Supplementary Information

Enhancement of handshake attraction through tactile, visual, and auditory multimodal stimulation

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Table S1 Score of sensory evaluation.

(a) Attraction

ID	gender	S^T	F^T	A^T	S^{TV}	F^{TV}	A^{TV}	S^{TA}	F^{TA}	A^{TA}	S^{TVA}	F^{TVA}	A^{TVA}
1	woman	0.1	4.7	0.1	3.1	9	0	0.2	8.8	0.1	5.7	8	0.3
2	man	5.9	7.1	0	10	10	0	9.2	6.5	0	10	8.9	0
3	man	5.4	1.3	1.5	3.5	10	0	5.7	8	0.5	8	10	2.3
4	man	2.6	4.5	0	8.9	6.2	1.9	2.6	1	0	10	8	2.4
5	man	5.1	0	0	8.8	6.7	1.1	4.5	2.7	0	6.8	5.3	3.1
6	woman	8.4	7.6	2	9	6.8	1	8	7.5	0.6	9	6.5	2
7	man	4.7	5.7	0	7.3	6	0	6	6	0	6.2	6.2	0
8	man	6.2	3	0	5.9	7.3	2.9	4.8	4.8	3	9.2	6.8	3.7
9	woman	0	5.5	0	7.2	6.6	0	5.2	6.5	0.7	6.6	7.6	0
10	man	0.6	0.6	0	1.1	0.4	0	0.3	0.3	0	5	0.8	0
11	man	0	0	0	0	2.6	0	0	0	0	7.5	6.2	0
12	woman	4.8	6.3	0.9	6.4	3.7	1.8	6.4	6.4	1.8	7.1	3.7	2.2
13	woman	1.3	0	0	3.8	5.1	0	2.5	3.3	0.9	8	6	0
14	man	0	0.4	0	3.2	3.4	1.5	2	1.8	2.3	4.5	3.9	2.5
15	man	0.5	5.4	0.3	3.8	4.7	1.7	6	4.5	2.8	7.5	8.3	5.1
16	woman	5.6	7.5	0	4.2	3.1	1.3	6.7	6.6	0	7.4	4.3	2
17	man	1.5	1.5	1.7	7	6.7	7	5	6.2	5.5	7.7	8.4	7.6
18	man	5.3	6.7	0.6	9.5	4	1.7	7.9	6.6	1.2	6.2	5.5	1
19	woman	0.1	0	0	3.5	7	0.7	2.9	2.7	1.5	8.1	6.1	0.8
20	woman	3	7.8	0	7.2	8.4	2.6	7.9	5.4	0.6	8.6	6.6	1.1
21	woman	6.2	5.6	1.1	7.7	7.7	0.1	8.6	6.7	0.9	7.2	8	1.5
22	woman	7	8.2	1.6	6.9	7.6	2.3	6.4	7.5	3	7.1	7	1.8
23	woman	9.5	7.2	0	7.3	9	0.9	9	7.2	0.7	9.5	9	1.9
24	man	2.3	3.1	0	8.6	6.6	0.6	5.9	8.7	1.2	10	9.1	1.6
25	woman	1.5	1.7	0	2.8	0	0	1.9	0	0	5	0	0
26	woman	4.7	4.9	0	9.1	7.8	0	8	5.2	0	8.2	8.5	0
27	man	6.8	6.5	0	3.2	5.4	1.4	4.3	3.3	1.1	8.5	7.4	0.7
28	woman	9	7.1	0	5.4	3.1	0	9.2	4.8	1	9.4	6.1	0.5
29	woman	6	5.5	2.1	7.2	3.7	1	7.4	7.4	5.6	8.5	6.9	4.7
30	man	7.4	5.1	1.9	6.5	3.8	1.9	7.2	6	2.3	8.1	6.2	1.8
Average		4.1	4.4	0.5	5.9	5.7	1.1	5.4	5.1	1.2	7.7	6.5	1.7
SD		3.0	2.8	0.7	2.6	2.6	1.4	2.8	2.6	1.5	1.5	2.3	1.8

(b) Humanity

ID	gender	S^T	F^T	A^T	S^{TV}	F^{TV}	A^{TV}	S^{TA}	F^{TA}	A^{TA}	S^{TVA}	F^{TVA}	A^{TVA}
1	woman	0.1	0	0	0.2	0.1	0.1	7.8	0.2	0.1	6.1	1.6	0.4
2	man	6.4	0	0	8.9	0.9	0	6.8	0	0	8	1.5	0
3	man	9.3	1.5	0	6.4	10	0	7.9	0	0	7.8	9.5	0
4	man	1.7	0	0	9.1	5	0.9	3.6	0	0	10	8.4	2.1
5	man	7.5	0	0	8.7	1.7	0	7.6	0	0	7	0	1.9
6	woman	8.1	0	0.9	8.8	5.9	0.2	7.5	5.3	0.4	9.1	6.9	0.8
7	man	3.7	3.6	0	7.7	2.7	0	4.8	2.9	0	5	6.3	0
8	man	6.8	0	0	7.6	2.6	0	0.1	0	0	8.5	6	1.4
9	woman	0	0	0	8.5	0	0	5	6.9	1	6	4	0
10	man	0.1	0	0	1.7	0.2	0	0.5	0	0	4.9	0.9	0
11	man	0	0	0	0.8	1.3	1.2	0	0	0	1.8	0.7	0
12	woman	3.7	6.5	0.9	6.1	3.4	0.5	6.6	6.9	2.1	4.5	2.2	0.7
13	woman	1.7	0	0	2.7	5.2	0	2	3	0	6.8	5.8	0
14	man	0.6	0	0	1.9	5	1.3	1.5	2	0.9	4	4.5	2.4
15	man	0	6.6	0.1	2.6	4.9	1	5	3.3	0.6	5.5	8.9	1.6
16	woman	8.3	0	0	5.4	0.8	0	7.1	1	0	6.7	1.5	0
17	man	1	0.6	0.4	6.7	6.8	6.2	3	6.5	2.7	7.2	7.8	7.1
18	man	6	2	0.4	9.3	3.5	1	7.6	8.5	0.6	4.5	3.9	0.7
19	woman	0	0	0	3.2	1.4	0.4	2.2	1.5	0.4	8.3	6.4	0.1
20	woman	6.7	0	0	8.2	3.1	1.6	8	2.9	0.8	8.2	6.9	1.8
21	woman	2.8	0	0	3.9	3	0.1	3.4	1.9	0	4.4	5.3	0
22	woman	5.3	2.1	0	6.8	1.5	0	5.8	1.4	0.8	7.9	1.3	0.6
23	woman	9.3	2.1	0	7.8	6.9	0	7.7	2.1	0	9.6	8.6	0.8
24	man	1.3	0.8	0	9.4	6.3	0.4	6.7	2.4	0.4	10	9.4	0.9
25	woman	0	0	0	2.5	0	0	0	0	0.1	5.1	0	0
26	woman	2.5	0	0	8.5	7.1	0	8.1	2.3	0	9.1	1.7	0
27	man	7.3	0.9	0	7.2	2.9	0	5.8	1	0.5	9.3	7.9	0.5
28	woman	8.7	0	0	1.8	2.3	0	7.5	0.8	0	8	2	0
29	woman	7.3	4.2	1.2	7	6.6	0.5	6.5	6	0.6	9.4	8.4	2.6
30	man	7.8	1.7	0.8	6.3	5.9	1.7	7.4	4.6	2	8	6.3	1.2
Average		4.1	1.1	0.2	5.9	3.6	0.6	5.1	2.4	0.5	7.0	4.8	0.9
SD		3.4	1.9	0.3	2.9	2.6	1.2	2.8	2.5	0.7	2.1	3.1	1.4

(c) Slight warmth

ID	gender	S^T	F^T	A^T	S^{TV}	F^{TV}	A^{TV}	S^{TA}	F^{TA}	A^{TA}	S^{TVA}	F^{TVA}	A^{TVA}
1	woman	0.1	0.1	0	0.9	9.9	0.1	7.4	9.8	0.2	3	9.6	0.2
2	man	7.3	6.1	0.1	5.7	10	0	7.7	8	0	8.5	4.5	0.1
3	man	5.3	4.7	0	2.6	7.6	0.5	5.4	6.9	0	3.6	8.9	1.4
4	man	1.8	4.5	0	8.6	6.4	0.9	2.6	2.5	0	10	8	1.6
5	man	5.3	1.4	0	7.5	8.5	0	4.9	3.2	0	7.3	7.8	1.4
6	woman	2.7	4.7	1	8.3	8	0.9	6.5	6.9	0.6	7.6	7.5	1.5
7	man	3.5	4.9	0	7.1	5.3	0	3.4	5.2	0	5	6.8	0
8	man	5.5	3.5	0	5.6	6.3	0	2.5	2.2	0	5.5	5.3	0.2
9	woman	2.1	0.9	0	6.5	5.9	0	5.1	6.7	1	5.4	3.3	0
10	man	6.7	5.1	0	7	7	0	4.3	8.8	0	7.3	8	0
11	man	0	0	0	0	4.8	0	0	4.9	0	5	3.7	0
12	woman	3.3	6.9	0.8	4.2	6.2	0.9	6	7.4	1.7	3.7	3.7	2.5
13	woman	2	0	0	0	8	0	3.5	7	0	6.5	8.2	0.1
14	man	0.8	0	0	2	5	2.5	1.9	2	1.4	3.6	4.5	3.2
15	man	0	6.7	0	4.9	7	1	6.2	5.4	1.9	5.8	7.5	2
16	woman	2	8	0.2	4.3	9.1	1.3	4.6	7.7	0.9	3.3	8	1.3
17	man	2	0.9	0.8	6.4	7	6	2	5.5	0.7	5.5	7.3	6.8
18	man	5.7	8.1	0.4	9.4	6.6	0.6	7.9	9	0.7	2.7	8.9	0.7
19	woman	0	1.2	0	3.7	3.4	0.6	2.2	1.3	0.5	7.3	6.5	0.2
20	woman	2.5	8	2	1.9	10	5.2	1	7.7	2.7	6.2	9	4.3
21	woman	2.6	5.8	0	2	8.6	0	2.1	8.1	0	2.8	8.5	0
22	woman	5.3	6.8	0	6.5	6.8	0.2	5.8	7.5	0.8	5.5	6	0.9
23	woman	7.2	5.1	0	6	5.3	0	2.2	1.2	0	8.6	6.2	0
24	man	1.3	8	0	7.3	7	0.4	6.8	8.5	0.4	9.8	9.5	1
25	woman	0	0	0	0	0	0	0.1	8	0	0.2	0	0
26	woman	7.9	6.1	0	8.5	7.3	0	6.1	8.1	0	9.2	8.7	0
27	man	6.7	1.4	0	2.6	5.5	0	4.9	1.5	1	6.8	6.7	1
28	woman	6.3	4.1	0	3.8	4.2	0	8.3	5.5	0.2	6.4	8.9	0
29	woman	3	6	1.2	4.9	6.6	2.4	4.3	6.5	1.4	6.7	8.4	2.1
30	man	7.8	2	0.8	5	7.4	1.2	6.5	5.7	1.6	6.8	5	1.2
Average		3.6	4.0	0.2	4.8	6.7	0.8	4.4	6.0	0.6	5.9	6.8	1.1
SD		2.6	2.8	0.5	2.7	2.1	1.5	2.3	2.5	0.7	2.3	2.2	1.5

(d) Warmth

ID	gender	S^T	F^T	A^T	S^{TV}	F^{TV}	A^{TV}	S^{TA}	F^{TA}	A^{TA}	S^{TVA}	F^{TVA}	A^{TVA}
1	woman	0.1	7.3	0.1	0.2	9.9	0	0.3	9.8	0	0.8	9.9	0.1
2	man	4.9	1.8	0.6	0	9.4	0	7.2	0.6	0	2.3	10	0
3	man	3.6	4.7	1.8	4.2	6.3	0	4.3	6.2	0.4	5	8.8	0.4
4	man	6.1	7.2	0	5.8	8.1	0	3.9	0	7.8	9.3	8.5	7.5
5	man	4.9	8.2	0.9	7.9	10	3	2	8.3	1.4	7.8	10	5
6	woman	6.7	6.3	0	7.5	7	0.1	6.5	6.1	0	6.1	7.2	0
7	man	2	6.9	0	5	6.1	1.2	0	1.4	5.1	0	6.3	5.2
8	man	4.7	4.1	2.9	5.7	4	0	3.7	5.8	0	4.7	5.8	1.5
9	woman	1.6	6.8	0	7.2	7.7	0	5.1	6	0	6.4	3.2	0
10	man	5.1	7.6	0	6.4	8.5	0	5	9.4	0	2.7	9	0
11	man	0	8.6	0	0	10	0	0	8.2	0	6.3	9.1	0
12	woman	1.9	8	1	2	6.8	2	1	6.8	2.7	2.7	5.9	1.3
13	woman	3.3	10	0	0	10	0.2	7	10	0.2	6.5	7.4	0.2
14	man	4.9	1.8	0	6.5	6	2.8	1.6	2.4	1.9	5.3	5.3	2.8
15	man	0	9.3	0.3	3	7.7	0	2.3	9.5	0.5	4.5	8.3	0
16	woman	2	10	1.1	3.8	10	0.2	2.1	9.3	1	3.1	8.9	2.1
17	man	0	1	0	0	1.3	0.5	1.1	5.3	0	3.5	8	0.6
18	man	3.5	8.8	1.5	5.3	7.1	0.9	3.3	8.1	0.5	1.7	7.6	1
19	woman	4.8	6.8	5.2	3	8.1	0.8	2.7	5.8	5.1	2	6.5	4.9
20	woman	1.3	8.4	2.9	0.9	9.4	3.3	0	9	5.7	4.2	10	3.9
21	woman	0	10	0	0	10	0	0.1	8.8	0	2.1	9.4	0
22	woman	4.8	3.4	0.2	5.7	7.8	0.1	5	3	1.7	6.1	7.5	1
23	woman	5.6	6.3	0	3.1	2.2	0	3.3	0.9	0	6.3	4.9	0
24	man	4.8	6.8	0	8.4	7.7	0.7	6.9	8.2	0.4	9.1	9.6	0.5
25	woman	0	10	0	0	0	0.2	0	10	0	0	5.2	0
26	woman	7.3	6.5	0	8.9	10	0.2	7.6	7.8	1.7	10	9.8	0
27	man	5.9	5	0	4.9	5.2	0	5.8	2.5	0	7	7.5	0.2
28	woman	7.7	4.8	0	7.2	7.6	0	7.8	7.7	0	7.6	7	0
29	woman	3.6	7.4	2.2	4.1	7.5	1.4	3.8	8.4	3.8	5.6	8.3	3.6
30	man	4.8	6.1	1.1	3.8	6.4	1.3	4.3	4	1.6	2.9	6.2	1.2
Average		3.5	6.7	0.7	4.0	7.3	0.6	3.5	6.3	1.4	4.7	7.7	1.4
SD		2.4	2.5	1.2	2.9	2.6	1.0	2.5	3.1	2.1	2.7	1.8	2.0

