Appendix A: The list of items included in the index

No.	Index item	Coding criteria	Kappa coefficient	Gwet's AC_1
1	Opinions	Expressing the speaker's opinion	0.52	0.68
2	Reasons	Providing reasons for the speaker's opinion	0.64	0.84
3	No respect (other participants)	A negative statement (including denial and abusive language) about other participants and their opinions	0.29	1.00
4	Respect (other participants)	A positive statement (including approval and praise) about other participants and their opinions	0.69	0.88
5	Reference to specific stakeholders	References to specific stakeholders or parties	0.58	0.64
6	No respect (specific stakeholders)	A statement referring to specific stakeholders, parties, or positions that condemn or attack those people	0.22	0.99
7	Respect (specific stakeholders)	A statement referring to specific stakeholders, parties, or positions that show consideration, care, or understanding for those people	0.16	0.97
8	Strategic opinion (self-interested)	A statement intended to cause a result that is favorable to the speaker	0.14	0.99
9	Reference to judgment of politicians	Regarding each judgment of politicians, experts, citizens, and host municipality: -whether a statement refers to it, -whether the reference is positive, -and whether the reference is negative.	0.77	0.97
10	Positive reference to judgment of politicians		0.22	0.99
11	Negative reference to judgment of politicians		0.35	0.98
12	Reference to judgment of experts		0.73	0.96
13	Positive reference to the judgment of experts		0.39	0.99
14	Negative reference to judgment of experts		0.55	0.98
15	Reference to judgment of citizens		0.53	0.72
16	Positive reference to judgment of citizens		0.37	0.94
17	Negative reference to judgment of citizens		0.37	0.94
18	Reference to judgment of host municipality		0.53	0.99
19	Positive reference to judgment of host municipality		0.40	1.00
20	Negative reference to judgment of host municipality		0.28	1.00
21	Questions	A statement that presents a question or includes a question	0.63	0.91
22	Alternatives & solutions	A statement that takes a question or idea presented by another participant and offers a different or further developmental idea	0.22	0.97
23	Collecting opinion	A statement that moves the discussion toward a conclusion	0.00	1.00
24	Speaker's experience	A statement that includes the participant's own experiences relevant to the topic	0.57	0.99

25	Experience of others	A statement that includes the experiences of others relevant to the topic	0.42	1.00
26	In other people's shoes	A statement that puts one in another's shoes	0.57	1.00
27	Emotion	A statement that includes the speaker's feelings	0.69	0.99
28	Reference to pros & cons of NPPs and their restart	Whether a statement refers to each of the three topics	0.56	0.70
29	Reference to local agreement		0.50	0.51
30	Reference to the deliberation event		0.58	0.82

Note: For a detailed explanation of the Kappa coefficient and Gwet's AC_1, see the following references:

Pinto, J., Paneth, N., Kazam, E., Kairam, R., Wallenstein, S., Rose, W., Rosenfeld, D., Schonfeld, S., Stein, I., & Witomski, T. (1988). Interobserver variability in neonatal cranial ultrasonography. *Paediatric and Perinatal Epidemiology, 2*(1), 43–58. DOI: https://doi.org/10.1111/j.1365-3016.1988.tb00179.x.

Wongpakaran, N., Wongpakaran, T., Wedding, D., & Gwet, K. L. (2013). A comparison of Cohen's Kappa and Gwet's AC1 when calculating inter-rater reliability coefficients: A study conducted with personality disorder samples. *BMC Medical Research Methodology*, *13*(1), 1–7. DOI: https://doi.org/10.1186/1471-2288-13-61.

Appendix B: Detailed coding criteria for ‘Opinions,’ ‘Reasons’ and ‘Personal experiences’

Opinions	
1	Expressing the speaker’s opinion ・ Speaker’s thoughts on the topic (nuclear power plant restart and decision-making) and derivative topics. ・ Statements that reflect the speaker’s intention, position, viewpoint, values, etc.
0	Cases such below are not considered ‘Opinions’: ・ Aiduchi-like statements (back-channeling) with no clear affirmative/negative ・ A simple question ・ Mere provision of information ・ An opinion about the deliberation event itself ・ An opinion about how to proceed the discussion ・ A statement that asks others to confirm the intent of the statement
Reasons	
1	Providing reasons for a speaker’s opinion ・ Statements that justify or defend a speaker’s opinion. ・ Even if there are no words that clearly indicate the reason such as “because”, a reason for the idea is stated
0	Cases such below are not considered ‘Reasons’: ・ When there is an opinion, but no reason to support it ・ A reason for asking a question ・ A reason for participating in the deliberation event ・ A condition such as "If it is A, then it is B" or "If it is not A, then it is not B"
Speaker’s experiences (Personal experiences)	
1	A statement that includes the participant’s own experiences relevant to the topic ・ Limited to direct, self-involved type experiences
0	Cases such below are not considered ‘Personal experiences’: ・ Experiences of others ・ Hearing from others ・ Experiences related to participation in this deliberation event

