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公共施設設計ワークショップ実施例比較による住民の 主体的役割に及ぼす要因に関する研究

Roles of Residents and Factors in Comparison of Public Facilities Design Workshop

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At present, the method of workshop (WS) has become popular and being widely applied. This paper aims to compare WS cases in Japan; to understand the factors of setting plan condition and creating plan by residents. The results are the followings: 1) In WS system, the number of participants, times, attendance rate, and implementation phases have much influence on the roles of residents. In addition, providing information for residents has much influence on WS system. 2) The important factors in WS system building are the number of participants that does not exceed 50 persons, implementation of WS in all the design and plan stage, more than six times of WS in both setting plan condition and creating plan. 3) It is necessary to carefully report the residents' opinion issued at the time of holding WS and the potential restlessness and dissatisfaction.

Keywords: *Workshop, Public Participation, Citizen Participation, Supportive Design Method, Consensus Formation*
ワークショップ, 住民参加, 市民参加, 設計支援手法, 合意形成手法

1. INTRODUCTION

1.1 Background

The first try of applying Workshop (hereinafter referred to as WS) in the process of planning and design began with park and town development, while this method had been applied in single architecture design since the late 1970s. At present, WS has become popular and being widely applied. When local governments select the designers via public offering proposal, the adoption of WS is usually seen, which shows the effectiveness of WS.

When positioning WS in the planning and design business, it is considered to be classified as 'arrangement of design condition', 'instruction of architectural design content to the owner', etc., in the basic design stage. The standard content might be not determined, such as holding date, holding period, frequency, number of participants, presentation materials, and achievement materials and so on. Even more, the rule related to the involvement of residents does not exist.

In the era when it is rare to carry out the design while holding the WS, the participant implemented the cases as special ones via trial and error. Currently, when WS is

becoming widely used, it is expected to explicitly state the standard business content of WS in the planning and design work, and on this basis, an effective and efficient method is also desirable.

1.2 Research Purpose

This paper aims to make a random sampling and horizontal comparison of WS cases that have been implemented in Japan, as well as to find out the trend of role of residents, building types, WS system, WS methods, and provision of information to residents and so on. Then, in the case that the residents have the initiative in setting up planning prerequisites and creating plans, the relationships of other factors (building types, WS system and methods, provision of information to residents) are intended to clarify. The survey and analysis method is shown in Table 1.

1.3 Previous studies

Compared to town development, researches and reports on the actual situation of WS adoption during the stage of single architectural planning and design is less. And among such researches and reports, mostly a single case was selected, other than a horizontal comparison between multiple samples.

Ishigaki et al. classified the purpose and process of 26 cases which adopted WS in architecture design from the relevant

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literature.¹⁾ Dohi et al. summarized the data of building types, design techniques, and adoption stage of 156 cases from journal of architecture and building science and so on. Across the country, the number of WS implemented in architecture design was less than 10 annually during the first half of the 1990s, while it started to exceed 10 during the second half. As the cases are those already published - mainly from journal of architecture and building science - we could assume that the real amount is larger.²⁾ Moreover, Yamamoto et al. classified the designers' intension on WS of 102 cases from journal of architecture and building science.³⁾

In these three researches, information from literature and magazines were organized into data, so no details of WS implementation were mentioned, and there was no horizontal comparison between each projects.

2. SURVEY METHOD

2.1 Survey Subject

The survey subjects are design offices and consultant offices, which play the role of facilitator who takes a leading position in WS.

When selecting subjects, in order to select the WS cases from local cities across the country not just in Tokyo, Nagoya or Osaka, the design offices whose rank of design supervision sale are top 30^[1] and the top 2 consultant offices^[2] are selected. By these two kinds of subjects, we believed that both organizational design offices and atelier design offices which are designing main public facilities could be included.

2.2 Survey Content

The survey was carried out from August to October, 2013. Questionnaires were send to the target offices in advance. After that, a hearing based on these questionnaires, which were related to the office's typical case (or cases) of WS, was held by the author with target office. Some of the questionnaires were send and replied via e-mail, and totally 40 samples had been collected.

Table 1 Survey and Analysis Method

Section	Procedure	Note
Hearing Survey	Previous Researches · Literature Survey ↓ Selection of Implemented Cases with WS ↓ Preselection of Hearing Items ↓ Implement of Preliminary Hearing ↓ Selection of Hearing Items ↓ Classification of Hearing Items · Property of Building · WS system · WS methods · Provision of Information to Residents · Role of Resident ↓ Implement of Hearing ↓	Select 33 items
Data Processing	Simple Tabulation of Hearing Data ↓ Cross Tabulation of Hearing Data ↓ Selection of Analysis Items ↓ Selection of Analysis Method ↓	Hayashi's Quantification Method Type 2
Analysis	Selection of Response Variables ↓ Selection of Explanatory Variables ↓ Analysis of divided patterns ↓ Analysis ↓ Consideration	Consider upper limit value of explanatory variables Divide hearing items into 5 patterns

The questionnaire was composed of 33 items, which could be classified as: (1) property of target building (4 items), (2) WS system (13 items), (3) WS method (7 items), (4) role of residents (2 items), and (5) provision of information to residents (7 items).