(e) Coldness

ID	gender	S^T	F^T	A^T	S^{TV}	F^{TV}	A^{TV}	S^{TA}	F^{TA}	A^{TA}	S^{TVA}	F^{TVA}	A^{TVA}
1	woman	9.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.7	0.1	0.1
2	man	2.5	0	0	5	0	0	8	0	0	1.1	0	0
3	man	3.5	2	1.7	3.8	1.5	4.8	4	4.9	5	0.8	0	3.4
4	man	6.8	1.2	8.7	0.2	0	1.5	2.8	1	8.8	0.5	0	6
5	man	5	0	8.7	1.5	0	2.2	1.6	0	8.1	2	0	0
6	woman	2	0	7.5	1.9	0.1	7.8	1.9	0.1	9.3	1.6	0.2	8.3
7	man	7.2	3	7.1	2.1	2.2	2.3	0	0	5.1	6.9	0	5.5
8	man	6.9	5.7	10	3.6	5	10	7.9	3.4	8.8	4.6	2.9	10
9	woman	1.5	0	2.3	0	0	0	9.8	0	2.6	0	0	10
10	man	0	0	3.7	0	0.3	3.4	0	0.1	5.4	0	0.7	3.2
11	man	2	0	3.2	0	0	0.1	7.6	0.1	1.1	0	0	3.6
12	woman	7	2	5.3	7.6	3.4	6.5	1	2.3	7.2	7.8	1.9	6.7
13	woman	0	0	10	8.5	0	5.3	0	0	4.9	2.6	0.2	10
14	man	3.8	5	6.5	2.7	1.9	5.8	4.3	4.1	7.1	1.5	3.8	4
15	man	10	0.7	4.9	7.5	0.6	8.6	8.6	0.3	8.5	3.8	0.2	6.7
16	woman	10	0	4	8	0	8.3	8.2	1.8	6.3	1	2.6	8.1
17	man	0.5	0	0	1.3	0	0.4	8.9	1.5	1.5	6.3	0	5.5
18	man	5.9	1.2	9.5	3.9	2.5	8.5	7.3	1	5.6	9.4	1.3	7
19	woman	6	3.4	5	3.7	1.5	5	6.7	3.4	4.9	6.3	0.6	4.9
20	woman	9	2.8	4.8	8.9	0	4.7	9.2	1.2	4.5	5	0.1	7.4
21	woman	10	0	10	9.9	0.1	8	10	0	8.6	6.5	0.1	7.9
22	woman	6.3	2.6	3.8	4	1.4	5.9	5.4	3.2	5.6	2.3	2.5	7
23	woman	2	0	1.8	4.2	0	2.9	5	0	0.9	0.5	0	0
24	man	6.6	1.7	10	1.7	2.7	8.2	1.1	1.2	6.4	3.1	0.9	9.6
25	woman	0	0	7.6	0.1	0.1	0	0	0	0	7.6	0	0
26	woman	0.2	1.8	10	0	0	1.8	0	0	3.4	0	0	8
27	man	0	0	7.1	1.9	1.4	6.2	0	0	7.5	0	2.8	3.8
28	woman	2.5	2.8	8	2	0	10	0	1	8.2	0.7	1	10
29	woman	6.6	6.4	8.1	5.8	1.5	8.2	4	2.7	8.6	2.6	1.4	7.3
30	man	1.8	1.2	0.6	1.2	1.7	0.8	3.6	1	0.5	1	1.8	1.4
Average		4.5	1.5	5.7	3.4	0.9	4.6	4.2	1.1	5.2	2.9	0.8	5.5
SD		3.4	1.8	3.4	3.0	1.3	3.4	3.6	1.4	3.1	2.8	1.1	3.3

(f) Softness

ID	gender	S^T	F^T	A^T	S^{TV}	F^{TV}	A^{TV}	S^{TA}	F^{TA}	A^{TA}	S^{TVA}	F^{TVA}	A^{TVA}
1	woman	8.4	9.9	0.2	9.8	9.9	0.1	7.3	9.9	0.2	7.6	9.8	0
2	man	2.4	10	0.2	6.2	10	0.1	7.4	10	0	8.7	10	0
3	man	9.3	10	0.7	7	10	0	7.6	9.1	0	7.4	9.1	1.3
4	man	8.7	8.8	0	10	8	0	8.8	9.8	0	10	9.2	0.2
5	man	5.1	8.1	0	7.8	8	0	8.5	7.1	0	8.5	4.7	2.3
6	woman	8.1	10	0.1	8.7	10	0	8.2	9.9	0.1	7.8	10	1.2
7	man	8.3	8	0	10	6.1	0	8.3	9.9	0	8.2	8.1	0
8	man	6.8	5.6	0	6.4	4	0	6.1	4.9	0	8.5	6	0
9	woman	8	10	0	7.5	8.5	2	5.1	10	0	6.2	6.7	0
10	man	9.1	10	0	7.7	9.3	0.1	2	9.7	0	8.9	9.8	0
11	man	1.7	10	0	2	9.9	0	6.1	10	0	6.6	10	0
12	woman	7.8	9.3	1	6.6	7.8	0	7.3	7.5	1.6	8.2	8.8	1.4
13	woman	8	10	0.2	6.5	10	1	7.1	9.8	0.2	7.8	9.8	0.2
14	man	6.9	5.4	0.8	7.6	5.4	2.3	4.2	3.9	2.1	6.4	4.3	4.4
15	man	0	9.9	0	7.6	8.3	0.2	9.3	9.7	0.4	0.6	9.8	0
16	woman	1.7	10	1.5	4.1	8	2.3	1.1	8.9	1.9	9.2	2.2	1.1
17	man	0.4	10	0	0.5	10	0	0.6	10	0	1.1	8.8	0
18	man	8.1	7.3	0.9	9.3	7.2	0.3	0.6	6.3	0.4	9	7.9	0.5
19	woman	8.1	9.5	0	3.1	8.5	0.6	7.1	9.4	0.6	8.4	9.4	0.5
20	woman	3.7	10	0	5.9	10	0	7.2	9.9	0	6.4	9.9	0
21	woman	10	7.9	0.2	9.9	10	0	8.5	10	0	9.2	10	0
22	woman	7.6	6.7	0.4	6.3	7.9	0	6.6	7.5	1.9	7.5	7.9	1.5
23	woman	9.1	10	0	8.5	10	0	8.9	10	0	8.6	10	0
24	man	8.7	10	0	8.8	8	0	9.5	9.7	1.1	6.8	9.1	0.3
25	woman	10	10	0	10	10	0	10	10	0	10	10	0
26	woman	7.2	7.8	0	8.8	10	0	10	10	0	9.9	10	0
27	man	6.9	9.8	0.6	9.2	9.5	0	9.4	9	0.3	9	10	0
28	woman	10	9.1	0.1	8.8	7.5	0	8.4	4.2	0	9.8	6.7	0.2
29	woman	8	7.8	1.3	8	7.3	1.3	6.6	7.5	1.8	8.8	8.3	1.9
30	man	8.5	9.2	0.6	7.9	5.5	1	2.1	3.5	0.5	1.2	8.5	1.3
Average		6.9	9.0	0.3	7.4	8.5	0.4	6.7	8.6	0.4	7.5	8.5	0.6
SD		2.9	1.4	0.4	2.4	1.6	0.7	2.8	2.1	0.7	2.5	2.0	1.0

(g) Hardness

ID	gender	S^T	F^T	A^T	S^{TV}	F^{TV}	A^{TV}	S^{TA}	F^{TA}	A^{TA}	S^{TVA}	F^{TVA}	A^{TVA}
1	woman	2.3	0.1	9.9	0.1	0	9.8	0.3	0.2	9.8	0.2	0.2	9.8
2	man	3.5	0	10	1.1	0	9.8	0	0	10	0	0	10
3	man	5.4	0	8.8	5.9	0	10	4.9	0.9	10	0.7	1.5	9.3
4	man	3.5	0	10	0	0	8.4	2	0	10	1.1	0.1	10
5	man	5	3.3	10	1.3	2	0	6.8	2.9	10	2.2	2.1	8.2
6	woman	1.5	0.2	9.8	1.8	0	10	0.7	0	10	1.1	0	9.9
7	man	0	0	10	0	0	10	1.1	0	10	0	1.7	10
8	man	0	3.6	10	5.2	0	10	5.7	0	10	0	0	10
9	woman	2	0	10	1.5	2	10	5	0	9.3	4.6	0.2	10
10	man	0.2	0.2	10	0	0.3	9.7	0.2	0	9.8	0	0.9	10
11	man	6.9	0.1	10	3.5	0.1	10	6.5	0	10	1.1	0.1	10
12	woman	2.5	0.5	8.7	2.6	1.2	8.3	3	2.2	8.4	1.7	1.8	9.2
13	woman	0.2	0	9.8	2	0	10	0	0	10	0	2.9	10
14	man	4.5	4.7	8.9	3	2.7	5	3.4	3	7.5	1.1	2.3	4.4
15	man	10	0	10	1.1	1.8	9.8	0.5	0.2	9.8	8	0.4	10
16	woman	8.7	0	10	7.5	0.2	9.9	7.1	1.9	10	2.2	1.4	10
17	man	9	0.5	10	8.6	0	10	8.8	0.2	9.3	8.6	1.2	10
18	man	0.5	2	9.6	1.5	2.1	9.5	4.9	2.5	9.4	1.2	1	9.7
19	woman	2.4	0.2	10	7	0.7	9.5	0.4	0.5	9.4	0.3	0.5	9.7
20	woman	8.2	0	10	5.2	0	9.9	1.4	0	10	3.6	0	10
21	woman	0	0.1	10	0	0	10	1.6	0	10	0	0	9.9
22	woman	3.9	0.3	10	3.1	2.3	9.7	2.9	2.5	8.1	2.2	2.3	9.5
23	woman	0	0	10	0	0	9.1	0	0	10	0	0	9.9
24	man	6.5	0.2	10	5.6	1.5	10	1.7	3.3	9.7	6.7	2.1	10
25	woman	0	0	10	0	0	10	0.3	0	10	0	0	10
26	woman	8	2.4	10	1.5	0.9	9.9	0	2.1	10	0.9	2.3	10
27	man	0	0.7	9	0	3.4	9.2	0	0.5	10	0	1.2	8.5
28	woman	0	1.2	10	0	0	10	0	3.6	8.8	0	2.5	10
29	woman	3.9	2	7.3	2.2	2.5	8.4	2	1.9	8.5	0.9	1.5	8
30	man	1.7	1	8.9	1.4	1.1	9.1	1.4	1.1	9.4	1	1.5	9.5
Average		3.3	0.8	9.7	2.4	0.8	9.2	2.4	1.0	9.6	1.6	1.1	9.5
SD		3.2	1.3	0.6	2.5	1.0	2.0	2.6	1.2	0.7	2.4	0.9	1.1