Appendix C: Result of factor analysis

Factor loadings using the maximum likelihood method with cluster rotation

	Items	Factors F1	F2	F3	Communality
6	Judgment of power companies	**.73**	.02	.09	.57
2*	Judgment of areas indirectly damaged in case of an accident	**.67**	-.29	-.24	.53
9	Judgment of experts	**.63**	.11	.12	.27
10*	Judgment of ordinary citizens	**.56**	-.07	-.01	.28
11	Trust in those who promoted NPPs	**.51**	.10	.13	.51
8	Judgment of local politicians	**.34**	**.30**	-.01	.37
1	Judgment of areas directly damaged in case of an accident	-.10	**.81**	**-.32**	.54
4	Judgment of the host municipality	.13	**.68**	.09	.61
3	Judgment of areas industrially and financially damaged in case of an accident	.10	**.63**	.18	.59
5	Judgment of areas consuming electricity	-.19	-.09	**.76**	.41
7	Judgment of the Japanese government	.25	.05	**.38**	.29
Inter-factor correlations					
F1	Conventional decision-makers	−	.38	.22	
F2	Narrow localism		−	.35	
F3	National interests			−	

n = 1,940, KMO = 0.78.

Note: * Indicates items that were processed reversely. Loadings over 0.3 are bolded.

The result is drawn from **Tatsumi, T.,** & **Nakazawa, T.** (2021). Public attitudes towards local agreement over the restart of nuclear power plants: A questionnaire survey on the case of Hamaoka, *Transactions of the Atomic Energy Society of Japan, 20*(2), 50–61. DOI: https://doi.org/10.3327/taesj.J20.006.

Appendix D: Subscale scores of pre- and post-discussion

Subscale scores (pre- and post-discussion) and reliability for each group

		Group																Total		Reliability	
		G1		G2		G3		G4		G5		G6		G7		G8				alpha	ω_{total}
	n	8		6		8		8		8		9		9		9		65			
SS-I	**pre**	-1.3	(0.7)	-0.9	(0.8)	-1.1	(0.7)	-0.7	(0.5)	-0.5	(0.8)	-1.0	(0.6)	-0.3	(0.8)	-0.9	(0.5)	-0.8	(0.7)	0.68	0.70
	post	-1.3	(1.0)	-0.8	(0.9)	-1.2	(0.7)	-0.9	(1.0)	-0.4	(0.9)	-1.1	(1.2)	-0.5	(1.3)	-1.1	(1.1)	-0.9	(1.1)	0.52	0.56
SS-II	**pre**	-0.8	(1.5)	-0.2	(0.8)	-1.0	(1.3)	0.0	(0.9)	0.3	(0.9)	-0.3	(1.2)	0.1	(0.7)	-0.4	(1.2)	-0.3	(1.1)	0.67	0.71
	post	0.7	(0.6)	0.8	(0.4)	-0.4	(0.6)	0.5	(0.5)	0.5	(0.5)	0.4	(0.4)	1.1	(0.7)	0.2	(0.6)	0.5	(0.6)	0.70	0.74
SS-III	**pre**	-0.7	(0.9)	-0.1	(1.1)	-0.1	(0.9)	0.8	(1.3)	0.7	(0.7)	-0.3	(1.2)	0.4	(1.4)	-0.5	(0.8)	0.0	(1.1)	0.42	0.42
	post	0.4	(1.3)	0.9	(0.7)	-0.1	(1.0)	0.1	(0.9)	-0.1	(1.0)	0.4	(1.3)	1.5	(0.7)	-0.1	(1.1)	0.4	(1.9)	0.45	0.45

Note: Mean subscale scores of the participants. Standard deviations are shown in parentheses.
The reliability of the subscale scores ranged from Cronbach's α=0.42 to 0.70 and ω_{total} =0.42 to 0.74, with lower values for subscale III, which had fewer items comprising the subscale.

