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Priorities of Coworking Space Operation Based on Comparison of the Hosts and Users' Perspectives

Jongseok Seo ¹ , Lidziya Lysiankova ², Young-Seok Ock ¹  and Dongphil Chun ^{1,*}

¹ Graduate School of Management of Technology, Pukyong National University, 365, Sinseon-ro, Nam-gu, Busan 48547, Korea; jsseo@pknu.ac.kr (J.S.); ysock@pknu.ac.kr (Y.-S.O.)

² Faculty of Economics, Vilnius University, Universiteto str. 3, Vilnius 01513, Lithuania; lydia.lysenkova@gmail.com

* Correspondence: performance@pknu.ac.kr; Tel.: +82-51-629-5647

Received: 19 July 2017; Accepted: 10 August 2017; Published: 22 August 2017

Abstract: More than 1,180,000 people use several thousand coworking spaces these days, but the running of coworking spaces is a rather fragile business model. Coworking spaces need entrepreneurial sustainability as well. Therefore, this study identifies success factors for sustainable business through analysis of users and hosts' demands and priorities about coworking spaces. To identify the priorities, we conducted a questionnaire survey with 60 hosts and 56 users by using the analytic hierarchy process method. We found that hosts thought community and communication most important, followed by space and interior, service diversity, and price plan, and users considered relationship facilitation the most important, followed by service diversity, price plan, and networking event and party. After discussions with coworking space hosts and users to understand the differences in viewpoints, we combined the results to find the highest priorities. Finally, we identified relationship facilitation, service diversity, and price plan as having the highest priorities for sustainable coworking space operation for both sides. This study has major implications for research into improving management of coworking spaces as it asks users and hosts to select and focus on elements of priority in their decision making for entrepreneurial sustainability and management innovation.

Keywords: coworking; coworking space; coworking space management; entrepreneurial sustainability; management innovation; decision making

1. Introduction

Over the past 30 years, three major changes have occurred in the sphere of arrangements for knowledge work. The first is that home computers and e-mail have created a group of freelancers, who are definitely more flexible than office workers. The second change occurred with the introduction of mobile technology and global teamwork: it made it possible for full-time employees to work anywhere and anytime. Now, a new change is coming: shared spaces now give the benefit of both flexibility and social factors; people can feel free and not lonely without sacrificing any of these factors [1]. Moreover, shared spaces help with users' financial situation. Working in a shared workspace is a way of reducing individual risk: this approach to work arrangement brings flexibility and management innovation, and improves the financial situation of the workers while providing specific resources for sustaining freelancers and self-employed persons in a highly competitive job market [2].

Coworking refers to the practice of working alongside one another in flexible, shared work settings where desks can be rented on a daily, weekly, or monthly basis [2]. Referring to data of the global coworking survey conducted in 2017, people are using 13,800 coworking spaces throughout the world [3]. The new reality is that more and more independent workers are joining this type of workplace instead of a private office, among them are a huge proportion of entrepreneurs [4].

Of course, sometimes, private offices and assigned seating can increase individual productivity such as in deadline work, but an open environment and flexible seating increase creativity and innovation through cross-pollination [5]. Therefore, a space and interior strategy is necessary for users' diversity [6].

In South Korea, this phenomenon of coworking space is definitely up to date. According to the Korea Institute of Startup & Entrepreneurship Development, which has launched an in-person, creative company factual survey report, since 2009, one-person creative companies have increased by 13% every year, and there were 296,137 such companies in 2012 [7]. This leads to the thought that South Korea as a country should focus on the coworking space phenomenon, as it will guarantee entrepreneurial sustainability as well as a reduction in the costs of renting an office space and maintaining it; it will also help start-ups gain more experience, because a coworking space brings people from different spheres together. Productivity can be defined as the ratio of outputs over inputs [8]. A coworking space can increase start-ups' productivity by reducing their inputs. In other words, joining a coworking space is an important way to increase the entrepreneurial sustainability of start-ups. According to the in-depth interview research of Seo et al., Korean users consider this an important benefit [7]. The host of a Korean coworking space plays a leading role [9]. As the aim of the host's activities is to create a unique cooperative atmosphere and build special relationships between the users of a coworking space [10], Korean coworking spaces should pay attention to the host concept, even though this concept has not been investigated adequately in a particular cultural range.