2.3 Overview of Survey Samples

The survey result is shown in Table 2.

2.3.1 Property of Target Building

(1) About building types, education buildings account for the majority of samples by 33%, followed by compound cultural buildings (including theater and halls, libraries, community centers, welfare facilities, and so on) by 28%, government buildings by 26%, and independent cinema and halls by 10%.

(2) About building scale, relatively large-scaled buildings account for the majority. The buildings of more than 10,000 m²

Table 2 Result of Survey

Property of Building	Answer Segment				Percentage (Quantity)
① Type	Education 33% (13)	Compound Cultural 28% (11)	Government 26% (10)	Theatre & Hall 10% (4)	Museum 3% (1)
② Scale (m ²)	> 10,000 59% (23)	5,000 - 10,000 28% (11)	< 3,000 8% (3)	3,000 - 5,000 5% (2)	
③ Construction Period	2011 - 2013 39% (15)	2006 - 2010 28% (11)	2001 - 2005 23% (9)	1991 - 2000 10% (4)	
④ Designer Selection	Proposal & Competition 90% (35)	Biding 10% (4)			

WS system	Answer Segment				Percentage (Quantity)
① Organizer	Administrator 92% (36)	Design office 5% (2)	Resident 3% (1)		
② Facilitator	Design office 54% (21)	Consultant 31% (2)	Administrator 15% (6)		
③ Number of Secretariat Member	6 - 10 46% (18)	11 - 15 26% (10)	16 - 20 18% (7)	< 5 8% (3)	> 21 2% (1)
④ Experience on WS	More than half 31% (12)	Some 31% (12)	Half 25% (10)	No one 13% (5)	
⑤ Phase	Basic design 46% (8)	Basic plan/Conception 28% (11)	All 10% (4)	Basic plan & basic design 8% (3)	Basic & implement design 8% (3)
⑥ Participant Selection	Nomination fixed 38% (15)	Public offering fixed 36% (14)	Fixed & free 13% (5)	Free 13% (5)	
⑦ Number of Participant	11 - 30 59% (23)	31 - 50 26% (10)	> 71 10% (4)	51 - 70 3% (1)	< 10 3% (1)
⑧ Reward	No 85% (33)	Yes 15% (6)			
⑨ Attendance Rate	≈ 80% 56% (22)	≈ 100% 28% (11)	≈ 60% 13% (5)	< 50% 3% (1)	
⑩ Frequency of WS (times)	4 - 5 44% (17)	1 - 3 18% (7)	6 - 7 18% (7)	> 10 18% (7)	8 - 10 3% (1)
⑪ Interval	4 weeks 36% (14)	1 - 2 months 26% (10)	2 - 3 weeks 15% (6)	Over 2 months 15% (6)	1 - 2 weeks 8% (3)
⑫ Duration	3 - 6 months 36% (14)	over one year 26% (10)	Under 3 months 20% (8)	6 - 12 months 18% (7)	
⑬ Secretariat Meeting	Beforehand & afterwards 68% (26)	Beforehand 28% (11)	Afterwards 3% (1)	No 3% (1)	

WS Method	Answer Segment				Percentage (Quantity)
① Review	Yes 87% (34)	No 13% (5)			
② Effort for Easy-going Discussion	Only 1st time 51% (20)	Every time 31% (12)	No 18% (7)		
③ Remark Rule	Yes 69% (27)	Time limitation 10% (4)	No 21% (8)		
④ Grouping	Yes 85% (33)	No 15% (6)			
⑤ Number of Group Member	6 - 10 21% (8)	< 5 13% (5)	11 - 15 5% (2)	> 15 15% (6)	Not grouping 15% (6)
⑥ Group Leader	Office 47% (18)	Resident 38% (15)	No grouping 15% (6)		
⑦ Discussion between Groups	Discussion 64%(25)	Report 15%(6)	No 3%(1)	Without summary 3%(1)	Not grouping 15% (6)

Role of Resident	Answer Segment				Percentage (Quantity)
① Leading in Plan Condition Setting	Administrator /Designer 61% (24)	Administrator /Designer & resident 31% (12)	Resident 8% (3)		
② Leading in Creating Draft Plan	Administrator /Designer (one plan) 41% (16)	Administrator /Designer (multi-plan) 36% (14)	Resident 23% (9)		