(h) Smoothness

ID	gender	S^T	F^T	A^T	S^{TV}	F^{TV}	A^{TV}	S^{TA}	F^{TA}	A^{TA}	S^{TVA}	F^{TVA}	A^{TVA}
1	woman	8.7	9.9	0.2	0.2	0.2	0	0.3	9.8	0.2	7	9.8	0.1
2	man	8.7	4.3	0	4.8	0.5	0	6.2	0.1	0	7.9	0.7	0
3	man	7.4	7.8	0	9.5	9.4	0	9	6.8	0	8.9	3.5	0.7
4	man	8	7.1	0	8.4	6.9	0	8	8.1	0	10	3.7	0
5	man	7.6	2	0	8	2.4	0	6.9	1.7	0.3	5.2	2.5	0
6	woman	6.8	5.3	0.1	8	1.7	0	7.4	7.1	0.7	6.8	7.8	0
7	man	7.4	8.8	0	9.5	5.3	0	7.7	10	0	7.9	10	0
8	man	4.8	2.4	0	8.5	10	0	4.2	2.6	0	5.6	5.1	0
9	woman	7.3	5	0	5.7	3.3	0	6.3	7	0	2.9	3.9	0
10	man	3.6	7.1	0	10	5.5	0	2.7	5.8	0	3	7	0
11	man	6.4	0	0.1	5.1	7.5	0.2	7	1.2	0	6.6	0	0.2
12	woman	7.5	1	1.5	7.8	6.7	0.4	8.2	3.9	2.3	9.5	5.4	0.4
13	woman	0.1	5.4	0	7.4	6	0	5	0	0	6.7	6.7	0.1
14	man	2.7	1.1	0.4	7.2	3.8	2.4	4.1	2.2	1.8	4.2	3.1	1.9
15	man	5.2	8	0.2	7.3	7.5	0.2	7.4	8	0.4	2	8.3	0.1
16	woman	8.3	6	1.2	6.7	7.1	0	9.3	9	0.2	2.7	7.3	0
17	man	8.4	10	0	9.6	10	0	8.9	10	0	8.3	8.4	0
18	man	8.6	8.1	0.5	7.9	7.8	2.1	6.6	7.4	0.2	8.2	8.5	0.3
19	woman	7.1	2.2	0	3.1	0.7	0.2	7.1	3.6	0.7	7.7	3.6	0.3
20	woman	6.4	1.6	0	9	6.7	0	7.7	6.9	0	6.7	8.5	0
21	woman	8.2	6.2	0	8.6	5.5	0	8.1	6.2	0	5.9	5.7	0
22	woman	6.5	4.1	0	6.5	8	0.3	5.3	6.3	0.6	6.2	3.8	0.8
23	woman	9.6	3.2	0	10	6.1	0	8.9	5.1	0	7	4.2	0
24	man	6.4	2.4	0.9	7	1.5	0.5	8.4	2.8	0.3	6.4	3.8	0.5
25	woman	5	0	0	4.8	0	0	0.3	0	0	7.6	0	0
26	woman	8.3	4.9	0	10	2.7	0	10	2	0	10	5.4	0
27	man	4.6	8.2	0	6	7.5	0	7	9.2	0	5.6	8.2	0
28	woman	5.1	0	0	7.8	0.6	0	8.2	0.2	0	7.6	0	0
29	woman	6.8	2.1	1.7	8	2.4	0.9	7.6	2.5	1.8	8.5	2.5	1.4
30	man	8.7	5.2	1	6.3	4.3	1	6.4	4.5	0.8	5.2	5.6	0.8
Average		6.7	4.6	0.3	7.3	4.9	0.3	6.7	5.0	0.3	6.6	5.1	0.3
SD		2.1	3.0	0.5	2.2	3.1	0.6	2.4	3.3	0.6	2.1	2.9	0.5

5

(i) Roughness

ID	gender	S^T	F^T	A^T	S^{TV}	F^{TV}	A^{TV}	S^{TA}	F^{TA}	A^{TA}	S^{TVA}	F^{TVA}	A^{TVA}
1	woman	0.3	0.2	9.9	0	9	9.7	0.4	0.7	9.8	0.2	9.8	9.9
2	man	0.7	1	10	0	0	10	0	0	10	0	0	10
3	man	0.4	0.1	10	0.4	0	10	1.6	0.8	10	0	0.1	8.3
4	man	0	2.5	10	0	3.1	10	0	2.6	10	0	6.8	10
5	man	3.5	0	10	0	0	10	0	0	10	3.6	0	9.8
6	woman	0	0.1	10	0.1	0	10	0	0.1	9.1	0	0	10
7	man	0	0	10	0	0	10	0	0	10	0	0	10
8	man	0	0	10	2.4	2.7	10	0	0.1	10	0	0.1	10
9	woman	1.1	0	10	0	0	10	3.1	1.2	6.7	0	0.1	10
10	man	0.2	0.8	10	0.1	0.2	10	1.2	0.3	10	0	0.1	10
11	man	0.2	0	9.9	0	0	10	0	1	10	0.1	7	10
12	woman	2	1.5	9.6	2.8	2	8.6	0.6	3.1	7.7	0.5	2.3	7.3
13	woman	0	0	10	0	0	10	0	0	10	1.8	0.2	10
14	man	2.3	3.2	8.5	0.8	2.6	6.6	3.2	2.5	8.4	1	1.8	4.4
15	man	5.1	2.3	10	1.1	0.3	9.7	0.3	0.2	9.5	6.7	0.2	9.8
16	woman	0	0	10	3	0	8.5	0.7	1.9	10	7.2	2	10
17	man	0	0	10	0	0	10	0	0.1	10	0.8	0	10
18	man	0.6	0.6	9.5	0.5	0.5	9.6	0.5	0.2	9.7	0.3	0.2	9.6
19	woman	0.4	1.1	10	2.5	2.2	9.7	0.5	0.5	9.5	0.4	0.6	9.7
20	woman	5.9	7.2	10	1.6	2.1	10	2	5.9	10	2.2	5.3	10
21	woman	0.1	0	10	0	0.2	10	0	0	10	0.1	0.2	10
22	woman	1.3	0.5	10	1.9	1.5	9.9	1.3	0.7	9.5	2.4	3.3	9.4
23	woman	0	0	10	0	0	10	0	0.2	10	0	0	10
24	man	0.7	0	10	1.1	0.3	10	0.7	0.4	9.8	2.3	0.8	10
25	woman	0	0	10	0	0	10	0	0	10	0	0	10
26	woman	0	0	10	0	0	10	0	2	10	0	0	10
27	man	0	0	10	0	0	10	0	0	10	0	0	9.8
28	woman	0	0	10	0	0	10	0.2	0	10	0	0	9.8
29	woman	1.4	4	9.4	2.1	6.5	8.8	2.5	5.1	9.5	0.5	1	9
30	man	1.3	1.1	8.9	1.3	2.7	9.2	0.7	1	9.2	1.2	1	9.1
Average		0.9	0.9	9.9	0.7	1.2	9.7	0.7	1.0	9.6	1.0	1.4	9.5
SD		1.5	1.6	0.4	1.0	2.1	0.7	0.9	1.5	0.8	1.9	2.5	1.1

(j) Slipperiness

ID	gender	S^T	F^T	A^T	S^{TV}	F^{TV}	A^{TV}	S^{TA}	F^{TA}	A^{TA}	S^{TVA}	F^{TVA}	A^{TVA}
1	woman	0.1	0.1	0.3	0	0.1	0	0.2	2.2	0.3	0	0.2	0.2
2	man	2.3	1.5	0	1.6	1	0	2.7	1.6	0	3.2	2.2	0
3	man	3.5	7.7	0	6.1	1.7	0	5.9	5.2	0	1.8	5.2	0.7
4	man	5.7	5.8	1	5.7	2.8	0	6.8	3	0	7.9	2	0.8
5	man	2.7	0	0	1.4	0	0	0	0.2	0	1.8	2	0.1
6	woman	2.5	3.8	0.4	7.8	4.9	0.1	6.4	6.9	0.1	8.2	4.6	0
7	man	1.6	8.7	0	2.3	9	0	4	6.2	0	2.9	8.6	0
8	man	4.5	2.3	1	3.6	4	0.1	3.9	0.1	0	5.1	3.7	0.1
9	woman	0	0	0	0.2	0.2	0	3.3	0	0	1.8	0	0
10	man	4	2.9	0	2.1	5	0.1	0.3	3.9	0	1.3	5	0.2
11	man	5.5	0	0	8.1	1	0.1	4	0.1	0	0	0	0
12	woman	2.7	3.1	0.9	3.9	2.2	0.5	3.5	3	1.4	5.4	1.6	0.7
13	woman	0.3	0	0	0	0.2	0	0	0	0	0	3	0
14	man	2.5	5.5	0.7	3.4	3.4	1.7	3.2	2.4	1.9	1.8	1.7	1.4
15	man	2	5.1	0	5.5	7.8	0.3	2.2	5.1	0.3	1.3	6	0
16	woman	9	2.8	0	7.7	3	0.3	6.7	2.3	1.4	2.9	3.1	1
17	man	1.5	9.2	0	1.5	7.6	0	5.1	6	0	3.3	5	0
18	man	1.6	6.9	0.5	2.8	6.9	0.7	3.5	8.2	0.3	1.1	8.5	0.2
19	woman	3.5	3.3	0	0	0.8	0.8	7.6	2.5	0.5	6.6	2.5	0.4
20	woman	1.1	4.7	0	2	2.7	0	1.9	1.2	0	2	5.4	0
21	woman	1.5	5.7	0.1	2.5	2.1	0	2.4	3.2	0	2.4	2.8	0
22	woman	4	1.8	0.1	4	1.9	0.2	5.5	2.7	1	3.4	3.1	0.8
23	woman	1	0	0	6.7	0	0	5.9	2.2	0.1	5.6	0	0
24	man	2	1	0.9	1.6	2.4	0.9	6	3.2	0.3	5.1	2.6	0.6
25	woman	0.2	0	0	0	0	0	0	0	0.1	4.3	0	0
26	woman	0	0	0	0.2	0	0	2.3	0	0	0	0	0
27	man	1.8	6.6	1.1	2.9	5.1	0	1.6	7.8	0	2.5	5.5	1.5
28	woman	0	0	0	0	0.2	0	0	0	0	0.3	0	0
29	woman	6	1.9	1.5	5.7	0.5	2	6	1.8	1.6	3.8	2.8	1
30	man	1.8	2.6	1	5.5	3.9	1.3	6.7	4.9	1.7	2.9	6.4	0.6
Average		2.5	3.1	0.3	3.2	2.7	0.3	3.6	2.9	0.4	3.0	3.1	0.3
SD		2.1	2.9	0.5	2.6	2.6	0.5	2.4	2.5	0.6	2.3	2.5	0.5

(k) Stickiness

ID	gender	S^T	F^T	A^T	S^{TV}	F^{TV}	A^{TV}	S^{TA}	F^{TA}	A^{TA}	S^{TVA}	F^{TVA}	A^{TVA}
1	woman	9.8	0.2	0.2	8.5	0.2	0	8.3	1.1	0.3	9.9	0.2	0.2
2	man	4.5	3.4	7.4	6	0.9	7.2	6.3	0	9.4	7.9	0	6.3
3	man	7.5	2.7	10	6	7.9	10	8.3	5.1	8.7	7.8	5.4	8.2
4	man	6.1	1.9	1.1	7.7	7	1.7	7.4	6.3	6.8	7	6.2	1.3
5	man	6.4	0	0	8	0	0	7.5	0	2.6	7.1	0	7.4
6	woman	4.7	2.2	0.6	0.1	2.1	0	7.1	2.5	0	5.3	1.4	0
7	man	1.2	0	2	0	0	5	0	1.2	2.8	2.9	1.8	6.2
8	man	7.9	0	2.5	8.1	3.4	1.8	5.7	5.2	2.3	6.6	5	3.9
9	woman	1.5	0.1	10	4.9	5.8	8.5	6.4	1.6	5.5	3.7	1.6	6.5
10	man	3.7	2.2	4.9	5.4	1.5	7	5.5	0	2.3	4.8	3.3	4.8
11	man	4.4	0	0.2	0	0	0	8.2	0	0.2	0	0	0
12	woman	4.9	3.2	9.5	1.3	4.3	9.3	1.5	2.3	2.7	3.6	3.6	9.4
13	woman	5.6	4.7	0	10	0	0	10	0.2	0	7.5	5	0.1
14	man	2.7	0	0	5	4.4	1.6	3.6	3	1.8	5.9	4.1	7.9
15	man	0.1	2.69	8	6.2	4.9	3	3.3	0.8	5	1.4	2.9	3.5
16	woman	0	0	0	6.6	0.3	2.7	2.7	1.3	1.7	2.3	1.9	1.6
17	man	8.8	0	9.1	7.6	0	9.1	6	0	1.5	9.4	0	8
18	man	7.8	6.2	8.9	8.4	2	9.2	6.5	7.8	8.1	9.2	2.1	9.1
19	woman	7.4	3.3	7.8	9.8	0.8	7.8	7.3	6.7	9.4	8.2	0.9	8
20	woman	0	2.1	6.9	0	1.8	8.9	1.4	8.4	8.9	2.2	6.9	8.1
21	woman	5.5	6.6	5.2	2.4	1.8	3.9	2.3	4.2	3.3	4	4.5	5.6
22	woman	7.4	4.3	3	3.6	6.4	5.8	7.6	6.4	3.8	7.1	5.7	4.5
23	woman	4.5	4	5.3	5.8	0.3	2.3	6.8	3	3.4	2.7	0.7	7.3
24	man	7.4	2	5.6	8.3	2.2	0.9	6.3	7.5	1.4	9.1	7.1	0.8
25	woman	10	0	4.8	10	0	0	10	0	0	10	0	0
26	woman	8.1	7.8	9.8	10	8	8.1	8.2	0	10	8.6	7.5	10
27	man	8.9	1.3	0	10	1	0	10	2.4	0	9.4	0.4	1.5
28	woman	6.6	1.9	5.9	5.1	5.5	0	5.9	5.5	1.6	6.2	0.9	4.5
29	woman	6.1	2	1.6	6.3	2.4	1.1	6.3	2.5	2.2	9.2	1.4	1.9
30	man	2.7	1	1.3	4.2	7.6	1.4	5.7	2.3	1.6	6.2	1.2	0.8
Average		5.4	2.2	4.4	5.8	2.8	3.9	6.1	2.9	3.6	6.2	2.7	4.6
SD		2.9	2.2	3.7	3.2	2.7	3.7	2.6	2.7	3.2	2.8	2.4	3.4