Despite its importance, the running of a coworking space is rather fragile as a business model, with many hosts struggling to keep their spaces going [11] because of the low-margin on monthly services [10]. Therefore, in order to identify the important elements of efficient management, the perspectives of two groups should be considered: those of users and hosts. In some cases, achieving the right balance between support and interference is a difficult judgment for hosts [12]. This problem can be formulated to determine the perspectives of both the users and hosts of coworking spaces. As both users and hosts play a crucial role in the formation of a coworking space and related decision making, it is important to know their opinions on how to make this concept work better for both groups.

This study will compare the two groups based on the criteria of their preferences. This paper is divided into four sections. Section 2 explains the basic concepts and methodology. The results are discussed in Section 3. Section 4 consists of a discussion about the practical implications of the results, the study's limitations, and future research possibilities.

2. Literature Review

2.1. Coworking Space

As mentioned before, a coworking space is a new phenomenon. Therefore, most scholars have different perspectives on its meaning. One opinion is that coworking spaces are shared workplaces used by various professionals of different spheres [13]. Most of them are freelancers and include those who want to rid the loneliness of working alone in their houses and begin communication with specialists from different knowledge industries [13]. Coworking is a special tool for the promotion of a collective, community-based approach.

The concept of labor market knowledge shows the coworking phenomenon to be a "new model of work" in the context of a "collaborative and sharing" economy [14]. It leads to the thought that this new idea points out the importance of social interaction between colleagues (people who work together) for ensuring added value based on lower cost through the sharing of offices and devices. The implications of these circumstances have an influence on the propriety of the social interaction of workers in their professional networks, as well as on the nature of their jobs [1].

In South Korea, the host definitely plays a key role in coworking spaces [7]. The host's activities are aimed at the creation of a special atmosphere of collaboration and relationship building between the users of a coworking space [11]. Furthermore, the host holds investment briefings

or encourages investor relations for users' business promotion. This function is similar to that of an enterprise-development program of a for-profit seed capital incubator [15]. Especially, these management activities lead to up-front investment and lengthy payback periods [12]. This means that social factors play a huge role in coworking spaces and help to ensure entrepreneurial sustainability. It is understood that a favorable working environment is the keystone of the success of any organization, no matter the sphere in which it operates. These conditions have a significant influence on the nature of their jobs, the relevance of social relations across their own professional networks, and—ultimately—their existence as productive workers in the knowledge economy [13].

This concept is a new form of urban social infrastructure that helps to build special connections, collaboration between people, the development of decision-making skills, and the sharing of new ideas and crucial contacts that will be beneficial for furthering the business [11]. It is different from the old-school methods used in working spaces, whether or not they were self-organized. Some variables of common spaces are diverse, such as the short-term letting of desks (on a daily, weekly, or monthly basis), and especially the flexibility, mobility, and constant change in social make-up [11].

This approach is becoming more and more popular among business people. The network of activities in which each coworker engages has become the push for the development of the objective at each coworking site, as a coworking space is a place to get work done—specifically, knowledge or service work that originates outside the site in other intersecting activities [13].

Coworking spaces are a concentration of knowledge production and knowledge distribution, and they provide the chance for the exchange of different concepts between professionals and the creation of collaborations that are particularly important for businesses, especially start-ups that do not have enough resources to operate without any support [11]. Coworking is a joint activity, not a singular one, and it relies on the ability of the participants to understand that coworking rests heavily on how it intersects with other networked activities [10].

To conclude, a coworking space is the perfect place for young start-up entrepreneurs, venture capitalists, and potential public policy interventions in cities as it provides everything that is needed for them [16].

2.2. Empirical Research on Coworking Spaces

Contemporary coworking spaces originated in 2005 in San Francisco. These were places where the “third way” of working was found: a balance between the “standard” work life within a traditional, well-delimited workplace in a community-like environment, and an independent work life as a freelancer, characteristic of freedom and independence, where the worker is based at home in isolation [17].

Nevertheless, it should be mentioned that as the coworking space concept appeared only in 2005, it has developed really fast over the past 11 years and has become a management innovation [11]. There is not a lot of research in the sphere of coworking spaces as it is a brand-new concept. In addition, most of the quality research was based on interviews, which cannot be the only way of exploring a phenomenon.