(Continued)

Provision of Information	Answer Segment			Percentage (Quantity)	
	Explained and Understood	Explained but not sure whether to be understood	Without explanation	Explained but not to be understood	
① Prerequisite Explanation	95% (37)	5% (2)	0% (0)	0% (0)	
② Explanation of Entire Goal	Explained and Understood	Explained but not sure whether to be understood	Q & A	Without explanation	Explained but not to be understood
	82% (32)	15% (6)	3% (1)	0% (0)	0% (0)
③ Explanation of Stage Goal	Explained and Understood	Explained but not sure whether to be understood	Without explanation	Explained but not to be understood	
	87% (34)	13% (5)	0% (0)	0% (0)	
④ Resident Comment Record	Post-it	Proceeding	No records		
	79% (31)	18% (7)	3% (1)		
⑤ Resident Comment Report	List all & Distribute & Explain	List all & without Distribution & Explain (PPT)	Explain important issues	HP/flyer	No reports
	64% (25)	5% (2)	15% (6)	13% (5)	3% (1)
⑥ Impression Card	No	Every time	Sometimes		
	57% (22)	33% (13)	10% (4)		
⑦ Impression Card Report	No reports	List all & Distribute & Explain	List all & without Distribution & Explain (PPT)	Explain important issues	H/flyer
	64% (25)	18% (7)	5% (2)	8% (3)	5% (2)

Note:

- ① Prerequisite Explanation: Describe and explain the Prerequisite, role and jurisdiction of residents; and whether the contents have been understood?
 ② Explanation of Entire Goal: Explain the Entire Goal of WS to residents; and whether the contents have been understood?
 ③ Explanation of Stage Goal: Explain the Stage Goal of WS to residents; and whether the contents have been understood?
 ④ Resident Comment Record: How to record residents' comments about WS?
 ⑤ Resident Comment Report: How to report residents' comments in the next WS?
 ⑥ Impression Card: Whether to use the impression card or not?
 ⑦ Impression Card Report: How to report impression cards in the next WS?

account for 56%, followed by the buildings with a floorage between 5,000 m² and 10,000 m² for 33%.

(3) About construction year, the objective buildings constructed in the 1990s, the first half of the 2000s, the second half of the 2000s, and after 2010 account for 10%, 23%, 28% and 39%, respectively. The amount increased over time.

(4) About the way of selecting designers, proposals and competitions account for the majority of samples by 90%; bids account for 10%.

2.3.2 WS System

(1) About the organizer of WS, governments account for the majority of samples by 92%. Design offices and citizen account for less, 5% and 3%, respectively.

(2) About the facilitators, more than half of them are design offices, which account for 54%, followed by consultant offices and governments, 31% and 15%, respectively.

(3) About the number of secretariat members, 6-10 persons account for 46%, followed by 11-15 persons for 26%, 16-20 persons for 18%. Less than 5 persons or more than 21 persons

account for less, 8% and 2%, respectively. The more people participate in WS with more groups, the more people in secretariat.

(4) About experience, the secretariat in which more than half of the members have experiences about WS account for 31%, followed by several persons for 31%, half of the members for 25%, almost nobody for 13%.

(5) About implementation phases of WS, we consider that there are five phases, namely, 'basic concept phase', 'basic plan phase', 'basic design phase', 'detailed design phase', and 'construction supervision phase'. Since 23% of WS covered multiple phases, we summarize the reality situation into five integrated categories, namely, 'basic concept and basic plan', 'basic plan and basic design', 'basic design', 'basic design and detailed design', and 'all phases'. The results are the following: WS implemented in the 'basic design' phase account for the most by 46%, followed by 'basic concept and basic plan' for 28%, 'all phases' for 10%, 'basic plan and basic design' and 'basic design and detailed design' for 8% and 8%.

Table 3 Property of Building and Role of Residents

Item	Category	Frequency	Plan Condition Setting			Creating of Draft Plan		
			Category Score	Range	Rank	Category Score	Range	Rank
Type	Government	10	-0.4008	5.7074	1	-0.0893	5.3883	1
	Education	13	-0.1421			-0.1053		
	Compound Cultural	12	0.3828			-0.2471		
	Theatre & hall	4	1.3938			0.0213		
	Museum	1	-4.3136			5.1413		
Scale (m ²)	< 3000	3	2.3868	4.6538	2	-2.7639	4.4328	2
	3000 - 5000	3	-2.2670			1.6688		
	5000 - 10000	11	-0.2343			0.5543		
	> 10000	23	0.0964			-0.1223		
Construction Period	1991 – 2000	4	0.4696	0.9248	3	-1.6281	1.9929	3
	2001 – 2005	9	-0.4552			0.3648		
	2006 – 2010	12	-0.1990			0.1071		
	2011 – 2013	15	0.3071			0.1296		
Designer Selection	Biding	5	0.6002	0.6859	4	-1.0331	1.1807	4
	Proposal & Competition	35	-0.0857			0.1476		
Correlation Ratio			0.4957			0.5933		
Average of Sample Score			Administrator/designer: -0.3791 Resident: 0.6319			Administrator/designer: 0.3156 Resident: -1.0872		