(l) Dryness

ID	gender	S^T	F^T	A^T	S^{TV}	F^{TV}	A^{TV}	S^{TA}	F^{TA}	A^{TA}	S^{TVA}	F^{TVA}	A^{TVA}
1	woman	1	0.5	9.9	0	0.2	9.8	0.3	0.2	9.8	0.1	0.2	9.9
2	man	1.6	5.5	7.6	4.2	10	9.9	6.3	8.2	10	1	2.5	9.9
3	man	3.4	4.7	10	4.1	1.1	9.3	8.3	6.9	10	0.8	1.4	9.1
4	man	2.1	1.7	10	1.2	8.9	10	1.7	8.7	10	0.6	0.7	10
5	man	2.5	0	8.7	0	2.3	9	0	1.8	7.9	2	2	4.8
6	woman	1.1	0	9.3	0.3	0.5	10	4.7	0.1	9.2	1.9	0	10
7	man	6.4	8.2	5.1	7.8	10	5	8.6	8.4	3.5	8.4	10	
8	man	3.4	5.7	4.7	4.2	5.8	7.3	4.2	4.9	5.8	1.6	5.4	4.8
9	woman	0	7.4	10	5	8.4	10	5.2	6.8	7.4	3.1	5	8.7
10	man	0.1	4.8	10	2.4	3	8.9	8.6	7.6	8.5	0.2	4.3	8.9
11	man	0	2	2.6	0	0	9.8	0	0	7	0	0.9	6.5
12	woman	2.8	2.2	2.1	2.2	2.8	6.9	2.9	3	2.8	2	2.2	3.1
13	woman	0	1.7	10	0	3.7	4.8	0	0	5.4	2.4	0	8
14	man	4.9	6	8	2.1	2.9	6.2	0	7.4	6.3	2.2	2.7	2.8
15	man	5.3	10	5.1	2.8	7.1	7.5	1.7	9	5.1	5.7	7.4	4.8
16	woman	8.3	7.9	8.9	4.9	2.4	10	3	1	9.9	4.5	1.4	9.3
17	man	0	0.5	0.6	0	8	0.6	3.5	8.5	8.6	2.5	1.3	10
18	man	1.7	3.1	9.3	2	3	7.7	0	3.1	7.1	1.5	2	9
19	woman	0.5	6.7	10	2.5	8.6	9.7	0.4	6.2	9.4	0.4	6.3	9.6
20	woman	10	8.4	8	9.2	8	9.1	0.3	10	9.8	6.6	9.9	7.6
21	woman	1.7	10	7	0	8.1	8.2	2.5	9.1	10	1.6	8.5	7.2
22	woman	6.5	4.2	2.3	3.9	1.7	6.5	1.9	4.3	6.7	2.1	2.5	5.7
23	woman	0.5	3.3	6.6	0.5	0	6.4	0.7	0.6	0.7	0	1.5	6.1
24	man	1.8	2.9	7.2	1.8	1.4	9.5	1.4	8.8	7.8	2.5	2	8.3
25	woman	0	0	10	0	0	10	0	0	10	0	0	10
26	woman	0	2	8	0.1	0	5.8	0	0	5	0	0	8.2
27	man	1.5	2.5	8.3	0	3.7	7.9	0.7	6.6	1.4	0.5	3.4	8.6
28	woman	0	2.2	2.3	0.9	0.4	9.2	0.1	3.2	10	1.7	1.1	4.6
29	woman	2.4	7.9	8.6	4.9	6.1	7.7	2.1	8	8.6	2.6	1.9	8.8
30	man	2.7	7.4	9.1	2.9	7.3	9.1	2.1	6.2	9.4	1.9	5.8	9.3
Average		2.4	4.3	7.5	2.2	4.1	8.2	2.3	5.0	7.6	1.9	3.0	7.8
SD		2.6	3.1	2.9	2.3	3.4	2.1	2.5	3.5	2.6	1.6	2.8	2.2

(m) Moistness

ID	gender	S^T	F^T	A^T	S^{TV}	F^{TV}	A^{TV}	S^{TA}	F^{TA}	A^{TA}	S^{TVA}	F^{TVA}	A^{TVA}
1	woman	8.6	9.9	0	7.3	9.4	0	9.7	7	0.1	9.8	9.8	0.2
2	man	7	6	0	6.3	1.2	0	6.1	2.2	0	9	0	0
3	man	6.3	4.7	0.5	5.9	5.1	9.3	6.1	3.8	0	6.2	4.7	5
4	man	6.7	2.1	0	5.2	0	0	7.4	1.4	0	6	0	1.4
5	man	7.7	1.8	1.5	7.3	7.7	1.1	8.5	0.8	0	4.9	7.9	0
6	woman	6.7	1.1	0.3	4.7	5.1	0	7	4.9	0.1	5.1	5.6	0.7
7	man	2.1	0	0	1.3	0	0	0	0	0	6.1	0	0
8	man	6.2	4.9	5	3.5	2.6	2.1	5.8	4.9	2.7	6	4.4	1.2
9	woman	1.5	0	0	5	5.6	0	3.5	0	0	2	6.1	0
10	man	5.1	2.3	0	7.2	5.4	0.3	9.2	4.9	0	2.5	5.6	0
11	man	5.2	0	1.2	0	1	0.1	10	0	0.2	1.4	1.9	0.2
12	woman	8	7.3	7.2	6.7	8.2	6	2.6	7.5	7.6	7.8	7.1	5.8
13	woman	4.9	5.4	0	4.1	0	0	10	5	0	7.5	5.3	0
14	man	5.2	0	0.4	6.4	4.9	1.2	7.2	3.4	1.8	5.2	2.9	3
15	man	0.3	0.1	0.6	6.1	0.3	2.3	7.2	0.4	1.5	0.3	0.3	5
16	woman	0	1	0	0.9	2.9	0	0	7.1	1.1	7	7.3	8
17	man	0.6	0	0	0	0	0	6	0	0	4.8	0	0.2
18	man	7.2	1.7	0.6	5.6	7.5	2.2	6.5	7.1	0.6	6.6	1.6	1.2
19	woman	9.7	1.3	0	6.9	0.7	0.3	8.2	2.7	0.6	8.2	1.8	0.4
20	woman	1.8	1.4	2.5	1.6	3.5	1.2	2.2	0.6	0	3.1	1.3	0
21	woman	4.6	0	1.8	8.4	3	3.2	4	1	0.2	8.4	3.8	1.1
22	woman	6.1	5.7	2.9	5.9	6.7	4.2	7.5	7	2.4	7.1	7.6	2.3
23	woman	1.5	0	0	4	0	0	4	0	0	2.9	0.8	0
24	man	6.4	5.2	0.7	7	6.7	0.5	5.7	5.5	0.4	7.7	6.8	0.2
25	woman	0.1	2	0	0	0	0.1	0	0	0	0.2	0	0
26	woman	7.5	7.6	0	5.5	5.5	0	5.3	5	0	6.8	7.7	0
27	man	9.2	2.4	0	8.2	0	0	9.6	0	0.8	8.6	0.4	0
28	woman	6.9	0	0	4.7	0	0	5.9	0	0	6.8	0	0
29	woman	6.7	1.7	1.2	2.2	1.5	0.7	3.7	1	2.1	3.8	1.4	1.5
30	man	2	1.3	0.7	6.1	1.8	1	6.7	1.7	1.7	7	1.3	1.3
Average		5.1	2.6	0.9	4.8	3.2	1.2	5.9	2.8	0.8	5.6	3.4	1.3
SD		2.9	2.7	1.6	2.5	3.0	2.1	2.9	2.7	1.5	2.6	3.1	2.1

Table S2 Results of significance tests with multiple comparison analyses performed by Friedman's method with adjustment by Bonferroni's method.

(1) Attraction

	Test statistic	Std. Error	Std.test statistic	Sig.	*p* value Adj. Sig.
$\underline{A}^{T}$-$\underline{A}^{TV}$	-.850	.931	-.913	.361	1.000
$\underline{A}^{T}$-$\underline{A}^{TA}$	-1.250	.931	-1.343	.179	1.000
$\underline{A}^{T}$-$\underline{A}^{TVA}$	-1.967	.931	-2.113	.035	1.000
$\underline{A}^{T}$-$\underline{S}^{T}$	4.233	.931	4.547	.000	.000
$\underline{A}^{T}$-$\underline{F}^{T}$	4.383	.931	4.708	.000	.000
$\underline{A}^{T}$-$\underline{F}^{TA}$	-5.000	.931	-5.371	.000	.000
$\underline{A}^{T}$-$\underline{S}^{TA}$	-5.950	.931	-6.391	.000	.000
$\underline{A}^{T}$-$\underline{F}^{TV}$	-6.117	.931	-6.570	.000	.000
$\underline{A}^{T}$-$\underline{S}^{TV}$	-6.767	.931	-7.269	.000	.000
$\underline{A}^{T}$-$\underline{F}^{TVA}$	-7.150	.931	-7.680	.000	.000
$\underline{A}^{T}$-$\underline{S}^{TVA}$	-8.933	.931	-9.588	.000	.000
$\underline{A}^{TV}$-$\underline{A}^{TA}$	-.400	.931	-.430	.667	1.000
$\underline{A}^{TV}$-$\underline{A}^{TVA}$	-1.117	.931	-1.189	.230	1.000
$\underline{A}^{TV}$-$\underline{S}^{T}$	3.383	.931	3.634	.000	.015
$\underline{A}^{TV}$-$\underline{F}^{T}$	3.533	.931	3.795	.000	.010
$\underline{A}^{TV}$-$\underline{F}^{TA}$	-4.150	.931	-4.458	.000	.001
$\underline{A}^{TV}$-$\underline{S}^{TA}$	-5.100	.931	-5.478	.000	.000
$\underline{A}^{TV}$-$\underline{F}^{TV}$	5.267	.931	5.657	.000	.000
$\underline{A}^{TV}$-$\underline{S}^{TV}$	5.917	.931	6.356	.000	.000
$\underline{A}^{TV}$-$\underline{F}^{TVA}$	-6.300	.931	-6.767	.000	.000
$\underline{A}^{TV}$-$\underline{S}^{TVA}$	-8.083	.931	-8.683	.000	.000
$\underline{A}^{TA}$-$\underline{A}^{TVA}$	-.717	.931	-.770	.441	1.000
$\underline{A}^{TA}$-$\underline{S}^{T}$	2.983	.931	3.205	.001	.089
$\underline{A}^{TA}$-$\underline{F}^{T}$	3.133	.931	3.366	.001	.050
$\underline{A}^{TA}$-$\underline{F}^{TA}$	3.750	.931	4.028	.000	.004
$\underline{A}^{TA}$-$\underline{S}^{TA}$	4.700	.931	5.049	.000	.000
$\underline{A}^{TA}$-$\underline{F}^{TV}$	4.867	.931	5.228	.000	.000
$\underline{A}^{TA}$-$\underline{S}^{TV}$	5.517	.931	5.926	.000	.000
$\underline{A}^{TA}$-$\underline{F}^{TVA}$	-5.900	.931	-6.336	.000	.000
$\underline{A}^{TA}$-$\underline{S}^{TVA}$	-7.683	.931	-8.253	.000	.000
$\underline{A}^{TVA}$-$\underline{S}^{T}$	2.267	.931	2.435	.015	.883
$\underline{A}^{TVA}$-$\underline{F}^{T}$	2.417	.931	2.596	.009	.625
$\underline{A}^{TVA}$-$\underline{F}^{TA}$	3.033	.931	3.258	.001	.074
$\underline{A}^{TVA}$-$\underline{S}^{TA}$	3.983	.931	4.279	.000	.001
$\underline{A}^{TVA}$-$\underline{F}^{TV}$	4.150	.931	4.458	.000	.001
$\underline{A}^{TVA}$-$\underline{S}^{TV}$	4.800	.931	5.156	.000	.000
$\underline{A}^{TVA}$-$\underline{F}^{TVA}$	5.183	.931	5.566	.000	.000
$\underline{A}^{TVA}$-$\underline{S}^{TVA}$	6.967	.931	7.483	.000	.000
$\underline{S}^{T}$-$\underline{F}^{T}$	-.150	.931	-.161	.872	1.000
$\underline{S}^{T}$-$\underline{F}^{TA}$	-.767	.931	-.824	.410	1.000
$\underline{S}^{T}$-$\underline{S}^{TA}$	-1.717	.931	-1.844	.065	1.000
$\underline{S}^{T}$-$\underline{F}^{TV}$	-1.883	.931	-2.023	.043	1.000
$\underline{S}^{T}$-$\underline{S}^{TV}$	-2.533	.931	-2.721	.007	.429
$\underline{S}^{T}$-$\underline{F}^{TVA}$	-2.917	.931	-3.133	.002	.114
$\underline{S}^{T}$-$\underline{S}^{TVA}$	-4.700	.931	-5.049	.000	.000
$\underline{F}^{T}$-$\underline{F}^{TA}$	-.617	.931	-.662	.508	1.000
$\underline{F}^{T}$-$\underline{S}^{TA}$	-1.567	.931	-1.683	.092	1.000
$\underline{F}^{T}$-$\underline{F}^{TV}$	-1.733	.931	-1.862	.063	1.000
$\underline{F}^{T}$-$\underline{S}^{TV}$	-2.383	.931	-2.560	.010	.691
$\underline{F}^{T}$-$\underline{F}^{TVA}$	-2.767	.931	-2.972	.003	.195
$\underline{F}^{T}$-$\underline{S}^{TVA}$	-4.550	.931	-4.887	.000	.000
$\underline{F}^{TA}$-$\underline{S}^{TA}$	.950	.931	1.020	.308	1.000
$\underline{F}^{TA}$-$\underline{F}^{TV}$	1.117	.931	1.199	.230	1.000
$\underline{F}^{TA}$-$\underline{S}^{TV}$	1.767	.931	1.898	.058	1.000
$\underline{F}^{TA}$-$\underline{F}^{TVA}$	-2.150	.931	-2.309	.021	1.000
$\underline{F}^{TA}$-$\underline{S}^{TVA}$	-3.933	.931	-4.225	.000	.002
$\underline{S}^{TA}$-$\underline{F}^{TV}$	.167	.931	.179	.858	1.000
$\underline{S}^{TA}$-$\underline{S}^{TV}$	.817	.931	.877	.380	1.000
$\underline{S}^{TA}$-$\underline{F}^{TVA}$	-1.200	.931	-1.289	.197	1.000
$\underline{S}^{TA}$-$\underline{S}^{TVA}$	-2.983	.931	-3.205	.001	.089
$\underline{F}^{TV}$-$\underline{S}^{TV}$	.650	.931	.696	.485	1.000
$\underline{F}^{TV}$-$\underline{F}^{TVA}$	-1.033	.931	-1.110	.267	1.000
$\underline{F}^{TV}$-$\underline{S}^{TVA}$	-2.817	.931	-3.026	.002	.164
$\underline{S}^{TV}$-$\underline{F}^{TVA}$	-.383	.931	-.412	.681	1.000
$\underline{S}^{TV}$-$\underline{S}^{TVA}$	-2.167	.931	-2.327	.020	1.000
$\underline{F}^{TVA}$-$\underline{S}^{TVA}$	1.783	.931	1.916	.055	1.000