There are two perspectives on coworking spaces: that of the users and the hosts. The needs of both these sides are completely varied, even though their goal—to be successful—is the same. Different scholars have defined various elements of coworking spaces. Leforestier identified the following co-working space operating elements: community, advice, support, promotion, mentor, and coworker [18]. In addition, Kojo et al. identified service factors for strategy operations through user experiences such as a “Sense of welcome”, “Possibilities for multi-use of the building and spaces”, “Informality and ease”, “Inspiration and facilitation”, and “Constant narrative of spaces” [19]. Seo et al. found important elements of coworking spaces such as “Co-working management”, “Membership management” and “Supporting management” (the research was conducted with 60 hosts of co-working spaces by using the analytic hierarchy process [AHP]) [9]. A comparison of the works of the abovementioned authors is presented in Table 1.

Table 1. Comparison of scholars' works about coworking spaces.

Author	Year	Title	Summary	Target
Leforestier [18]	2009	The coworking space concept	Coworkers' expectations through a survey of 120 coworkers	Users
Kojo et al. [19]	2014	User experience in an academic coworking place	Most important elements of user experience through 101 respondents participating in a survey of students, staff members, researchers, and teachers	Users
Seo et al. [6]	2015	A study of coworking space operation strategy	Most important elements of the operation distinguished through a survey of 60 hosts	Hosts

To conclude, there have been several studies about coworking spaces. Nevertheless, this paper is unique as it brings together the perspectives of the two crucial groups of coworking spaces—users and hosts—without whom such spaces could not exist.

2.3. Analytic Hierarchy Process Method

The AHP was developed and introduced by Saaty. This method has a comprehensive decision-making process with a hierarchical structure that consists of levels and links [20]. The AHP's characteristics are suitable for handling multiple levels and criteria [21]. In order to use AHP, scholars have to identify several qualitative and quantitative criteria. This will be helpful to evaluate the priorities among multiple alternatives [22,23]. The strongpoint of this method is that it is appropriate to transform qualitative information into quantitative information [24–26]. It is based on a person's perceptions identified through a survey [27]. The results of the analysis are provided as a priority ratio by paired comparison [28]. Saaty mentioned that "The AHP is a theory of measurement through pairwise comparisons and relies on the judgements of experts to derive priority scales" [29].

The AHP generally uses a nine-point scale and provides a consistency ratio with relative priority within criteria, elements, and alternatives [20,29,30]. The nine-point scale is subdivided into equally, moderately, strongly, very strongly, and absolutely preferred (with the values of 1, 3, 5, 7, and 9, respectively), as well as intermediate values (2, 4, 6, and 8) [31].

The AHP has been widely applied to evaluate complex and comprehensive impacts during the last few decades [27]. Economic analysis, forecasting, and strategic planning are performed by using AHP [32]. Furthermore, in various industries, AHP has been applied for resource allocation, performance evaluation, business decision making, and priority rating [33–35].

Some papers apply the AHP approach in the fields of entrepreneurship and innovation success factors, innovative capabilities and the intellectual property of firms, and important factors of innovation clusters. Liu and Chin used this method to propose an intellectual property management excellence audit system, and to identify its critical success factors [36]. Chen and Wang revealed the critical operational factors of success for the information service industry using the AHP approach [37]. Sun et al. attempted to understand the driving forces of the innovation cluster by analyzing priorities from the Hsinchu Science Park in Taiwan using the fuzzy AHP method [38].

Nevertheless, no coworking space research has been conducted using AHP, and only Seo et al. focused on the providers' perspective [9]. In order to capture the competitiveness of coworking spaces, both providers and users' perspectives need to be understood together. If the users and providers' specific needs are grasped, coworking spaces can achieve sustainable design and become a source of entrepreneurial sustainability. Few scholars have tried to understand both sides' priorities. Kher et al. proposed a network selection model with two ranking schemes that indicate the providers and users' specific needs [39]. This research emphasized the importance of understanding both sides' ranking results in a network industry. Da Cruz et al. tried to measure the users and providers' priorities using

AHP in a seaport industry [40]. They examined important factors of Iberian seaport competitiveness based on the related stakeholders—that is, liner shipping companies (users) and seaport service providers. They identified seaport facilities and equipment, channel depth, vessel turnaround time, and proximity to import/export area as key factors. Based on the results, the users and providers' priorities regarding key factors were found to be totally different. Vessel turnaround time was the most important factor from the users' view, while seaport facilities and equipment were the best factors in the providers' view.