When considering ‘basic plan and basic design’ phase as the center, WS implemented before ‘basic plan’ phase, during ‘basic plan and basic design’ phase, and after ‘basic design’ phase account for 28%, 18% and 54%, respectively. These two phases have been becoming the center of the WS.

(6) About the way for selecting participants, 74% (nominated for 38%, public offering for 36%) of the samples’ participants are fixed, 13% of the samples’ participants are free, and 13% of the samples’ participants are mixed of fixed and free.

(7) About the number of participants, 59% of the samples are from 11 to 30, 26% of the samples are from 31 to 50, and 10% of the samples are more than 71.

(8) About the reward for WS, the samples with no reward for participants account for the majority by 85%.

(9) About the attendance rate of WS, the samples with 80% and 100% attendance rate account for 56% and 28%.

(10) About the frequency of WS, the samples in which WS was held for 4-5 times account for the most by 44% followed by 1-3 times by 18%, 6-7 times by 18% and more than 10 (10-143, specifically) times by 18%.

(11) About the interval of WS, the samples with an interval of 4 weeks account for the most by 36%, followed by 1-2 months by 26%, 2-3 weeks by 15%, and 2 months by 15%.

(12) About the period of WS, the samples lasting for 3-6 months account for the most by 36%, followed by more than 1 year by 26%, and the longest period is 5 years.

(13) About the meetings between administrators and designers during interval, samples with one meeting before WS and one meeting after account for the majority by 67%, followed by just one meeting beforehand by 28%.

2.3.3 WS Method

In order to promote the efficient discussion in every WS, various efforts have been done to explore the method for that and related technique about know-how.

(1) No matter free or fixed members, if there are many absentees, it is necessary to make efforts to keep the continuity of discussions. ‘Review of last time’, which is reporting the discussion content of last time at the beginning of WS, has been doing in 87% of the samples with a high rate.

(2) In order to make it easy for people who participate WS for the first time to join the discussion, there would be a short play or performance of participating motivation or self-introduction at the beginning of meeting. In 31% of the samples, activities mentioned above were implemented just for the first time of WS; 18%, every time; 18%, no activities at all. It has been doing in 80% of the samples. Most samples with no activity are special situation, such as utilizers of school.

(3) In order to efficiently take residents’ advices as much as possible within a limited time, efforts have been done. About rules of speaking, such as ‘no question before finishing statements of all members’, samples with ‘rules of speaking’ account for 69%, samples with limited speaking time only account for 10%; rules are implemented in 80% of the samples.

(4) When the participants are numerous, in order to summarize discussion to conclusion efficiently, in 85% of the samples groups were divided.

(5) When participants are divided into groups, in nearly 70% of samples there were less than 10 people in each group, in 46% there were 6-10 people, and in 21% there were less than 5 people. The rate of samples with large group shows a decreasing trend. In 13% of samples there were 11-15 people

in each group, in 5% there were more than 16 people.

(6) When participants are divided into groups, about integrating opinions among groups, in 64% of the samples, the discussions from one group are discussed and exchanged with other groups; in 15% of the samples, the discussions from one group are reported to other groups. 80% of the samples promote the development of other groups, to make up the weakness of dividing groups.

(7) When participants are divided into groups, the group leader in 60% of the samples are secretariat members, in 40% are residents.

2.3.4 Role of Residents

As the most important in WS, we try to find out who led in setting of plan condition and creating of draft plan.

(1) Although in 61% of samples, the setting of plan condition was led by administrators and designers, there are still 31% of samples in which the setting was made with the cooperation of residents, and in 8% of samples the residents set the plan condition independently. That is to say, the residents had been taken part in plan condition setting in almost 40% of WS.

(2) When talking about the creating of draft plan, 41% of samples were carried out as 'adjusting the plan based on opinions on one presented draft', 36% were 'choosing the final plan based on opinions on several presented drafts', and 23% were 'residents creating the draft plan with support from administrators and designers'. There is no samples as 'residents only presenting impressions' or 'residents making draft plan independently'. The samples in which draft plan was mainly made by residents accounted nearly a quarter, while in the rest draft plan was modified with consideration of residents' intension.

Thereby, in the process of plan condition setting or draft plan creating, the degree of residents' independence changed widely as the situation of WS were different.

