation and compare the results with the GCS findings.

Concerning the way of analyzing data, one problem is that this study consisted only of a correlation analysis: it presented only hypotheses for future empirical studies. A regression analysis is required to investigate whether causality can be found in the relationships presented in this paper.

These challenges need to be overcome to provide a comprehensive understanding of the operation of the coworking space and a way of working called coworking.

⁵² We found no major differences after comparing the results of Uda and Abe (2015a) with the findings of this paper.

Table 12 Major findings of this paper

Major findings	
(1) Facility	<ul style="list-style-type: none"> The more floor size increases, the more the number of seats increases, but the data suggest that the relationship between floor size and number of seats may be no longer linear once floor space exceeds a certain size.
(2) Management organization	<ul style="list-style-type: none"> The more staff size increases, the more space manager's working hours/days decrease. The more the number of users increases, the more staff size increases.
(3) Business Strategy	<ul style="list-style-type: none"> Spaces that cooperate with neighboring spaces also cooperate with distant spaces. Spaces that cooperate with other actors (such as companies, local government, or NPOs) have strong cooperation with all types of organizations. Spaces that focus on profitability view neighboring spaces as competitors.
(4) Activity	<ul style="list-style-type: none"> The more events are proposed by users or the more users work as event lecturer, the higher the number of events. Space managers feel that events are not directly tied to space business profitability but are tied to interaction and community-formation.
(5) Space Users	<ul style="list-style-type: none"> Increasing space manager's working time does not increase the number of users. Increasing event frequency does not increase the ratio of members relative to all users. The more space managers facilitate user interaction, the more the ratio of members increases. Main members are freelancers in their forties. When the number of freelance users increases, the number of corporate employee users decreases (and vice-versa). The diversity of space users' job type is low in each individual space. The more the space manager facilitates interaction or the more the users facilitate own interaction, the more the usage time increases.
(6) Performance	<ul style="list-style-type: none"> The more the number of seats increases, the more sales increase. We did not observe a correlation between space manager's working hours/days and sales. We did not observe a correlation between space manager's experience (in months) and sales. We observed an overall connection between degree of cooperating with other actors or the local community and sales, but the connection is not very strong. The greater the event frequency or the more types of events there are, the higher the sales. Increases in the member sales ratio are not necessarily directly connected to sales increases. Space managers feel that interaction between space managers and users becomes difficult as the number of users increases. Space managers feel that interaction among users and the creation of new business and services in the space are tied to satisfaction with the current state and to business profits. We did not observe a correlation between space manager's work hours/days and profits on a non-consolidated basis. The higher the sales, the higher the profits on a non-consolidated basis.

Acknowledgments: The results in this paper form part of research supported by Grant-in-Aid for Scientific Research (B; JSPS KAKENHI Grant Number 25285110) and Grant-in-Aid for Scientific Research (C; JSPS KAKENHI Grant Numbers 26380450 and 15K03596). We would like to take this opportunity to express our gratitude.

References

- Arimoto, Masaaki, Naoto Matsumoto, Yuji Matsumoto, Nagisa Kidosaki, and Ryusuke Naka (2012). "A Study on Workplace for Coworking (Part 1)," *Summaries of Technical Papers of Annual Meeting*, Architectural Institute of Japan, 331-332 (in Japanese).
- Hanibuchi, Tomoya (2014). *FY 2013 Special Research Report: The Current State and Potential of Collaborative Workspace in Urban Areas*, Nagoya Urban Institute, Nagoya Urban Development Public Corporation (in Japanese).
- Kobayashi, Asami (2011). "The world's Unique Membership Library as Coworking Space for Institutionally-Independent Individuals: The Academyhills Roppongi Library," *Journal of Information Processing and Management*, 54 (9), 545-554 (in Japanese).
- Koizumi, Masanobu, Koichi Ikeda, and Masashige Motoe (2013). "A Report on the Activity in the Space for Personal Fabrication (Part 2): Characteristics of the Facility in the United States and the Netherlands," *Journal of Japan Society for Office Studies*, 5 (1), 66-71 (in Japanese).
- Koizumi, Masanobu, Koichi Ikeda, and Masashige Motoe (2014). "A Report on the Activity in the Space for Personal Fabrication (Part 3): Features and Issues of Shared Fabrication Spaces in Japan," *Journal of Japan Society for Office Studies*, 6 (2), 37-43 (in Japanese).
- Koizumi, Masanobu, Yoshitake Sasai, Koichi Ikeda, and Masashige Motoe (2012). "A Report on the Activity in the Space for Personal-Fabrication," *Journal of Japan Society for Office Studies*, 4 (1), 64-70 (in Japanese).
- Nakamura, Masaaki (2013). "Current Status and Strategies for the Coworking Space Business," *Journal of the faculty of Management (Chukyo University)*, 22 (1 & 2), 59-74 (in Japanese).
- Spinuzzi, Clay (2012). "Working Alone Together: Coworking as Emergent Collaborative Activity," *Journal of Business and Technical Communication*, 26 (4), 399-441.
- Uda, Tadashi (2013). "What is Coworking? A Theoretical Study on the Concept of Coworking," Graduate School of Economics and Business Administration, Hokkaido University, Discussion Paper, Series A, No. 265.
- Uda, Tadashi and Tomokazu Abe (2015a). "Overview of the Correlation Analysis on Coworking Spaces in Japan," *The Annals of Research Center for Economic and Business Networks*, 4, 115-113 (in Japanese).
- Uda, Tadashi and Tomokazu Abe (2015b). "A Descriptive Statistics on Coworking Spaces in Japan," Graduate School of Economics and Business Administration, Hokkaido University, Discussion Paper, Series A, No. 297.
- Watanabe, Shuji, Naoto Matsumoto, Yuji Matsumoto, Nagisa Kidosaki, and Ryusuke Naka (2012). "A Study on Workplace for Coworking (Part 2)," *Summaries of Technical Papers of Annual Meeting*, Architectural Institute of Japan, 333-334 (in Japanese).