The AHP is designed to decompose a complex, multi-criteria problem into multiple levels of hierarchy with the top level as the goal or objective, the intermediate levels as the categories and criteria, and the lowest level as the alternatives [38]. It is a subjective methodology that requires experts in the particular fields to act as evaluators who provide their expert knowledge [36]. Decision makers need to decide the priorities by conducting pairwise comparisons between complex criteria [37]. The AHP method can support a reasonable approximation when the policy and decision maker's judgments are applied [41].

We propose to analyze the important factors of success for coworking space operation through the AHP approach by considering both hosts and users' perspectives. Following previous studies, we performed comparative analysis using the AHP method for coworking space operation. The results will reveal discrepancies between the users and providers, and suggest ways for coworking spaces to obtain a competitive edge for sustainable operation.

3. Research Design

For application in coworking space research, two levels of the AHP model have been designed. This model was suggested by Seo et al. [9]; see Figure 1. The elements were collected from advanced papers, such as those listed in Table 1, discussion with experts, and suggestions and verifications by published papers [6,7,9].

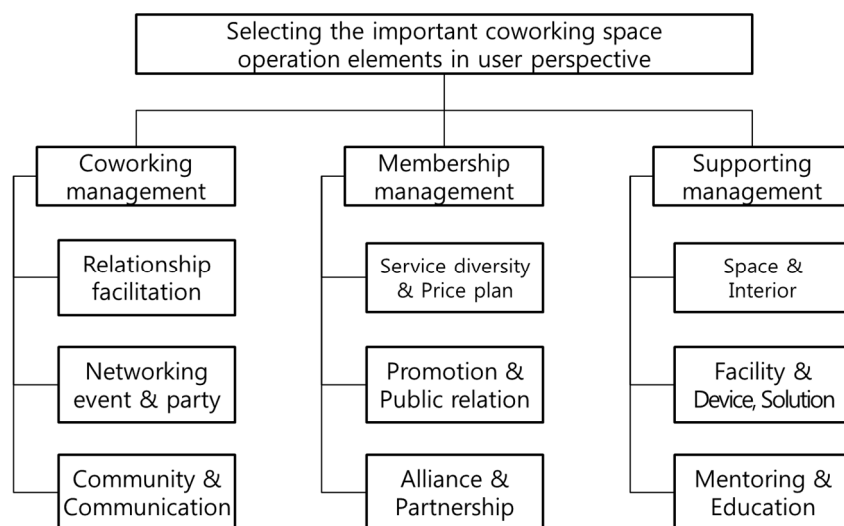


Figure 1. Hierarchy of coworking space operating elements as suggested by Seo et al. [9].

The model uses both users and providers' perspectives [2]. The first level presents key management criteria that include coworking management, membership management, and supporting management. The second level captures sub-attributes of the first level's criterion. Coworking management is related to relationship facilitation, networking event and party, and community and communication. Membership management is a key criterion of service diversity and price plan, promotion and public relations, and alliance and partnership. Space and interior, facility and device solution, and mentoring and education are sub-attributes of supporting management. Figure 1 and

Table 2 summarize the AHP model for coworking spaces. We used the Expert Choice 2000 software to apply AHP in this research.

Table 2. Definitions of an operating system.