(2) Humanity

	Test statistic	Std. Error	Std.test statistic	Sig.	p value Adj. Sig.
$\underline{A}^T$-$\underline{A}^{TV}$	-1.017	.931	-1.092	.275	1.000
$\underline{A}^T$-$\underline{A}^{TA}$	-1.067	.931	-1.146	.252	1.000
$\underline{A}^T$-$\underline{F}^T$	1.517	.931	1.628	.103	1.000
$\underline{A}^T$-$\underline{A}^{TVA}$	-1.900	.931	-2.041	.041	1.000
$\underline{A}^T$-$\underline{F}^{TA}$	-3.733	.931	-4.010	.000	.004
$\underline{A}^T$-$\underline{S}^T$	4.833	.931	5.192	.000	.000
$\underline{A}^T$-$\underline{F}^{TV}$	-5.033	.931	-5.407	.000	.000
$\underline{A}^T$-$\underline{S}^{TA}$	-6.100	.931	-6.552	.000	.000
$\underline{A}^T$-$\underline{F}^{TVA}$	-6.417	.931	-6.893	.000	.000
$\underline{A}^T$-$\underline{S}^{TV}$	-7.167	.931	-7.698	.000	.000
$\underline{A}^T$-$\underline{S}^{TVA}$	-8.417	.931	-9.041	.000	.000
$\underline{A}^{TV}$-$\underline{A}^{TA}$	-.050	.931	-.054	.957	1.000
$\underline{A}^{TV}$-$\underline{F}^T$	.500	.931	.537	.591	1.000
$\underline{A}^{TV}$-$\underline{A}^{TVA}$	-.883	.931	-.949	.343	1.000
$\underline{A}^{TV}$-$\underline{F}^{TA}$	-2.717	.931	-2.918	.004	.232
$\underline{A}^{TV}$-$\underline{S}^T$	3.817	.931	4.100	.000	.003
$\underline{A}^{TV}$-$\underline{F}^{TV}$	4.017	.931	4.315	.000	.001
$\underline{A}^{TV}$-$\underline{S}^{TA}$	-5.083	.931	-5.460	.000	.000
$\underline{A}^{TV}$-$\underline{F}^{TVA}$	-5.400	.931	-5.801	.000	.000
$\underline{A}^{TV}$-$\underline{S}^{TV}$	6.150	.931	6.608	.000	.000
$\underline{A}^{TV}$-$\underline{S}^{TVA}$	-7.400	.931	-7.948	.000	.000
$\underline{A}^{TA}$-$\underline{F}^T$	.450	.931	.483	.629	1.000
$\underline{A}^{TA}$-$\underline{A}^{TVA}$	-.833	.931	-.895	.371	1.000
$\underline{A}^{TA}$-$\underline{F}^{TA}$	2.667	.931	2.864	.004	.276
$\underline{A}^{TA}$-$\underline{S}^T$	3.767	.931	4.046	.000	.003
$\underline{A}^{TA}$-$\underline{F}^{TV}$	3.967	.931	4.261	.000	.001
$\underline{A}^{TA}$-$\underline{S}^{TA}$	5.033	.931	5.407	.000	.000
$\underline{A}^{TA}$-$\underline{F}^{TVA}$	-5.350	.931	-5.747	.000	.000
$\underline{A}^{TA}$-$\underline{S}^{TV}$	6.100	.931	6.552	.000	.000
$\underline{A}^{TA}$-$\underline{S}^{TVA}$	-7.350	.931	-7.895	.000	.000
$\underline{F}^T$-$\underline{A}^{TVA}$	-.383	.931	-.412	.681	1.000
$\underline{F}^T$-$\underline{F}^{TA}$	-2.217	.931	-2.381	.017	1.000
$\underline{F}^T$-$\underline{S}^T$	3.317	.931	3.563	.000	.024

	Test statistic	Std. Error	Std.test statistic	Sig.	p value Adj. Sig.
$\underline{F}^T$-$\underline{F}^{TV}$	-3.517	.931	-3.778	.000	.010
$\underline{F}^T$-$\underline{S}^{TA}$	-4.583	.931	-4.923	.000	.000
$\underline{F}^T$-$\underline{F}^{TVA}$	-4.900	.931	-5.263	.000	.000
$\underline{F}^T$-$\underline{S}^{TV}$	-5.650	.931	-6.069	.000	.000
$\underline{F}^T$-$\underline{S}^{TVA}$	-6.900	.931	-7.412	.000	.000
$\underline{A}^{TVA}$-$\underline{F}^{TA}$	1.833	.931	1.969	.049	1.000
$\underline{A}^{TVA}$-$\underline{S}^T$	2.933	.931	3.151	.002	.107
$\underline{A}^{TVA}$-$\underline{F}^{TV}$	3.133	.931	3.366	.001	.050
$\underline{A}^{TVA}$-$\underline{S}^{TA}$	4.200	.931	4.512	.000	.000
$\underline{A}^{TVA}$-$\underline{F}^{TVA}$	4.517	.931	4.852	.000	.000
$\underline{A}^{TVA}$-$\underline{S}^{TV}$	5.267	.931	5.657	.000	.000
$\underline{A}^{TVA}$-$\underline{S}^{TVA}$	6.517	.931	7.000	.000	.000
$\underline{F}^{TA}$-$\underline{S}^T$	1.100	.931	1.182	.237	1.000
$\underline{F}^{TA}$-$\underline{F}^{TV}$	1.300	.931	1.396	.163	1.000
$\underline{F}^{TA}$-$\underline{S}^{TA}$	2.367	.931	2.542	.011	.727
$\underline{F}^{TA}$-$\underline{F}^{TVA}$	-2.683	.931	-2.882	.004	.361
$\underline{F}^{TA}$-$\underline{S}^{TV}$	3.433	.931	3.688	.000	.015
$\underline{F}^{TA}$-$\underline{S}^{TVA}$	-4.683	.931	-5.031	.000	.000
$\underline{S}^T$-$\underline{F}^{TV}$	-.200	.931	-.215	.830	1.000
$\underline{S}^T$-$\underline{S}^{TA}$	-1.267	.931	-1.361	.174	1.000
$\underline{S}^T$-$\underline{F}^{TVA}$	-1.583	.931	-1.701	.089	1.000
$\underline{S}^T$-$\underline{S}^{TV}$	-2.333	.931	-2.506	.012	.806
$\underline{S}^T$-$\underline{S}^{TVA}$	-3.583	.931	-3.849	.000	.006
$\underline{F}^{TV}$-$\underline{S}^{TA}$	-1.067	.931	-1.146	.252	1.000
$\underline{F}^{TV}$-$\underline{F}^{TVA}$	-1.383	.931	-1.486	.137	1.000
$\underline{F}^{TV}$-$\underline{S}^{TV}$	2.133	.931	2.292	.022	1.000
$\underline{F}^{TV}$-$\underline{S}^{TVA}$	-3.383	.931	-3.634	.000	.016
$\underline{S}^{TA}$-$\underline{F}^{TVA}$	-.317	.931	-.340	.734	1.000
$\underline{S}^{TA}$-$\underline{S}^{TV}$	1.067	.931	1.146	.252	1.000
$\underline{S}^{TA}$-$\underline{S}^{TVA}$	-2.317	.931	-2.488	.013	.847
$\underline{F}^{TVA}$-$\underline{S}^{TV}$	.750	.931	.806	.420	1.000
$\underline{F}^{TVA}$-$\underline{S}^{TVA}$	2.000	.931	2.148	.032	1.000
$\underline{S}^{TV}$-$\underline{S}^{TVA}$	-1.250	.931	-1.343	.179	1.000

(3) Slight warmth

	Test statistic	Std. Error	Std.test statistic	Sig.	p value Adj. Sig.
$\underline{A}^{T}$-$\underline{A}^{TA}$	-.867	.931	-1.036	.299	1.000
$\underline{A}^{T}$-$\underline{A}^{TV}$	-1.167	.931	-1.253	.210	1.000
$\underline{A}^{T}$-$\underline{A}^{TVA}$	-2.033	.931	-2.184	.029	1.000
$\underline{A}^{T}$-$\underline{S}^{T}$	4.117	.931	4.422	.000	.001
$\underline{A}^{T}$-$\underline{F}^{T}$	4.550	.931	4.887	.000	.000
$\underline{A}^{T}$-$\underline{S}^{TA}$	-5.000	.931	-5.371	.000	.000
$\underline{A}^{T}$-$\underline{S}^{TV}$	-5.717	.931	-6.141	.000	.000
$\underline{A}^{T}$-$\underline{F}^{TA}$	-6.850	.931	-7.358	.000	.000
$\underline{A}^{T}$-$\underline{S}^{TVA}$	-7.267	.931	-7.806	.000	.000
$\underline{A}^{T}$-$\underline{F}^{TVA}$	-7.817	.931	-8.396	.000	.000
$\underline{A}^{T}$-$\underline{F}^{TV}$	-7.917	.931	-8.504	.000	.000
$\underline{A}^{TA}$-$\underline{A}^{TV}$	.200	.931	.215	.830	1.000
$\underline{A}^{TA}$-$\underline{A}^{TVA}$	-1.067	.931	-1.146	.252	1.000
$\underline{A}^{TA}$-$\underline{S}^{T}$	3.150	.931	3.384	.001	.047
$\underline{A}^{TA}$-$\underline{F}^{T}$	3.583	.931	3.849	.000	.006
$\underline{A}^{TA}$-$\underline{S}^{TA}$	4.033	.931	4.332	.000	.001
$\underline{A}^{TA}$-$\underline{S}^{TV}$	4.750	.931	5.102	.000	.000
$\underline{A}^{TA}$-$\underline{F}^{TA}$	5.883	.931	6.320	.000	.000
$\underline{A}^{TA}$-$\underline{S}^{TVA}$	-6.300	.931	-6.767	.000	.000
$\underline{A}^{TA}$-$\underline{F}^{TVA}$	-6.850	.931	-7.358	.000	.000
$\underline{A}^{TA}$-F^{TV}	6.950	.931	7.465	.000	.000
$\underline{A}^{TV}$-$\underline{A}^{TVA}$	-.867	.931	-.931	.352	1.000
$\underline{A}^{TV}$-$\underline{S}^{T}$	2.950	.931	3.169	.002	.101
$\underline{A}^{TV}$-$\underline{F}^{T}$	3.383	.931	3.634	.000	.016
$\underline{A}^{TV}$-$\underline{S}^{TA}$	-3.833	.931	-4.118	.000	.003
$\underline{A}^{TV}$-$\underline{S}^{TV}$	4.550	.931	4.887	.000	.000
$\underline{A}^{TV}$-$\underline{F}^{TA}$	-5.683	.931	-6.105	.000	.000
$\underline{A}^{TV}$-$\underline{S}^{TVA}$	-6.100	.931	-6.552	.000	.000
$\underline{A}^{TV}$-$\underline{F}^{TVA}$	-6.650	.931	-7.143	.000	.000
$\underline{A}^{TV}$-$\underline{F}^{TV}$	6.750	.931	7.251	.000	.000
$\underline{A}^{TVA}$-$\underline{S}^{T}$	2.083	.931	2.236	.025	1.000
$\underline{A}^{TVA}$-$\underline{F}^{T}$	2.517	.931	2.703	.007	.463
$\underline{A}^{TVA}$-$\underline{S}^{TA}$	2.967	.931	3.187	.001	.095