This table displays the mean scores on the pre- and post-discussion subscales for the entire group and each group. Overall, SS-I exhibited a negative mean score of -0.8 before the discussion and a mean score of -0.9 following the discussion, with a standard deviation of 0.4. In the SS-II, the mean score before the discussion was -0.3, and after the discussion, it was 0.5, indicating a shift from a slightly negative attitude to a slightly positive attitude. Before the discussion, the SS-III had a mean score of 0.0; the discussion shifted slightly in a positive direction to 0.4 after the discussion.

Appendix E: Detailed results of multiple regression analysis

SS-I Model 1

	Estimate	Std. Error	z value	Pr(>|z|)	Pr(sign)	VIF
Intercept	0.41	0.04	10.56	0.00	**	
# of statements	0.04	0.05	0.90	0.37	n.s.	1.43
# of statements in group	0.12	0.09	1.31	0.20	n.s.	5.21
DQI (Opinions)	-0.03	0.05	-0.54	0.59	n.s.	1.57
DQI (Reasons)	-0.06	0.08	-0.67	0.51	n.s.	4.48
DQI (Personal experiences)	0.16	0.08	2.08	0.04	*	3.87
Sample Size					63	
AIC					38.47	
R^2					0.12	

** p < 0.01, * p < 0.05, † p < 0.10, α = 0.05, Power(1-β) = 0.55

SS-I Model 2

	Estimate	Std. Error	z value	Pr(>|z|)	Pr(sign)	VIF
Intercept	0.40	0.04	10.94	0.00	**	
# of statements	0.00	0.05	0.07	0.95	n.s.	1.60
# of statements in group	0.11	0.09	1.31	0.20	n.s.	5.38
DQI (Opinions)	-0.04	0.05	-0.95	0.35	n.s.	1.58
DQI (Reasons)	-0.13	0.08	-1.56	0.12	n.s.	4.93
DQI (Personal experiences)	0.24	0.08	2.89	0.01	**	5.10
Age	-0.06	0.04	-1.51	0.14	n.s.	1.32
Education	0.02	0.04	0.45	0.66	n.s.	1.17
Gender (female=1)	-0.12	0.05	-2.56	0.01	*	1.62
Sample Size					62	
AIC					32.23	
R^2					0.24	

** p < 0.01, * p < 0.05, † p < 0.10, α = 0.05, Power(1-β) = 0.86

SS-I Model 3

	Estimate	Std. Error	z value	Pr(>|z|)	Pr(sign)	VIF
Intercept	0.40	0.04	10.90	0.00	**	
# of statements	0.00	0.05	-0.08	0.93	n.s.	1.65
# of statements in group	0.10	0.09	1.16	0.25	n.s.	5.44
DQI (Opinions)	-0.03	0.05	-0.65	0.52	n.s.	1.64
DQI (Reasons)	-0.15	0.09	-1.69	0.10	†	5.25
DQI (Personal experiences)	0.25	0.09	2.86	0.01	**	5.33
Age	-0.06	0.04	-1.32	0.19	n.s.	1.35
Education	0.02	0.04	0.53	0.60	n.s.	1.18
Gender (female=1)	-0.13	0.05	-2.74	0.01	**	1.68
Area (UPZ=1)	-0.04	0.05	-0.82	0.41	n.s.	1.68
Area (west=1)	0.00	0.05	-0.08	0.93	n.s.	1.68
Area (east=1)	0.04	0.05	0.72	0.47	n.s.	1.79
Sample Size					62	
AIC					35.10	
R^2					0.28	

** p < 0.01, * p < 0.05, † p < 0.10, α = 0.05, Power(1-β) = 0.88

SS-II Model 1

	Estimate	Std. Error	z value	Pr(>|z|)	Pr(sign)	VIF
Intercept	0.69	0.09	7.84	0.00	**	
# of statements	-0.05	0.10	-0.50	0.62	n.s.	1.44
# of statements in group	0.01	0.20	0.07	0.94	n.s.	5.43
DQI (Opinions)	0.03	0.11	0.24	0.81	n.s.	1.55
DQI (Reasons)	0.02	0.19	0.12	0.90	n.s.	4.55
DQI (Personal experiences)	-0.20	0.17	-1.17	0.25	n.s.	3.91
Sample Size					64	
AIC					143.61	
R^2					0.06	