Key Management	Sub-Attributes	Descriptions
Coworking management	Relationship facilitation	Activities that encourage members to form relationships and natural collaborations
	Networking event and party	Activities involving events to interact with experts in various fields and exchange information between the members
	Community and communication	Continuous management of online and offline communication channels for effective exchange of information, interaction, and cooperative work
Membership management	Service diversity and price plan	Development and management of strategy and revenue models for customer needs and member acquisition
	Promotion and public relations	Activities to hold investment seminars or public relations events supporting and promoting members' businesses
	Alliance and partnership	Activities that connect and interact with other regions and brands of coworking spaces and other services such as theaters, cafés, and cultural facilities to expand business profits and members' benefits
Supporting management	Space and interior	Activities for improving work efficiency and coworking atmosphere through a variety of space arrangements and interior concepts
	Facility and device solution	Activities maintaining the supporting equipment, facilities, and services for members' convenience in the coworking space
	Mentoring and education	Programs for improving members' business capabilities such as skills, knowledge, and know-how

The AHP survey data were collected from users and hosts separately. The respondents of this research are 60 coworking space hosts in 23 cities of South Korea and 64 users of coworking spaces from main cities such as Seoul, Busan, Daejeon, and Daegu. The survey was conducted over five months; we obtained 49 responses from hosts and 56 from users after verification of the consistency ratio (CR) value ($CR \leq 0.1$). $CR \leq 0.1$ indicates that responses to the AHP questionnaire are satisfactory in terms of consistency.

4. Results

The respondents are users and hosts of South Korean coworking spaces. The answers are valid and have a sense of reality. This means that respondents are experts in this field. This research is valuable as it presents a comparative analysis of both sides. This means that the important factors will be different by perspective. In the first level of hierarchy, the priorities are different between hosts and users. From the hosts' perspective, coworking management is the most important, and membership management has the lowest rank. From the users' perspective, the most important criteria are the same as that of hosts. However, supporting management has the lowest rank. Table 3 shows the difference in weight and priority by perspectives.

Table 3. Results of priority weightings in the first level between hosts and users.

Key Management	Hosts' Priority Weight	Users' Priority Weight
Coworking management	0.347	0.486
Membership management	0.337	0.314
Supporting management	0.316	0.199

In the second level, the different needs regarding the sub-attributes have been checked by the respondent group; see Table 4.

Table 4. Results of priority weightings in the second level between hosts and users.

Sub-Attributes	Hosts' Priority Weight	Users' Priority Weight
Relationship facilitation (1)	0.348	0.472
Networking event and party (2)	0.256	0.288
Community and communication (3)	0.396	0.241
Service diversity and price plan (4)	0.402	0.492
Promotion and public relations (5)	0.357	0.364
Alliance and partnership (6)	0.241	0.144
Space and interior (7)	0.392	0.581
Facility and device solution (8)	0.302	0.203
Mentoring and education (9)	0.306	0.217

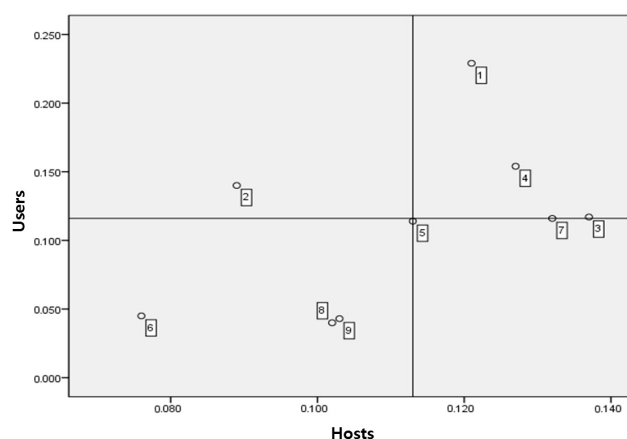
By synthesizing the process, the different priority weights have been defined. The synthesizing results are derived by multiplying the priority weight of key management and the priority weight of the sub-attributes; see Table 5.

Table 5. Results of synthesizing between the hosts and users.

Sub-Attributes	Hosts' Priority Weight	Rank	Users' Priority Weight	Rank
Relationship facilitation (1)	0.121	4	0.229	1
Networking event and party (2)	0.089	8	0.140	3
Community and communication (3)	0.137	1	0.117	4
Service diversity and price plan (4)	0.127	3	0.154	2
Promotion and public relations (5)	0.113	5	0.114	6
Alliance and partnership (6)	0.076	9	0.045	7
Space and interior (7)	0.132	2	0.116	5
Facility and device solution (8)	0.102	7	0.040	9
Mentoring and education (9)	0.103	6	0.043	8

Based on rank, there are many different important factors by perspective. In hosts' responses, community and communication is the most important factor, and alliance and partnership has the lowest rank. However, from the users' perspective, relationship facilitation is the best factor, and facility and device solution is of no particular importance.