	Test statistic	Std. Error	Std.test statistic	Sig.	p value Adj. Sig.
$\underline{A}^{TVA}$-$\underline{S}^{TV}$	3.683	.931	3.957	.000	.003
$\underline{A}^{TVA}$-$\underline{F}^{TA}$	4.817	.931	5.174	.000	.000
$\underline{A}^{TVA}$-$\underline{S}^{TVA}$	5.233	.931	5.622	.000	.000
$\underline{A}^{TVA}$-$\underline{F}^{TVA}$	5.783	.931	6.212	.000	.000
$\underline{A}^{TVA}$-$\underline{F}^{TV}$	5.883	.931	6.320	.000	.000
$\underline{S}^{T}$-$\underline{F}^{T}$	-.433	.931	-.465	.642	1.000
$\underline{S}^{T}$-$\underline{S}^{TA}$	-.883	.931	-.949	.343	1.000
$\underline{S}^{T}$-$\underline{S}^{TV}$	-1.600	.931	-1.719	.086	1.000
$\underline{S}^{T}$-$\underline{F}^{TA}$	-2.733	.931	-2.936	.003	.219
$\underline{S}^{T}$-$\underline{S}^{TVA}$	-3.150	.931	-3.384	.001	.047
$\underline{S}^{T}$-$\underline{F}^{TVA}$	-3.700	.931	-3.974	.000	.005
$\underline{S}^{T}$-$\underline{F}^{TV}$	-3.800	.931	-4.082	.000	.003
$\underline{F}^{T}$-$\underline{S}^{TA}$	-.450	.931	-.483	.629	1.000
$\underline{F}^{T}$-$\underline{S}^{TV}$	-1.167	.931	-1.253	.210	1.000
$\underline{F}^{T}$-$\underline{F}^{TA}$	-2.300	.931	-2.471	.013	.590
$\underline{F}^{T}$-$\underline{S}^{TVA}$	-2.717	.931	-2.918	.004	.232
$\underline{F}^{T}$-$\underline{F}^{TVA}$	-3.267	.931	-3.509	.000	.030
$\underline{F}^{T}$-$\underline{F}^{TV}$	-3.367	.931	-3.616	.000	.020
$\underline{S}^{TA}$-$\underline{S}^{TV}$	.717	.931	.770	.441	1.000
$\underline{S}^{TA}$-$\underline{F}^{TA}$	-1.850	.931	-1.987	.047	1.000
$\underline{S}^{TA}$-$\underline{S}^{TVA}$	-2.267	.931	-2.435	.015	.983
$\underline{S}^{TA}$-$\underline{F}^{TVA}$	-2.817	.931	-3.026	.002	.164
$\underline{S}^{TA}$-$\underline{F}^{TV}$	2.917	.931	3.133	.002	.114
$\underline{S}^{TV}$-$\underline{F}^{TA}$	-1.133	.931	-1.217	.223	1.000
$\underline{S}^{TV}$-$\underline{S}^{TVA}$	-1.550	.931	-1.665	.096	1.000
$\underline{S}^{TV}$-$\underline{F}^{TVA}$	-2.100	.931	-2.256	.024	1.000
$\underline{S}^{TV}$-$\underline{F}^{TV}$	-2.200	.931	-2.363	.018	1.000
$\underline{F}^{TA}$-$\underline{S}^{TV}$	-.417	.931	-.448	.654	1.000
$\underline{F}^{TA}$-$\underline{F}^{TVA}$	-.967	.931	-1.036	.299	1.000
$\underline{F}^{TA}$-$\underline{F}^{TV}$	1.067	.931	1.146	.252	1.000
$\underline{S}^{TVA}$-$\underline{F}^{TVA}$	-.550	.931	-.591	.555	1.000
$\underline{S}^{TVA}$-$\underline{F}^{TV}$	.650	.931	.698	.485	1.000
$\underline{F}^{TVA}$-$\underline{F}^{TV}$	.100	.931	.107	.914	1.000

Table S3 Spearman's rank correlation coefficient between attraction, humanity, slight warmth (*nukumori*), tactile factors, mechanical factors, and physical factors.

(a) T condition.

		Attraction	Humanity	Slight warm (*nukumori*)	Warm	Cold	Soft	Hard	Smooth	Rough	Slippery	Sticky	Dry	Moist	F_z^{max}	F_z^{ave}	t	Sa	Sz	Young's modulus	qmax	Thermal conductivity	Surface tension
Attraction	Correlation coefficient	1.000	.640**	.796**	.524**	-.249*	.560**	-.632**	.557**	-.555**	.467**	0.054	-.242*	.364**	0.011	-0.083	0.110	0.036	0.036	-.550**	-0.036	-.550**	-.514**
	Significant probability (two-tailed)		0.000	0.000	0.000	0.018	0.000	0.000	0.000	0.000	0.000	0.610	0.022	0.000	0.918	0.437	0.302	0.734	0.734	0.000	0.734	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Humanity	Correlation coefficient	.640**	1.000	.625**	.258*	0.065	.256*	-.324**	.578**	-.357**	.433**	0.206	-.211*	.435**	-0.010	-0.049	0.183	-.419**	-.419**	-0.168	.419**	-0.168	-.587**
	Significant probability (two-tailed)	0.000		0.000	0.014	0.541	0.015	0.002	0.000	0.001	0.000	0.052	0.046	0.000	0.929	0.644	0.084	0.000	0.000	0.114	0.000	0.114	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Slight warm (*nukumori*)	Correlation coefficient	.796**	.625**	1.000	.624**	-.310**	.548**	-.621**	.588**	-.533**	.477**	0.076	-.245*	.447**	-0.020	-0.092	0.046	0.038	0.038	-.586**	-0.038	-.586**	-.548**
	Significant probability (two-tailed)	0.000	0.000		0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.474	0.020	0.000	0.853	0.389	0.670	0.723	0.723	0.000	0.723	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Warm	Correlation coefficient	.524**	.258*	.624**	1.000	-.499**	.689**	-.696**	.397**	-.601**	.324**	-0.109	-.259*	.362**	-0.013	-0.122	-0.014	.378**	.378**	-.757**	-.378**	-.757**	-.379**
	Significant probability (two-tailed)	0.000	0.014	0.000		0.000	0.000	0.000	0.000	0.000	0.002	0.307	0.014	0.000	0.903	0.251	0.897	0.000	0.000	0.000	0.000	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Cold	Correlation coefficient	-.249*	0.065	-.310**	-.499**	1.000	-.517**	.505**	-0.177	.477**	-0.010	0.016	.393**	-0.004	-0.029	0.069	-0.001	-.378**	-.378**	.513**	.378**	.513**	0.136
	Significant probability (two-tailed)	0.018	0.541	0.003	0.000		0.000	0.000	0.096	0.000	0.928	0.881	0.000	0.968	0.788	0.517	0.994	0.000	0.000	0.000	0.000	0.000	0.202
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Soft	Correlation coefficient	.560**	.256*	.548**	.689**	-.517**	1.000	-.901**	.563**	-.751**	.378**	-0.147	-.468**	.344**	0.024	-0.068	0.057	.261*	.261*	-.817**	-.261*	-.817**	-.556**
	Significant probability (two-tailed)	0.000	0.015	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.166	0.000	0.001	0.822	0.525	0.591	0.013	0.013	0.000	0.013	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Hard	Correlation coefficient	-.632**	-.324**	-.621**	-.696**	.505**	-.901**	1.000	-.564**	.784**	-.413**	0.112	.410**	-.338**	-0.065	0.014	-0.050	-.233*	-.233*	.808**	.233*	.808**	.575**
	Significant probability (two-tailed)	0.000	0.002	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.294	0.000	0.001	0.545	0.893	0.642	0.027	0.027	0.000	0.027	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Smooth	Correlation coefficient	.557**	.578**	.588**	.397**	-0.177	.563**	-.564**	1.000	-.631**	.617**	0.032	-.432**	.480**	0.070	-0.075	0.047	-.224*	-.224*	-.538**	.224*	-.538**	-.762**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.096	0.000	0.000		0.000	0.000	0.768	0.000	0.000	0.511	0.481	0.661	0.034	0.034	0.000	0.034	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Rough	Correlation coefficient	-.555**	-.357**	-.533**	-.601**	.477**	-.751**	.784**	-.631**	1.000	-.346**	0.064	.584**	-.356**	-0.136	0.008	0.160	-0.039	-0.039	.742**	0.039	.742**	.704**
	Significant probability (two-tailed)	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000		0.001	0.551	0.000	0.001	0.200	0.940	0.131	0.718	0.718	0.000	0.718	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Slippery	Correlation coefficient	.467**	.433**	.477**	.324**	-0.010	.378**	-.413**	.617**	-.346**	1.000	-0.122	-0.086	.299**	0.173	0.011	0.011	-0.012	-0.012	-.479**	0.012	-.479**	-.491**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.002	0.928	0.000	0.000	0.000	0.001		0.252	0.421	0.004	0.102	0.917	0.488	0.909	0.909	0.000	0.909	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Sticky	Correlation coefficient	0.054	0.206	0.076	-0.109	0.016	-0.147	0.112	0.032	0.064	-0.122	1.000	-.214*	.302**	0.077	0.022	0.118	-.403**	-.403**	.265*	.403**	.265*	-0.139
	Significant probability (two-tailed)	0.610	0.052	0.474	0.307	0.881	0.166	0.294	0.768	0.551	0.252		0.043	0.004	0.472	0.837	0.269	0.000	0.000	0.012	0.000	0.012	0.193
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Dry	Correlation coefficient	-.242*	-.211*	-.245*	-.259*	.393**	-.468**	.410**	-.432**	.584**	-0.086	-.214*	1.000	-.553**	-0.195	-0.117	0.061	.226*	.226*	.359**	-.226*	.359**	.586**
	Significant probability (two-tailed)	0.022	0.046	0.020	0.014	0.000	0.000	0.000	0.000	0.000	0.421	0.043		0.000	0.066	0.272	0.570	0.032	0.032	0.001	0.032	0.001	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Moist	Correlation coefficient	.364**	.435**	.447**	.362**	-0.004	.344**	-.338**	.480**	-.356**	.299**	.302**	-.553**	1.000	0.047	-0.106	0.005	-.317**	-.317**	-.262*	.317**	-.262*	-.579**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.968	0.001	0.001	0.000	0.001	0.004	0.004	0.000		0.658	0.321	0.960	0.002	0.002	0.013	0.002	0.013	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
F_z^{max}	Correlation coefficient	0.011	-0.010	-0.020	-0.013	-0.029	0.024	-0.065	0.070	-0.136	0.173	0.077	-0.195	0.047	1.000	.637**	-0.172	-0.141	-0.141	-0.105	0.141	-0.105	-.246*
	Significant probability (two-tailed)	0.918	0.929	0.853	0.903	0.788	0.822	0.545	0.511	0.200	0.102	0.472	0.066	0.658		0.000	0.106	0.184	0.184	0.325	0.184	0.325	0.019
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
F_z^{ave}	Correlation coefficient	-0.083	-0.049	-0.092	-0.122	0.069	-0.068	0.014	-0.075	0.008	0.011	0.022	-0.117	-0.106	.637**	1.000	-0.056	-0.040	-0.040	0.000	0.040	0.000	-0.040
	Significant probability (two-tailed)	0.437	0.644	0.389	0.251	0.517	0.525	0.893	0.481	0.940	0.917	0.837	0.272	0.321	0.000		0.598	0.707	0.707	1.000	0.707	1.000	0.707
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
t	Correlation coefficient	0.110	0.183	0.046	-0.014	-0.001	0.057	-0.050	0.047	0.160	0.074	0.118	0.061	0.005	-0.172	-0.056	1.000	-0.112	-0.112	0.034	0.112	0.034	-0.079
	Significant probability (two-tailed)	0.302	0.084	0.670	0.897	0.994	0.591	0.642	0.661	0.131	0.488	0.269	0.570	0.960	0.106	0.598		0.292	0.292	0.752	0.292	0.752	0.461
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Sa	Correlation coefficient	0.036	-.419**	0.038	.378**	-.378**	.261*	-.233*	-.224*	-0.039	-0.012	-.403**	.226*	-.317**	-0.141	-0.040	-0.112	1.000	1.000	-.500**	-1.000**	-.500**	.500**
	Significant probability (two-tailed)	0.734	0.000	0.723	0.000	0.000	0.013	0.027	0.034	0.718	0.909	0.000	0.032	0.002	0.184	0.707	0.292			0.000	0.000	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Sz	Correlation coefficient	0.036	-.419**	0.038	.378**	-.378**	.261*	-.233*	-.224*	-0.039	-0.012	-.403**	.226*	-.317**	-0.141	-0.040	-0.112	1.000	1.000	-.500**	-1.000**	-.500**	.500**
	Significant probability (two-tailed)	0.734	0.000	0.723	0.000	0.000	0.013	0.027	0.034	0.718	0.909	0.000	0.032	0.002	0.184	0.707	0.292			0.000	0.000	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Young's modulus	Correlation coefficient	-.550**	-0.168	-.586**	-.757**	.513**	-.817**	.808**	-.538**	.742**	-.479**	.265*	.359**	-.262*	-0.105	0.000	0.034	-.500**	-.500**	1.000	.500**	1.000**	.500**
	Significant probability (two-tailed)	0.000	0.114	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.001	0.013	0.325	1.000	0.752	0.000	0.000		0.000		0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
qmax	Correlation coefficient	-0.036	.419**	-0.038	-.378**	.378**	-.261*	.233*	.224*	0.039	0.012	.403**	-.226*	.317**	0.141	0.040	0.112	-1.000**	-1.000**	.500**	1.000	.500**	-.500**
	Significant probability (two-tailed)	0.734	0.000	0.723	0.000	0.000	0.013	0.027	0.034	0.718	0.909	0.000	0.032	0.002	0.184	0.707	0.292	0.000	0.000	0.000		0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Thermal conductivity	Correlation coefficient	-.550**	-0.168	-.586**	-.757**	.513**	-.817**	.808**	-.538**	.742**	-.479**	.265*	.359**	-.262*	-0.105	0.000	0.034	-.500**	-.500**	1.000**	.500**	1.000	.500**
	Significant probability (two-tailed)	0.000	0.114	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.001	0.013	0.325	1.000	0.752	0.000	0.000	0.000	0.000		0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Surface tension	Correlation coefficient	-.514**	-.587**	-.548**	-.379**	0.136	-.556**	.575**	-.762**	.704**	-.491**	-0.139	.586**	-.579**	-.246*	-0.040	-0.079	.500**	.500**	.500**	-.500**	.500**	1.000
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.202	0.000	0.000	0.000	0.000	0.000	0.193	0.000	0.000	0.019	0.707	0.461	0.000	0.000	0.000	0.000	0.000	
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90