2.3.5 Provision of information to residents

(1) In all objective WS, introductions and explanations were made, such as prerequisites, appropriate stage of residents' decision and so on. And residents' feedback on these introductions and explanations shows that 'understood' accounted for 95%, while 'not understood' accounted for 5%.

(2) Residents' feedback on the explanations and understanding of the goals of the entire WS shows that 'understood after explanation' accounted for 82%, while 'not understood after explanation' accounted for 15%.

(3) Residents' feedback on the explanations and understanding of the goals of each WS shows that 'understood after explanation' accounted for 87%, while 'not understood after explanation' accounted for 13%.

(4) In 79% of the samples, residents' comments were immediately recorded on post-it at the scene, then filed into data. In 18% of samples proceedings were made. Samples in which there was no record were few, accounted for 3%.

(5) In 64% of the samples, the recorded residents' comments were listed, then distributed and explained at the next time's WS, while samples without distribution accounted for 5%. In nearly 70% of the samples the comments were listed. When there was no listing, in 15% of the samples the important items were reported, and in 13% comments were reported on homepage or flyer. Basically, the comments of residents were respected in all of the WS.

(6) In WS, 'impression card' is a method to express something forgotten, potential discontent and so on. In 57% of the samples there was no impression cards, while impression cards were used and sometimes used in in 33% and 10% of the samples. We can see that the impression card wasn't used so much.

(7) Besides the 57% of samples in which 'impression card' was not adopted, the report methods of impression card are: no report accounted for the majority, 64%; distributing and explaining the comment list accounted for 18%; explaining without distribution accounted for 5%; reporting important items accounted for 8%; and reporting via homepage or flyer accounted for 5%.

3. ANALYSIS

In this section, in order to clarify the effect of residents on setting of plan condition and creating of draft plan, we apply Hayashi's Quantification Method Type 2 to the 4 survey items mentioned in previous sections, namely, property of building, WS system, WS method, provision of information to residents, impact factors and their characteristic are shown respectively by comparing the analysis results. In the analysis, the response variable was set whether the residents took part in the setting of plan condition as well the creating of draft plan or not, while the explanatory variables are the same items.

3.1 Impact of Target Buildings' Property

First of all, in the analysis of setting of plan conditions, we integrate two items which are 'residents set conditions' and 'administrators, designers and residents cooperatively set conditions' to get response variables that are involvements of 'residents set conditions' and 'administrators and designers set conditions'; there are four explanatory variables, which are type, scale, time and selecting designers. The results are shown in Table 3. The correlation ratio small, as its value is 0.4957. It reveals that target buildings' properties had less effect on setting conditions by residents. In addition, the range

Table 4 WS System and Role of Residents

Item	Category	Frequency	Plan Condition Setting			Creating of Draft Plan		
			Category Score	Range	Rank	Category Score	Range	Rank
Organizer	Administrator	37	-0.2450	3.9728	3	-0.3307	4.5820	1
	Design office	2	3.7279			3.9922		
	Resident	1	1.6082			4.2514		
Facilitator	administrator	7	-0.4520	0.6464	13	-0.5294	0.8751	12
	Design office	21	0.1944			0.3457		
	Consultant	12	-0.0766			-0.2962		
Number of Secretariat Member	< 5	3	0.8978	2.1100	6	1.7736	3.4927	3
	6 – 10	19	0.7913			1.0943		
	11 – 15	10	-1.2122			-1.7191		
	> 16	8	-0.7009			-1.1152		
Experience on WS	No one	5	-0.4638	1.4072	10	-0.7559	2.4586	7
	Some	13	0.8717			1.6355		
	Half	10	-0.2587			-0.7606		
	More than half	12	-0.5355			-0.8230		
Phase	Basic & implement design	3	-1.8711	3.4174	4	-1.1610	2.3604	8
	Basic design	19	-0.2423			-0.4456		
	Basic plan & basic design	3	1.4357			1.1994		
	Basic plan/ Conception	11	-0.0250			0.3878		
	All	4	1.5464			1.0215		
Participant Selection	Nomination fixed	16	-0.9061	3.2686	5	-0.8304	1.8560	9
	Public offering fixed	14	-0.4242			0.7495		
	Free	5	2.3625			-0.4669		
	Fixed & free	5	1.7247			1.0256		
Number of Participant	< 10	1	2.4249	4.7855	1	1.5125	4.0579	2
	11 – 30	24	0.1148			0.3575		
	31 – 50	10	0.6623			0.2633		
	> 51	5	-2.3606			-2.5454		
Reward	No	33	-0.1460	0.8345	11	-0.1784	1.0195	11
	Yes	7	0.6885			0.8411		
Attendance Rate	< 50%	1	-3.9153	4.0259	2	-1.3620	2.7233	5
	≈ 60%	5	0.0619			1.3614		
	≈ 80%	22	0.1036			-0.1806		
	≈ 100%	12	0.1106			-0.1227		
Frequency of WS (times)	1 – 3	8	-1.0409	1.8732	8	-1.6477	2.5719	6
	4 – 5	17	-0.1955			0.0566		
	6 – 10	8	0.8323			0.9242		
	> 11	7	0.7132			0.6895		
Interval	1 - 2 weeks	3	-1.2752	2.0192	7	0.3647	1.7003	10
	2 - 3 weeks	6	0.0199			-1.0138		
	4 weeks	14	0.7440			0.6866		
	Over one month	17	-0.3947			-0.2720		
Duration	under 3 months	8	-0.2601	0.7824	12	-0.2686	0.4453	13
	3 - 6 months	15	-0.0148			-0.0450		
	6 - 12 months	7	0.5223			0.1509		
	over one year	10	-0.1353			0.1767		
Secretariat Meeting	When necessary	1	1.4401	1.8686	9	0.4688	3.1359	4
	Afterwards	1	-0.4285			-2.5931		
	Beforehand	11	0.3226			0.5428		
	Before & after	27	-0.1689			-0.1425		
Correlation Ratio			0.9507			0.9229		
Average of Sample Score			Administrator/designer: -0.7271 Resident: 1.2119			Administrator/designer: -0.4910 Resident: 1.6912		