** p < 0.01, * p < 0.05, † p < 0.10, α = 0.05, Power(1-β) = 0.27

SS-II Model 2

	Estimate	Std. Error	z value	Pr(>|z|)	Pr(sign)	VIF
Intercept	0.66	0.09	7.62	0.00	**	
# of statements	-0.04	0.11	-0.39	0.70	n.s.	1.61
# of statements in group	-0.07	0.20	-0.36	0.72	n.s.	5.60
DQI (Opinions)	0.03	0.11	0.24	0.81	n.s.	1.56
DQI (Reasons)	-0.04	0.19	-0.22	0.83	n.s.	4.91
DQI (Personal experiences)	-0.25	0.20	-1.28	0.21	n.s.	5.07
Age	-0.05	0.10	-0.56	0.58	n.s.	1.31
Education	-0.05	0.09	-0.56	0.58	n.s.	1.16
Gender (female=1)	-0.02	0.11	-0.21	0.84	n.s.	1.60
Sample Size					63	
AIC					141.12	
R^2					0.11	

** p < 0.01, * p < 0.05, † p < 0.10, α = 0.05, Power(1-β) = 0.40

SS-II Model 3

	Estimate	Std. Error	z value	Pr(>|z|)	Pr(sign)	VIF
Intercept	0.65	0.09	7.51	0.00	**	
# of statements	-0.05	0.11	-0.44	0.66	n.s.	1.66
# of statements in group	-0.10	0.21	-0.47	0.64	n.s.	5.66
DQI (Opinions)	0.05	0.11	0.45	0.66	n.s.	1.61
DQI (Reasons)	-0.09	0.20	-0.44	0.66	n.s.	5.16
DQI (Personal experiences)	-0.23	0.20	-1.11	0.27	n.s.	5.29
Age	-0.04	0.10	-0.38	0.71	n.s.	1.35
Education	-0.04	0.09	-0.46	0.65	n.s.	1.18
Gender (female=1)	-0.04	0.11	-0.35	0.72	n.s.	1.65
Area (UPZ=1)	-0.02	0.11	-0.19	0.85	n.s.	1.68
Area (west=1)	0.07	0.11	0.66	0.51	n.s.	1.68
Area (east=1)	0.11	0.12	0.98	0.33	n.s.	1.79
Sample Size					63	
AIC					144.85	
R^2					0.14	

** p < 0.01, * p < 0.05, † p < 0.10, α = 0.05, Power(1-β) = 0.44

SS-III Model 1

	Estimate	Std. Error	z value	Pr(>|z|)	Pr(sign)	VIF
Intercept	0.68	0.09	7.63	0.00	**	
# of statements	-0.08	0.11	-0.73	0.47	n.s.	1.48
# of statements in group	-0.32	0.21	-1.53	0.13	n.s.	5.55
DQI (Opinions)	-0.01	0.11	-0.12	0.90	n.s.	1.56
DQI (Reasons)	-0.12	0.19	-0.61	0.55	n.s.	4.87
DQI (Personal experiences)	-0.37	0.18	-2.10	0.04	*	3.91
Sample Size					63	
AIC					142.46	
R^2					0.13	

** p < 0.01, * p < 0.05, † p < 0.10, α = 0.05, Power(1-β) = 0.60

SS-III Model 2

	Estimate	Std. Error	z value	Pr(>|z|)	Pr(sign)	VIF
Intercept	0.66	0.09	7.35	0.00	**	
# of statements	-0.08	0.11	-0.73	0.47	n.s.	1.66
# of statements in group	-0.34	0.22	-1.55	0.13	n.s.	5.74
DQI (Opinions)	-0.01	0.11	-0.05	0.96	n.s.	1.57
DQI (Reasons)	-0.12	0.21	-0.57	0.57	n.s.	5.26
DQI (Personal experiences)	-0.41	0.21	-1.99	0.05	†	5.06
Age	0.08	0.10	0.81	0.42	n.s.	1.33
Education	-0.04	0.10	-0.37	0.71	n.s.	1.15
Gender (female=1)	-0.04	0.11	-0.38	0.71	n.s.	1.58
Sample Size					62	
AIC					143.94	
R^2					0.17	

** p < 0.01, * p < 0.05, † p < 0.10, α = 0.05, Power(1-β) = 0.64

SS-III Model 3

	Estimate	Std. Error	z value	Pr(>|z|)	Pr(sign)	VIF
Intercept	0.66	0.09	7.17	0.00	**	
# of statements	-0.08	0.12	-0.65	0.52	n.s.	1.71
# of statements in group	-0.33	0.22	-1.48	0.15	n.s.	5.76
DQI (Opinions)	-0.02	0.12	-0.19	0.85	n.s.	1.63
DQI (Reasons)	-0.12	0.22	-0.55	0.58	n.s.	5.55
DQI (Personal experiences)	-0.40	0.22	-1.83	0.07	†	5.32
Age	0.07	0.11	0.65	0.52	n.s.	1.38
Education	-0.04	0.10	-0.40	0.69	n.s.	1.16
Gender (female=1)	-0.04	0.12	-0.31	0.76	n.s.	1.63
Area (UPZ=1)	0.03	0.12	0.22	0.82	n.s.	1.68
Area (west=1)	0.01	0.12	0.10	0.92	n.s.	1.68
Area (east=1)	-0.06	0.12	-0.46	0.65	n.s.	1.76
Sample Size					62	
AIC					149.23	
R^2					0.18	