(b) TV condition

		Attraction	Humanity	Slight warm (nukumori)	Warm	Cold	Soft	Hard	Smooth	Rough	Slippery	Sticky	Dry	Moist	$F_3{}^{max}$	$F_3{}^{ave}$	t	Sa	Sz	Young's modulus	qmax	Thermal conductivity	Surface tension
Attraction	Correlation coefficient	1.000	.788**	.794**	.576**	-0.172	.665**	-.602**	.667**	-.603**	.417**	0.135	-.452**	.434**	0.016	0.076	0.179	-0.030	-0.030	-.603**	0.030	-.603**	-.633**
	Significant probability (two-tailed)		0.000	0.000	0.000	0.105	0.000	0.000	0.000	0.000	0.000	0.204	0.000	0.000	0.879	0.479	0.091	0.776	0.776	0.000	0.776	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Humanity	Correlation coefficient	.788**	1.000	.669**	.440**	-0.098	.543**	-.471**	.760**	-.581**	.551**	.241*	-.501**	.368**	0.119	.217*	.273**	-.263*	-.263*	-.465**	.263*	-.465**	-.728**
	Significant probability (two-tailed)	0.000		0.000	0.000	0.359	0.000	0.000	0.000	0.000	0.000	0.022	0.000	0.000	0.264	0.040	0.009	0.012	0.012	0.000	0.012	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Slight warm (nukumori)	Correlation coefficient	.794**	.669**	1.000	.817**	-.391**	.682**	-.603**	.607**	-.576**	.510**	0.044	-.361**	.431**	0.020	0.072	0.141	.231*	.231*	-.711**	-.231*	-.711**	-.480**
	Significant probability (two-tailed)	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.682	0.000	0.000	0.851	0.499	0.185	0.028	0.028	0.000	0.028	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Warm	Correlation coefficient	.576**	.440**	.817**	1.000	-.446**	.636**	-.578**	.470**	-.487**	.395**	-0.024	-.294**	.398**	-0.018	0.072	-0.002	.366**	.366**	-.736**	-.366**	-.736**	-.369**
	Significant probability (two-tailed)	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.819	0.005	0.000	0.869	0.498	0.986	0.000	0.000	0.000	0.000	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Cold	Correlation coefficient	-0.172	-0.098	-.391**	-.446**	1.000	-.480**	.424**	-0.093	.421**	0.056	0.089	0.196	0.115	-0.101	-0.124	-0.048	-.355**	-.355**	.484**	.355**	.484**	0.130
	Significant probability (two-tailed)	0.105	0.359	0.000	0.000		0.000	0.000	0.381	0.000	0.599	0.405	0.063	0.281	0.343	0.246	0.650	0.001	0.001	0.000	0.001	0.000	0.224
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Soft	Correlation coefficient	.665**	.543**	.682**	.636**	-.480**	1.000	-.830**	.600**	-.814**	.382**	-0.016	-.569**	.321**	0.064	0.195	0.083	0.157	0.157	-.782**	-0.157	-.782**	-.625**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.880	0.000	0.002	0.547	0.066	0.439	0.140	0.140	0.000	0.140	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Hard	Correlation coefficient	-.602**	-.471**	-.603**	-.578**	.424**	-.830**	1.000	-.566**	.768**	-.386**	0.062	.520**	-.287**	-0.049	-0.190	-0.134	-0.181	-0.181	.758**	0.181	.758**	.577**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.560	0.000	0.006	0.644	0.073	0.209	0.088	0.088	0.000	0.088	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Smooth	Correlation coefficient	.667**	.760**	.607**	.470**	-0.093	.600**	-.566**	1.000	-.669**	.696**	0.132	-.519**	.409**	0.170	.268*	0.144	-.242*	-.242*	-.548**	.242*	-.548**	-.790**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.381	0.000	0.000		0.000	0.000	0.213	0.000	0.000	0.109	0.011	0.175	0.022	0.022	0.000	0.022	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Rough	Correlation coefficient	-.603**	-.581**	-.576**	-.487**	.421**	-.814**	.768**	-.669**	1.000	-.402**	-0.038	.682**	-.301**	-0.151	-.227*	-0.074	0.018	0.018	.713**	-0.018	.713**	.730**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.721	0.000	0.004	0.154	0.031	0.486	0.868	0.868	0.000	0.868	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Slippery	Correlation coefficient	.417**	.551**	.510**	.395**	0.056	.382**	-.386**	.696**	-.402**	1.000	-0.061	-.215*	.279**	0.034	0.129	0.195	-0.055	-0.055	-.461**	0.055	-.461**	-.516**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.599	0.000	0.000	0.000	0.000		0.565	0.042	0.008	0.753	0.226	0.065	0.604	0.604	0.000	0.604	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Sticky	Correlation coefficient	0.135	.241*	0.044	-0.024	0.089	-0.016	0.062	0.132	-0.038	-0.061	1.000	-.236*	.337**	0.064	0.052	0.152	-.348**	-.348**	0.119	.348**	0.119	-.230*
	Significant probability (two-tailed)	0.204	0.022	0.682	0.819	0.405	0.880	0.560	0.213	0.721	0.565		0.025	0.001	0.549	0.629	0.153	0.001	0.001	0.266	0.001	0.266	0.029
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Dry	Correlation coefficient	-.452**	-.501**	-.361**	-.294**	0.196	-.569**	.520**	-.519**	.682**	-.215*	-.236*	1.000	-.427**	-0.201	-.356**	0.076	0.203	0.203	.462**	-0.203	.462**	.665**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.005	0.063	0.000	0.000	0.000	0.000	0.042	0.025		0.000	0.058	0.001	0.476	0.055	0.055	0.000	0.055	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Moist	Correlation coefficient	.434**	.368**	.431**	.398**	0.115	.321**	-.287**	.409**	-.301**	.279**	.337**	-.427**	1.000	-0.020	-0.018	0.073	-.225*	-.225*	-.271**	.225*	-.271**	-.497**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.281	0.002	0.006	0.000	0.004	0.008	0.001	0.000		0.853	0.867	0.497	0.033	0.033	0.010	0.033	0.010	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
$F_3{}^{max}$	Correlation coefficient	0.016	0.119	0.020	-0.018	-0.101	0.064	-0.049	0.170	-0.151	0.034	0.064	-0.201	-0.020	1.000	.882**	-0.111	-0.144	-0.144	-0.037	0.144	-0.037	-0.180
	Significant probability (two-tailed)	0.879	0.264	0.851	0.869	0.343	0.547	0.644	0.109	0.154	0.753	0.549	0.058	0.853		0.000	0.299	0.177	0.177	0.731	0.177	0.731	0.089
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
$F_3{}^{ave}$	Correlation coefficient	0.076	.217*	0.072	0.072	-0.124	0.195	-0.190	.268*	-.227*	0.129	0.052	-.356**	-0.018	.882**	1.000	-0.136	-0.127	-0.127	-0.136	0.127	-0.136	-.263*
	Significant probability (two-tailed)	0.479	0.040	0.499	0.498	0.246	0.066	0.073	0.011	0.031	0.226	0.629	0.001	0.867	0.000		0.200	0.233	0.233	0.202	0.233	0.202	0.012
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
t	Correlation coefficient	0.179	.273**	0.141	-0.002	-0.048	0.083	-0.134	0.144	-0.074	0.195	0.152	0.076	0.073	-0.111	-0.136	1.000	-0.113	-0.113	-0.060	0.113	-0.060	-0.173
	Significant probability (two-tailed)	0.091	0.009	0.185	0.986	0.650	0.439	0.209	0.175	0.486	0.065	0.153	0.476	0.497	0.299	0.200		0.289	0.289	0.573	0.289	0.573	0.103
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Sa	Correlation coefficient	-0.030	-.263*	.231*	.366**	-.355**	0.157	-0.181	-.242*	0.018	-0.055	-.348**	0.203	-.225*	-0.144	-0.127	-0.113	1.000	1.000**	-.500**	-1.000**	-.500**	.500**
	Significant probability (two-tailed)	0.776	0.012	0.028	0.000	0.001	0.140	0.088	0.022	0.868	0.604	0.001	0.055	0.033	0.177	0.233	0.289			0.000		0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Sz	Correlation coefficient	-0.030	-.263*	.231*	.366**	-.355**	0.157	-0.181	-.242*	0.018	-0.055	-.348**	0.203	-.225*	-0.144	-0.127	-0.113	1.000**	1.000	-.500**	-1.000**	-.500**	.500**
	Significant probability (two-tailed)	0.776	0.012	0.028	0.000	0.001	0.140	0.088	0.022	0.868	0.604	0.001	0.055	0.033	0.177	0.233	0.289			0.000		0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Young's modulus	Correlation coefficient	-.603**	-.465**	-.711**	-.736**	.484**	-.782**	.758**	-.548**	.713**	-.461**	0.119	.462**	-.271**	-0.037	-0.136	-0.060	-.500**	-.500**	1.000	.500**	1.000**	.500**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.266	0.000	0.010	0.731	0.202	0.573	0.000	0.000		0.000		0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
qmax	Correlation coefficient	0.030	.263*	-.231*	-.366**	.355**	-0.157	0.181	.242*	-0.018	0.055	.348**	-0.203	.225*	0.144	0.127	0.113	-1.000**	-1.000**	.500**	1.000	.500**	-.500**
	Significant probability (two-tailed)	0.776	0.012	0.028	0.000	0.001	0.140	0.088	0.022	0.868	0.604	0.001	0.055	0.033	0.177	0.233	0.289			0.000		0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Thermal conductivity	Correlation coefficient	-.603**	-.465**	-.711**	-.736**	.484**	-.782**	.758**	-.548**	.713**	-.461**	0.119	.462**	-.271**	-0.037	-0.136	-0.060	-.500**	-.500**	1.000**	.500**	1.000	.500**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.266	0.000	0.010	0.731	0.202	0.573	0.000	0.000		0.000		0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Surface tension	Correlation coefficient	-.633**	-.728**	-.480**	-.369**	0.130	-.625**	.577**	-.790**	.730**	-.516**	-.230*	.665**	-.497**	-0.180	-.263*	-0.173	.500**	.500**	.500**	-.500**	.500**	1.000
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.224	0.000	0.000	0.000	0.000	0.000	0.029	0.000	0.000	0.089	0.012	0.103	0.000	0.000	0.000	0.000	0.000	
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90