value shows the effect of items on response variables, type and scale have more effect than time and selecting designers. About category score, since positive high value means more effect on response variables, cinema halls have much influence in all the types and square under 3000m² have much influence

in all of the scales.

Secondly, in the analysis on designing plan, response variables are ‘residents design plan’ and ‘modify plan which is launched by administrators and designers based on the suggestions from residents’; explanatory variables are type,

Table 5 WS Methods and Role of Residents

Item	Category	Frequency	Plan Condition Setting			Creating of Draft Plan		
			Category Score	Range	Rank	Category Score	Range	Rank
Review	No	5	-0.5569	0.6364	5	-0.4831	0.5521	5
	Yes	35	0.0796			0.0690		
Effort for Easy-going Discussion	No	6	1.8111	2.6187	1	1.2218	1.9868	2
	Only the first time	22	-0.0534			0.0840		
	Every time	12	-0.8076			-0.7650		
Remark Rule	No	8	-0.3342	1.2473	4	-0.7949	1.7572	3
	Time Limitation	4	-1.0078			-1.3388		
	Yes	28	0.2395			0.4184		
Grouping	No	6	0.2527	0.2973	6	0.4536	0.5336	6
	Yes	34	-0.0446			-0.0800		
Number of Group Member	> 15	7	-0.8839	1.3586	3	-0.0187	0.6192	4
	11 – 14	5	0.4747			-0.5215		
	< 10	28	0.1362			0.0978		
Group Leader	Office	25	0.0879	0.2345	7	0.0017	0.0045	7
	Resident	15	-0.1466			-0.0028		
Discussion Between Groups	No	1	-0.7690	2.2650	2	-0.9494	2.1265	1
	In each group	7	-1.6400			-1.5061		
	Report to other groups	6	-0.6671			-0.7733		
	Discuss among groups	26	0.6251			0.6205		
Correlation ratio			0.6402			0.5813		
Average of Sample Score			Administrator/designer: -0.4896 Resident: 0.8160			Administrator/designer: -0.3093 Resident: 1.0653		

scale, time and selecting designers. The analysis results are shown in Table 3. The correlation ratio is relatively high as 0.5933. It reveals that target buildings' properties have more effect on designing plan by residents than setting conditions. About range value, type and scale have more effect than time and selecting designers; and about category score, compound cultural buildings have much influence in all the types and square under 3000m² have much influence in all the scales.

3.2 Impact of WS System

In analysis on the effect of WS System, firstly, response variables are involvements of 'residents set conditions' and 'administrators and designers set conditions'; explanatory variables are 13 items as shown in Table 4 from 'organizer' to 'secretariat meeting'. From the results of Hayashi's Quantification Method Type 2, we can see that the correlation ratio is very high as 0.9507. It reveals that the WS system has much influence on setting conditions by residents. From range values, we can see that three variables that are number of participants, attendance rate and organizer have much influence on response variables, followed by phases of WS and the way for selecting participants. On the other hand, 'facilitators', 'period' and 'with/without reward' have less effect. In addition, about the category score, since positive high value means more effect on response variables, about the number of participants, 'less than 10 persons' and '31-50 persons' have more effect; more than 51 persons and samples with attendance rate of less than 50% have less effect.