** p < 0.01, * p < 0.05, † p < 0.10, α = 0.05, Power(1-β) = 0.59

Appendix F: Results of multiple regression analysis with individual DQI scores

SS-I

	Estimate	Std. Error	z value	Pr(>|z|)	Pr(sign)	VIF
Intercept	0.40	0.04	10.36	0.00	**	
# of statements	0.00	0.05	0.05	0.96	n.s.	1.68
# of statements in group	0.07	0.05	1.40	0.17	n.s.	1.57
DQI (Opinions)	0.02	0.05	0.44	0.66	n.s.	1.46
DQI (Reasons)	0.02	0.06	0.33	0.74	n.s.	1.99
DQI (Personal experiences)	0.03	0.05	0.75	0.46	n.s.	1.34
Age	0.00	0.05	0.07	0.95	n.s.	1.46
Education	0.06	0.04	1.32	0.19	n.s.	1.35
Gender(female=1)	-0.07	0.04	-1.50	0.14	n.s.	1.26
Area (UPZ=1)	-0.03	0.05	-0.66	0.51	n.s.	1.73
Area (west=1)	-0.03	0.05	-0.68	0.50	n.s.	1.70
Area (east=1)	0.02	0.05	0.35	0.73	n.s.	1.82
Sample Size					62	
AIC					41.17	
R^2					0.20	

** p < 0.01, * p < 0.05, † p < 0.10, α = 0.05, Power(1-β) = 0.66

SS-II

	Estimate	Std. Error	z value	Pr(>|z|)	Pr(sign)	VIF
Intercept	0.65	0.10	6.75	0.00	**	
# of statements	-0.13	0.12	-1.04	0.30	n.s.	1.69
# of statements in group	0.09	0.12	0.73	0.47	n.s.	1.66
DQI (Opinions)	-0.02	0.11	-0.19	0.85	n.s.	1.45
DQI (Reasons)	0.06	0.14	0.46	0.65	n.s.	2.03
DQI (Personal experiences)	-0.18	0.12	-1.54	0.13	n.s.	1.32
Age	0.08	0.11	0.71	0.48	n.s.	1.34
Education	-0.04	0.10	-0.43	0.67	n.s.	1.18
Gender(female=1)	-0.11	0.11	-1.03	0.31	n.s.	1.28
Area (UPZ=1)	0.02	0.13	0.19	0.85	n.s.	1.74
Area (west=1)	0.04	0.12	0.30	0.77	n.s.	1.69
Area (east=1)	0.00	0.13	0.01	0.99	n.s.	1.82
Sample Size					62	
AIC					154.47	
R^2					0.11	

** p < 0.01, * p < 0.05, † p < 0.10, α = 0.05, Power(1-β) = 0.33

SS-III

	Estimate	Std. Error	z value	Pr(>|z|)	Pr(sign)	VIF
Intercept	0.66	0.09	7.51	0.00	**	
# of statements	-0.06	0.11	-0.53	0.60	n.s.	1.67
# of statements in group	0.14	0.11	1.25	0.22	n.s.	1.62
DQI (Opinions)	-0.05	0.10	-0.46	0.65	n.s.	1.46
DQI (Reasons)	-0.02	0.13	-0.12	0.91	n.s.	2.02
DQI (Personal experiences)	0.11	0.11	1.07	0.29	n.s.	1.35
Age	-0.08	0.10	-0.80	0.43	n.s.	1.34
Education	-0.04	0.10	-0.38	0.71	n.s.	1.19
Gender(female=1)	-0.09	0.10	-0.88	0.38	n.s.	1.27
Area (UPZ=1)	-0.03	0.12	-0.27	0.79	n.s.	1.75
Area (west=1)	0.07	0.11	0.61	0.55	n.s.	1.70
Area (east=1)	0.09	0.12	0.73	0.47	n.s.	1.86
Sample Size					63	
AIC					145.72	
R^2					0.13	

** p < 0.01, * p < 0.05, † p < 0.10, α = 0.05, Power(1-β) = 0.41