Figure 2 presents a summary of the AHP analysis of coworking spaces. The X-axis indicates the hosts' priority weight, and the Y-axis indicates the users' priority weight. We categorized the sub-attributes by quadrant graph based on the mean of each perspective's priority weights. The median is a classification criteria (X-axis: 0.113, Y-axis: 0.116). As a result, relationship facilitation, and service diversity and price plan, are identified as important elements from both hosts and users' perspectives.

**Figure 2.** Hierarchy of coworking space operating elements.

5. Conclusions

A coworking space has two main actors: users and hosts. Users are those who take advantage of all the benefits of a coworking space. Users have needs the hosts try to satisfy. It can be said that users are the so-called customers and the hosts are the sellers of their service. Therefore, it is understood that the success of any coworking space will be destined with the criteria. These criteria are important as they can vary according to the perspectives of the main actors: users and hosts.

Using the AHP model, a survey was conducted with users and hosts. Before the survey, three levels of management were defined: coworking management, membership management, and, finally, supporting management. Each level has a number of criteria that were evaluated. Coworking management is composed of relationship facilitation, networking event and party, and community and communication. Membership management is composed of service diversity and price plan, promotion and public relations, and alliance and partnership. In addition, supporting management is composed of space and interior, facility and device solution, and mentoring and education.

The survey respondents were the hosts and users of coworking spaces in Korea, and 60 coworking hosts and 56 users were interviewed. After this detailed analysis, the priorities of both groups were distinguished. From both hosts and users' perspectives, coworking management is the most significant criteria in key management. Nevertheless, for hosts, membership management has the lowest rank. On the other hand, supporting management has the lowest rank for users.

Then, a more detailed analysis was considered. It was found that from the users' perspective, there are two important elements: facilitation and costs. Facilitation refers to when users want to meet coworkers naturally, and the cost plays a significant role as well. Users desire to get performance at a certain price. This means that they check the service plan of the coworking space. Therefore, hosts should concentrate on these elements for efficiency through investment, development policy, and management procedure. In their turn, hosts consider community and communication, and space and interior, as the most important elements in a coworking space, while users believe these have normal priority. The existence of a community for coworkers and communication tools are believed to be the most important elements for maintaining a successful coworking relationship, but users do not consider them in this way. Space and interior leads to the thought that upgrading the atmosphere in the coworking space is related to marginal utility. Users do not leave one coworking space for another only because of this criterion. Any development of space and interior does not bring about higher satisfaction.

Networking event and party should be regarded separately. Users appreciate this part of the management, but hosts think that it is not very important and does not influence the work. Some hosts want such events and parties to be part of the voluntary culture of users without the hosts' input [7]. In Western countries, events are appreciated a lot as a tool for team building [10]. Young entrepreneurs are especially pleased with the networking activities and seminars for support and caching that hosts organize [12]. Such events are also planned by members themselves, physically or through online conferences [18].

This study has limitations as the results are obtained from analyzing the responses of Korean coworking users and hosts, which cannot be applied to coworking spaces throughout the world. There will be some cultural differences that affect the rankings of the users and the hosts' priorities. This means that in every culture, coworking spaces should be evaluated separately. In addition, we only focused on start-ups as users within the coworking space, and the hosts' role as a control. Future research would have more value if it reflected and improved upon the abovementioned limitations.

Nevertheless, the results can be used for the successful operation of coworking spaces in Korea and other Asian countries due to similar cultural elements. This study suggests guidelines for developing coworking spaces in the Korean or Asian styles that provide both users and hosts with the opportunity to understand each other and arrive at a compromise.

Acknowledgments: This research was supported by the Technology Innovation Program (Graduate School of Management of Technology) funded by the Ministry of Trade, Industry and Energy (N0001613).

Author Contributions: Jongseok Seo mainly contributed to perform this research through set research design, applied AHP method, data collection, and writing paper. Dongphil Chun reviewed research design, method, and calculated priorities. Lidziya Lysiankova participated data collection, and writing literature review section. Young-Seok Ock contributed to set research design, data collection and interpretation of key results. All authors have read and approved this manuscript.

Conflicts of Interest: The authors declare no conflict of interest.

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