Moreover, about organizer, samples organized by design offices and residents have more influence. Furthermore, we can see that there are much influence on setting conditions by residents in samples with WS which are implemented in 'all the phases' and 'basic plan and basic design phase', participants included free members and WS which are implemented more than 6 times.

Secondly, in the analysis on effect of WS system on creating draft plan, as shown in Table 3, the correlation ratio is very high as 0.9229. The influence of WS system on designing plan by residents is very much. From range value we can see, 4 variables reveal more influence, namely, organizer, the number of participants, the number of secretariat members, and secretariat meeting, followed by attendance rate, times of WS, experiences of WS and implementation phases. On the other hand, 3 variables reveal less influence, namely, period of WS, facilitator, with/without reward. Compared with 'setting conditions' mentioned above, although the variables with more influence are different, the variables with less influence are same. About the category score, since positive high value means more effects on response variables, the following items have more effects: 'organizers are residents and designers', 'quite a few number of participants', 'less than 10 people in secretariat', in 'committee meeting', they are 'before WS' and 'there are questions in the meeting'. In addition, it reveals that the samples with attendance rate of less than 50% have less effects, '6-10 times of WS' and 'WS implemented in all

Table 6 Provision of Information to Residents and Role of Residents

Item	Category	Frequency	Plan Condition Setting			Creating of Draft Plan		
			Category Score	Range	Rank	Category Score	Range	Rank
Prerequisite Explanation	Not understood	2	-0.6429	0.6768	7	0.1304	0.1373	7
	Understood	38	0.0338			-0.0069		
Entire Goal	Q & A	1	0.5813	0.8164	5	0.5636	0.7000	5
	Not understood	6	0.6759			-0.1364		
	Understood	33	-0.1405			0.0077		
Stage Goal	Not understood	5	-1.1256	1.2863	2	0.1321	0.1510	6
	Understood	35	0.1608			-0.0189		
Residents' Comment Record	No records	1	-0.4160	0.7685	6	0.5967	0.7069	4
	Post-it	32	0.1486			-0.1102		
	Proceeding	7	-0.6199			0.4183		
Residents' Comment Report	No reports	1	0.0135	0.8682	4	-0.2467	1.3451	3
	Main issues only	7	-0.1905			-0.4252		
	HP/flyer	5	-0.6508			0.9200		
	Listing & report	2	-0.4309			0.1651		
	Listing & distribution/report	25	0.2174			-0.0683		
Impression Card	No	23	-0.3587	1.2168	3	0.6554	1.8393	2
	Sometimes	4	0.8582			0.0789		
	Every time	13	0.3705			-1.1839		
Impression Card Report	No reports	26	-0.1051	2.3528	1	-0.0925	2.7314	1
	Main issues only	3	0.8702			-0.7513		
	HP/flyer	2	-0.2617			0.9713		
	Listing & report	2	-1.4826			1.9801		
	Listing & distribution/report	7	0.5156			-0.1778		
Correlation ratio			0.7528			0.7426		
Average of Sample Score			Administrator/designer: -0.5758 Resident: 0.9596			Administrator/designer: 0.3951 Resident: -1.3608		

the phases, phase of basic plan and basic design' have more effects.

3.3 Impact of WS methods

In the analysis of impact of WS methods, there are 7 explanatory variables from 'review of last time' to 'discussion between groups', as shown in table 5. From the analysis of plan condition setting, we can see that the correlation ratio is 0.6397, which means the WS methods slightly affected the condition setting of residents. And the range value showed the strength of impact between each item. The adoption of self-introduction and discussion between groups had a strong influence, while the influence of 'group leader' and 'review' was very weak. Category score with a high positive value indicates the strength of influence for the objective variable. Implementation of self-introduction, etc. had a strong influence on residents' setting of plan condition in the cases without implementation, and vice versa. Because in some special cases, the participants didn't need to do self-introduction and showed a strong influence (like in the samples of school) [3]. The analysis of intergroup discussion showed that discussion with other groups after summarizing each group's opinion had a strong influence, as well as group with members not more than 14, and rules of remark.

Secondly, from the analysis of creating of draft plan, we

can see that the correlation ratio is 0.5813. And the range value showed that the intergroup discussion, implementation of self-introduction, and remark rule had a strong influence, while group size, review of last time, grouping, and group leader had a weak influence, which shows a similar trend as the result of condition setting analysis. Category score with a high positive value indicates the strength of influence for the objective variable. 'Discussion with other groups on each group's summary' in item 'discussion between groups', no implementation in item 'self-introduction', as well as adoption in item 'remark rule' showed a strong influence, so as groups with 11-14 members and adoption of review of the last time WS.