Appendix

Questionnaire (Survey) on Actual Conditions of Coworking Space

RCoC; Research Community on Coworking, Hokkaido University



I . Questions regarding facility of your space

Q1 Please write down the floor size and number of seats in your space.		
Floor Size _____ m ²	The number of seat _____	Among these, how many seats are sectioned-off, such as by partitions? _____

II . Questions about business strategy pertaining to your space

Q2 Does the managing entity of your space (a company, for example) conduct other businesses besides managing the said space?
<ol style="list-style-type: none"> 1. Management of this coworking space is its only operation. 2. Its main operation is the management of this coworking space, but it carries out other operations as well. 3. Its main operation is one other than the management of this coworking space.

Q2-1 If you selected answer 2 or 3 for Q2, please write down the type(s) of business(es) conducted by the managing entity (multiple answers are possible).
①IT-related ②creative/design-related ③manufacturing-related ④real estate-related ⑤childcare/women's support-related ⑥building/construction-related ⑦food and beverage-related ⑧government-related ⑨educational institutions ⑩other _____

Q3 Please circle the number you think best applies to the management policies of your space.	completely disagree	somewhat disagree	Neither agree nor disagree	somewhat agree	completely agree
1. Coworking spaces in the neighborhood are business competitors.	1	2	3	4	5
2. Focus on the profitability of the coworking space itself.	1	2	3	4	5
3. Focus on community formation at the coworking space.	1	2	3	4	5
4. Cooperate with coworking spaces in the neighborhood.	1	2	3	4	5
5. Cooperate with coworking spaces outside the neighborhood.	1	2	3	4	5
6. Actively involved in the local community where the coworking space is located.	1	2	3	4	5
7. Cooperate with the other companies.	1	2	3	4	5
8. Cooperate with the local government.	1	2	3	4	5
9. Cooperate with NPOs.	1	2	3	4	5
10. Cooperate with public institutions such as vocational schools, universities, and hospitals.	1	2	3	4	5

Q3-1 If you answered 4 or 5 for 5 to 10 in Q3, please give specific answers as to any cooperation or relations.

Q4 As a coworking space in general, what do you consider to be the competitors? Please circle all that apply.

- ①cafe/casual restaurant ②internet cafe ③rental office/shared office
④home/SOHO ⑤corporate office ⑥incubation facility ⑦video conference system
⑧other _____ ⑨no particular competitors

III Questions regarding your space users

Q5 Who did you expect the main users to be before your space was established? Please select all that apply.

- ①IT-related ②creator/designer-related ③manufacturing-related ④community development-related
⑤childcare/women's support-related ⑥building/construction-related ⑦literary/writer-related
⑧sales/marketing-related ⑨clerical-related ⑩other _____

Q6 Who are your main users? Please select all that apply.

- ①IT-related ②creator/designer-related ③manufacturing-related ④community development-related
⑤childcare/women's support-related ⑥building/construction-related ⑦literary/writer-related
⑧sales/marketing-related ⑨clerical-related ⑩other _____

Q7 Please write down the approximate percentages regarding user attributes of your space (please answer so that the total equals 100%).

students: ____ % employees: ____ % freelancers: ____ % housewives/husbands: ____ %
other: ____ % → please specify _____

Q8 Approximately how many users do you have per month?

Approximately _____ users



Among these, there are about _____ high-frequency users.

Q9 Among your space users, what are the approximate percentages of members and non-members (drop-in users)?

Members _____ % + Non-members _____ % = Total 100%

Q10 What is the average usage time per day by members and non-members (drop-in users)?

Members _____ hours Non-members _____ hours

Q11 Please write down the approximate percentages of age ranges applicable to your space users (please answer so that the total equals 100%).

① Under 20: _____ % ② 20s: _____ % ③ 30s: _____ %

④ 40s: _____ % ⑤ 50s: _____ % ⑥ Over 60: _____ %

Q12 Please indicate the approximate percentage of each gender represented by your space users (please answer so that the total equals 100%).

① Female: _____ %

② male: _____ %

IV Questions regarding sales of your space

Q13 What percentage of your total sales are attributed to food and beverage sales?

Approximately _____ %

Q14 Of your space's sales, approximately what percentages are from members and non-members (drop-in users)?
(Please answer so that the total equals 100%.)

① Members: _____ %

② Non-members: _____ %

Q15 Please provide your approximate monthly sales, if you have no objections to doing so.

Approximately _____ yen

V Questions regarding events of your space

Q16 How many events do you hold per month on average and what types of events are they?

Approximately _____ events Types: _____

Q17 Please circle the number that you think is most applicable regarding events held in your space.	completely disagree	somewhat disagree	neither agree nor disagree	somewhat agree	completely agree
1. Events are an important source of revenue.	1	2	3	4	5
2. Events help facilitate interactions with people outside the space.	1	2	3	4	5
3. Events help facilitate interactions among users within the space.	1	2	3	4	5
4. The quality of events is an important issue in operating a space.	1	2	3	4	5
5. Events are often planned personally by the space manager.	1	2	3	4	5
6. Event plans are often proposed by users.	1	2	3	4	5
7. The space manager often personally plays roles such as event lecturer.	1	2	3	4	5
8. Users often play roles such as event lecturer.	1	2	3	4	5
9. Events help increase the number of users.	1	2	3	4	5
10. Events are important for the space.	1	2	3	4	5

VI Questions about management organization of your space

Q18 Please write down how many people are engaged in the operation of your space.

Full-time (including space manager)	Part-time	User volunteers	interns

Q19 About how many hours does the space manager spend at your space?

Working hours per day: about ____ hours, Working days per week : about ____ days

In comparison to when the above-mentioned space was initially established, the amount of time he/she spends there has

 ①become longer ②not changed ③become shorter

(Please circle the answer that best applies.)

VII Questions regarding current status and future issues of your space

Q20 Please circle the number that you think best applies to your space's current state.	completely disagree	somewhat disagree	neither agree nor disagree	somewhat agree	completely agree
1. The space manager works to facilitate interactions among users.	1	2	3	4	5
2. Users try to interact on their own by exchanging business cards, etc.	1	2	3	4	5
3. Users use the space because they can get work done.	1	2	3	4	5
4. Users use the space because they hope to interact with the space manager.	1	2	3	4	5
5. Users use the space because they hope to interact with other users.	1	2	3	4	5
6. New business and services are created through collaboration between users.	1	2	3	4	5
7. New businesses and services are created by individual users.	1	2	3	4	5
8. I would like to increase users at the space that I operate.	1	2	3	4	5
9. I'm satisfied with the current state of the space that I operate.	1	2	3	4	5
10. The space generates profits on a non-consolidated basis.	1	2	3	4	5

Q21 Please describe any issues your space currently has.

Q22 Please rank three coworking spaces that are strongly connected to yours.

Name of space 1: _____

Name of space 2: _____

Name of space 3: _____

Q23 If you know of any ideal coworking spaces, or spaces which could be a model for your space, please provide that information below.

Name of space: _____

Reason:

VIII Questions regarding space manager's attributes

Q24 Which of the following is your (space manager's) type of job (or specialization)?
①IT-related ②creator/designer-related ③Manufacturing-related ④community development-related
⑤childcare/women's support-related ⑥building/construction-related ⑦literary/writer-related
⑧sales/marketing-related ⑨clerical-related ⑩other _____

Q25 Please indicate your (space manager's) gender and age.
Gender: ①Male ②Female
Age: _____ years old

Q26 How long have you (your space manager) been engaged in the management of your space?
_____ years and _____ months

IX Additional Questions

Q27 Do you consent to your space's name appearing in a list of participants in the study once the results of this study are published?
①Consent to appearing ②Do not consent to appearing

Q28 Do you consent to an interview at a later date? Please answer yes or no.
①Yes ②No

Q29 Open space for correspondence (please write whatever you like here.)

Thank you very much for your cooperation.