3.4 Impact of provision of information to residents

In the analysis of impact of provision of information to residents, there are 7 explanatory variables from 'prerequisites introduction' to 'impression card', as shown in table 6. From the analysis of plan condition setting, we can see that the correlation ratio is 0.7528, which means the provision of information to residents strongly affected the condition setting of residents. And the result of range value showed that the reporting method of impression card had a strong influence, while the other items showed little difference. Category score with a high positive value indicates the strength of

influence for the objective variable. In the item 'reporting method of impression card', 'reporting important issues only' and 'distributing and reporting after listing comments' had a strong influence on residents' setting of plan condition. And 'understood after explaining' from item 'introduction goal of each WS', as well as 'sometimes' and 'every time' from item 'impression card' showed a strong influence.

Secondly, from the analysis of creating of draft plan, we can see that the correlation ratio is 0.7426, which means the provision of information to residents strongly affected the condition setting of residents. And the range value of reporting method of impression card is high, followed by the presence or absence of impressions card, as well as reporting method of residents' comments, which shows a similar trend as the result of condition setting analysis. Category score with a high negative value indicates the strength of influence for the objective variable. 'Reporting important issues only' from item 'reporting method of impression card', 'every time' from item 'presence or absence of impressions card', and 'reporting important issues only' from item 'residents' comments recording' had a strong influence.

3.5 Summary

From above-mentioned analysis, in the setting of plan condition, the influence factors on the role of residents could be concluded as follows:

- (1) WS system had the strongest influence, followed by provision of information to residents and WS methods, and influence of building property is the weakest.
- (2) WS system consists of 'members not more than 50 people', 'attendance rate not too low', 'organized by residents and designers', 'WS implementation at all stages or basic plan and basic design stage', 'participant selection including free participation', and 'more than 6 times'.
- (3) Provision of information to residents consists of 'introduction of WS goals', 'adoption of impressions card to eliminate the potential complaints of residents', and 'reporting of impressions card content'.
- (4) WS methods consists of 'scheme of good communication', 'discussion between the groups in the case of grouping', 'group size of not more than 14 people', and 'setting of remark rules'.
- (5) Building property consists of small scaled buildings such as theater and hall.

Meanwhile, in the creating of draft plan, the influence factors on the role of residents could be concluded as follows:

- (1) WS system had the strongest influence, followed by provision of information to residents, while influence of building property and WS methods is the weakest.

- (2) WS system consists of 'organized by residents and designers', 'not too many participants', 'not too many members in secretariat', 'secretariat meeting beforehand or when problems occur', 'not too low attendance rate', '6-10 times' and 'WS implementation at all stages or basic plan and basic design stage'.

- (3) Provision of information to residents consists of 'adoption of impressions card to eliminate the potential complaints of residents', 'reporting of impressions card content' and 'reporting of residents' comments'.

- (4) Building property consists of small scaled buildings such as complex cultural institutions.

- (5) WS methods consists of 'discussion between the groups in the case of grouping', 'setting of remark rules', and 'group size of 11-14 people'.

4. CONCLUSION

Based on the analysis of samples which have been implemented across the country, the trend on the factors that influence the resident-oriented setting up planning conditions and creating plan, it can be summarized in the following three points.

In this way, firstly, the effect of Workshop can be realized, which is still unclear until now, especially in the perspective of factors about improving the independence of residents; in addition, administrative organizers and designers who implement Workshop could solve problems confidently; lastly, we can expect the further development of Workshop.

- (1) Among many factors in the instruction of WS, the WS system in terms of the number of participants, attendance rate, the number of times, and the implementation phase and so on strongly influence the role of resident' initiative. In addition, the provision of residents' information such as the recording and reporting of residents' opinion also have strong continuous influence on WS system. So in the implementation of WS, cautious construction of framework and provision of information to residents is important in order to achieve the goal of project.

- (2) Generally, whether during setting of plan condition or creating of draft plan, the significant factors of WS framework are participants not more than 50, attendance rate which is not too low, implementation of WS in all the design stage as well as in basic plan and basic design stage, frequency of WS more than six times.

- (3) When it comes to the important factors in the provision of information to residents, besides careful report of the residents' opinion issued at the time of holding WS, it is necessary to

carefully report the potential restlessness and dissatisfaction of residents.

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NOTE

- [1] Projects of 30 companies in main local cities of Japan are selected as the objects from the survey of design supervision sale (*NIKKEI ARCHITECTURE*, September 15th, 2012).
- [2] From the consultant offices entrusted by local governments to make the public facilities plan and design on the homepage of governments, top 2 companies with the largest amount are selected.
- [3] In all of the 40 samples, there are 6 samples without self-introduction, all of them are educational facilities. The participants are students and teachers etc., self-introduction is not necessary because they already know each other.

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