(c) TA condition

		Attraction	Humanity	Slight warm (nukumori)	Warm	Cold	Soft	Hard	Smooth	Rough	Slippery	Sticky	Dry	Moist	F_2^{max}	F_2^{ave}	t	Sa	Sz	Young's modulus	qmax	Thermal conductivity	Surface tension
Attraction	Correlation coefficient	1.000	.699**	.661**	.385**	-0.060	.535**	-.533**	.687**	-.522**	.555**	0.062	-.314**	.389**	0.019	0.005	0.119	-0.034	-0.034	-.519**	0.034	-.519**	-.553**
	Significant probability (two-tailed)		0.000	0.000	0.000	0.576	0.000	0.000	0.000	0.000	0.000	0.560	0.003	0.000	0.859	0.962	0.263	0.748	0.748	0.000	0.748	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Humanity	Correlation coefficient	.699**	1.000	.562**	.291**	-0.071	.383**	-.413**	.655**	-.440**	.520**	.214*	-.360**	.463**	0.077	0.039	0.163	-.329**	-.329**	-.308**	.329**	-.308**	-.637**
	Significant probability (two-tailed)	0.000		0.000	0.005	0.504	0.000	0.000	0.000	0.000	0.000	0.043	0.000	0.000	0.473	0.714	0.125	0.002	0.002	0.003	0.002	0.003	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Slight warm (nukumori)	Correlation coefficient	.661**	.562**	1.000	.718**	-.384**	.714**	-.702**	.551**	-.595**	.436**	-0.004	-.337**	.492**	0.104	0.099	0.137	.197	.197	-.749**	-0.197	-.749**	-.552**
	Significant probability (two-tailed)	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.973	0.001	0.000	0.330	0.352	0.198	0.062	0.062	0.000	0.062	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Warm	Correlation coefficient	.385**	.291**	.718**	1.000	-.308**	.546**	-.539**	.339**	-.417**	.231*	0.084	-0.203	.313**	0.054	0.028	0.035	.330**	.330**	-.623**	-.330**	-.623**	-.292**
	Significant probability (two-tailed)	0.000	0.005	0.000		0.003	0.000	0.000	0.001	0.000	0.029	0.430	0.055	0.003	0.612	0.793	0.743	0.001	0.001	0.000	0.001	0.000	0.005
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Cold	Correlation coefficient	-0.060	-0.071	-.384**	-.308**	1.000	-.516**	.524**	-0.106	.379**	0.042	0.113	0.149	0.071	-0.201	-.261*	0.019	-.349**	-.349**	.485**	.349**	.485**	0.136
	Significant probability (two-tailed)	0.576	0.504	0.000	0.003		0.000	0.000	0.322	0.000	0.695	0.288	0.161	0.505	0.057	0.013	0.862	0.001	0.001	0.000	0.001	0.000	0.201
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Soft	Correlation coefficient	.535**	.383**	.714**	.546**	-.516**	1.000	-.875**	.622**	-.736**	.415**	-0.059	-.409**	.293**	0.032	0.148	0.045	.251*	.251*	-.819**	-.251*	-.819**	-.569**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.583	0.000	0.005	0.763	0.163	0.671	0.017	0.017	0.000	0.017	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Hard	Correlation coefficient	-.533**	-.413**	-.702**	-.539**	.524**	-.875**	1.000	-.600**	.761**	-.397**	-0.018	.403**	-.343**	-0.043	-0.142	-0.155	-0.164	-0.164	.791**	0.164	.791**	.627**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.868	0.000	0.001	0.686	0.181	0.144	0.123	0.123	0.000	0.123	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Smooth	Correlation coefficient	.687**	.655**	.551**	.339**	-0.106	.622**	-.600**	1.000	-.629**	.774**	0.127	-.342**	.463**	0.045	0.044	0.108	-0.181	-0.181	-.546**	0.181	-.546**	-.727**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.001	0.322	0.000	0.000		0.000	0.000	0.232	0.001	0.000	0.673	0.677	0.310	0.087	0.087	0.000	0.087	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Rough	Correlation coefficient	-.522**	-.440**	-.595**	-.417**	.379**	-.736**	.761**	-.629**	1.000	-.485**	-0.121	.522**	-.422**	-0.155	-.222*	-0.098	0.078	0.078	.676**	-0.078	.676**	.754**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.258	0.000	0.000	0.146	0.035	0.357	0.465	0.465	0.000	0.465	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Slippery	Correlation coefficient	.555**	.520**	.436**	.231*	0.042	.415**	-.397**	.774**	-.485**	1.000	0.112	-0.156	.426**	0.063	0.024	.217*	-0.115	-0.115	-.447**	0.115	-.447**	-.561**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.029	0.695	0.000	0.000	0.000	0.000		0.294	0.143	0.000	0.553	0.820	0.040	0.282	0.282	0.000	0.282	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Sticky	Correlation coefficient	0.062	.214*	-0.004	0.084	0.113	-0.059	-0.018	0.127	-0.121	0.112	1.000	-0.087	.337**	-0.048	-0.140	.249*	-.411**	-.411**	0.098	.411**	0.098	-.313**
	Significant probability (two-tailed)	0.560	0.043	0.973	0.430	0.288	0.583	0.868	0.232	0.258	0.294		0.418	0.001	0.651	0.190	0.018	0.000	0.000	0.358	0.000	0.358	0.003
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Dry	Correlation coefficient	-.314**	-.360**	-.337**	-0.203	0.149	-.409**	.403**	-.342**	.522**	-0.156	-0.087	1.000	-.496**	-0.105	-0.079	0.041	.288**	.288**	.314**	-.288**	.314**	.602**
	Significant probability (two-tailed)	0.003	0.000	0.001	0.055	0.161	0.000	0.000	0.001	0.000	0.143	0.418		0.000	0.326	0.460	0.702	0.006	0.006	0.003	0.006	0.003	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Moist	Correlation coefficient	.389**	.463**	.492**	.313**	0.071	.293**	-.343**	.463**	-.422**	.426**	.337**	-.496**	1.000	0.055	-0.007	0.060	-.347**	-.347**	-.262*	.347**	-.262*	-.609**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.003	0.505	0.005	0.001	0.000	0.000	0.000	0.001	0.000		0.608	0.951	0.572	0.001	0.001	0.013	0.001	0.013	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
F_2^{max}	Correlation coefficient	0.019	0.077	0.104	0.054	-0.201	0.032	-0.043	0.045	-0.155	0.063	-0.048	-0.105	0.055	1.000	.846**	0.047	-0.191	-0.191	-0.023	0.191	-0.023	-.213*
	Significant probability (two-tailed)	0.859	0.473	0.330	0.612	0.057	0.763	0.686	0.673	0.146	0.553	0.651	0.326	0.608		0.000	0.660	0.072	0.072	0.833	0.072	0.833	0.044
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
F_2^{ave}	Correlation coefficient	0.005	0.039	0.099	0.028	-.261*	0.148	-0.142	0.044	-.222*	0.024	-0.140	-0.079	-0.007	.846**	1.000	0.036	-0.094	-0.094	-0.132	0.094	-0.132	-.226*
	Significant probability (two-tailed)	0.962	0.714	0.352	0.793	0.013	0.163	0.181	0.677	0.035	0.820	0.190	0.460	0.951	0.000		0.739	0.379	0.379	0.214	0.379	0.214	0.032
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
t	Correlation coefficient	0.119	0.163	0.137	0.035	0.019	0.045	-0.155	0.108	-0.098	.217*	.249*	0.041	0.060	0.047	0.036	1.000	-0.155	-0.155	-0.070	0.155	-0.070	-.225*
	Significant probability (two-tailed)	0.263	0.125	0.198	0.743	0.862	0.671	0.144	0.310	0.357	0.040	0.018	0.702	0.572	0.660	0.739		0.144	0.144	0.514	0.144	0.514	0.033
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Sa	Correlation coefficient	-0.034	-.329**	0.197	.330**	-.349**	.251*	-0.164	-0.181	0.078	-0.115	-.411**	.288**	-.347**	-0.191	-0.094	-0.155	1.000	1.000**	-.500**	-1.000**	-.500**	.500**
	Significant probability (two-tailed)	0.748	0.002	0.062	0.001	0.001	0.017	0.123	0.087	0.465	0.282	0.000	0.006	0.001	0.072	0.379	0.144			0.000		0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Sz	Correlation coefficient	-0.034	-.329**	0.197	.330**	-.349**	.251*	-0.164	-0.181	0.078	-0.115	-.411**	.288**	-.347**	-0.191	-0.094	-0.155	1.000**	1.000	-.500**	-1.000**	-.500**	.500**
	Significant probability (two-tailed)	0.748	0.002	0.062	0.001	0.001	0.017	0.123	0.087	0.465	0.282	0.000	0.006	0.001	0.072	0.379	0.144			0.000		0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Young's modulus	Correlation coefficient	-.519**	-.308**	-.749**	-.623**	.485**	-.819**	.791**	-.546**	.676**	-.447**	0.098	.314**	-.262*	-0.023	-0.132	-0.070	-.500**	-.500**	1.000	.500**	1.000**	.500**
	Significant probability (two-tailed)	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.358	0.003	0.013	0.833	0.214	0.514	0.000	0.000		0.000		0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
qmax	Correlation coefficient	0.034	.329**	-0.197	-.330**	.349**	-.251*	0.164	0.181	-0.078	0.115	.411**	-.288**	.347**	0.191	0.094	0.155	-1.000**	-1.000**	.500**	1.000	.500**	-.500**
	Significant probability (two-tailed)	0.748	0.002	0.062	0.001	0.001	0.017	0.123	0.087	0.465	0.282	0.000	0.006	0.001	0.072	0.379	0.144			0.000		0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Thermal conductivity	Correlation coefficient	-.519**	-.308**	-.749**	-.623**	.485**	-.819**	.791**	-.546**	.676**	-.447**	0.098	.314**	-.262*	-0.023	-0.132	-0.070	-.500**	-.500**	1.000**	.500**	1.000	.500**
	Significant probability (two-tailed)	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.358	0.003	0.013	0.833	0.214	0.514	0.000	0.000	0.000	0.000		0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Surface tension	Correlation coefficient	-.553**	-.637**	-.552**	-.292**	0.136	-.569**	.627**	-.727**	.754**	-.561**	-.313**	.602**	-.609**	-.213*	-.226*	-.225*	.500**	.500**	.500**	-.500**	.500**	1.000
	Significant probability (two-tailed)	0.000	0.000	0.000	0.005	0.201	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.044	0.032	0.033	0.000	0.000	0.000	0.000	0.000	
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90

(d) TVA condition

		Attraction	Humanity	Slight warm (nukumori)	Warm	Cold	Soft	Hard	Smooth	Rough	Slippery	Sticky	Dry	Moist	F_s^{max}	F_s^{ave}	t	Sa	Sz	Young's modulus	qmax	Thermal conductivity	Surface tension
Attraction	Correlation coefficient	1.000	.867**	.764**	.580**	-.369**	.632**	-.639**	.667**	-.654**	.515**	0.150	-.562**	.507**	0.151	0.125	.291**	-0.181	-0.181	-.549**	0.181	-.549**	-.730**
	Significant probability (two-tailed)		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.155	0.241	0.005	0.088	0.088	0.000	0.088	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Humanity	Correlation coefficient	.867**	1.000	.732**	.489**	-.283**	.575**	-.589**	.686**	-.600**	.615**	.259*	-.490**	.390**	0.150	0.149	.332**	-.244*	-.244*	-.475**	.244*	-.475**	-.719**
	Significant probability (two-tailed)	0.000		0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.014	0.000	0.000	0.158	0.161	0.001	0.020	0.020	0.000	0.020	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Slight warm	Correlation coefficient	.764**	.732**	1.000	.789**	-.460**	.642**	-.569**	.662**	-.611**	.577**	0.053	-.541**	.461**	0.108	0.098	0.179	0.138	0.138	-.709**	-0.138	-.709**	-.571**
	Significant probability (two-tailed)	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.622	0.000	0.000	0.311	0.356	0.092	0.196	0.196	0.000	0.196	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Warm	Correlation coefficient	.580**	.489**	.789**	1.000	-.564**	.669**	-.504**	.480**	-.516**	.437**	-0.111	-.440**	.303**	0.067	0.122	0.127	.360**	.360**	-.756**	-.360**	-.756**	-.395**
	Significant probability (two-tailed)	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.296	0.000	0.004	0.530	0.253	0.234	0.000	0.000	0.000	0.000	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Cold	Correlation coefficient	-.369**	-.283**	-.460**	-.564**	1.000	-.497**	.470**	-.236*	.487**	-0.112	.213*	.380**	-0.033	-0.034	-0.056	-0.189	-.290**	-.290**	.555**	.290**	.555**	-.265*
	Significant probability (two-tailed)	0.000	0.007	0.000	0.000		0.000	0.000	0.025	0.000	0.295	0.043	0.000	0.755	0.753	0.603	0.074	0.006	0.006	0.000	0.006	0.000	0.012
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Soft	Correlation coefficient	.632**	.575**	.642**	.669**	-.497**	1.000	-.822**	.652**	-.749**	.487**	-0.039	-.658**	.382**	0.047	0.092	0.162	0.172	0.172	-.773**	-0.172	-.773**	-.601**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.717	0.000	0.000	0.662	0.390	0.126	0.105	0.105	0.000	0.105	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Hard	Correlation coefficient	-.639**	-.589**	-.569**	-.504**	.470**	-.822**	1.000	-.675**	.796**	-.472**	-0.011	.659**	-.426**	-0.017	-0.058	-.224*	0.014	0.014	.699**	-0.014	.699**	.713**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.915	0.000	0.000	0.877	0.589	0.034	0.896	0.896	0.000	0.896	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Smooth	Correlation coefficient	.667**	.686**	.662**	.480**	-.236*	.652**	-.675**	1.000	-.684**	.676**	0.167	-.548**	.548**	0.065	0.126	-.232*	-0.172	-0.172	-.571**	0.172	-.571**	-.743**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.025	0.000	0.000		0.000	0.000	0.115	0.000	0.000	0.542	0.236	0.028	0.106	0.106	0.000	0.106	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Rough	Correlation coefficient	-.654**	-.600**	-.611**	-.516**	.487**	-.749**	.796**	-.684**	1.000	-.515**	0.001	.711**	-.382**	-0.075	-0.111	-0.157	0.040	0.040	.684**	-0.040	.684**	.724**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.994	0.000	0.000	0.482	0.300	0.139	0.706	0.706	0.000	0.706	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Slippery	Correlation coefficient	.515**	.615**	.577**	.437**	-0.112	.487**	-.472**	.676**	-.515**	1.000	0.055	-.272**	.333**	0.078	-0.007	.268*	-0.007	-0.007	-.505**	0.007	-.505**	-.512**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.295	0.000	0.000	0.000	0.000		0.607	0.010	0.001	0.465	0.178	0.011	0.947	0.947	0.000	0.947	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Sticky	Correlation coefficient	0.150	.259*	0.053	-0.111	.213*	-0.039	-0.011	0.167	0.001	0.055	1.000	-0.116	.276**	-0.015	-0.025	0.020	-.443**	-.443**	.238*	.443**	.238*	-0.205
	Significant probability (two-tailed)	0.159	0.014	0.622	0.296	0.043	0.717	0.915	0.115	0.994	0.607		0.275	0.008	0.890	0.812	0.853	0.000	0.000	0.024	0.000	0.024	0.053
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Dry	Correlation coefficient	-.562**	-.490**	-.541**	-.440**	.380**	-.658**	.659**	-.548**	.711**	-.272**	-0.116	1.000	-.483**	-0.111	-0.118	-0.124	0.128	0.128	.554**	-0.128	.554**	.682**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.275		0.000	0.299	0.269	0.246	0.228	0.228	0.000	0.228	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Moist	Correlation coefficient	.507**	.390**	.461**	.303**	-0.033	.382**	-.426**	.548**	-.382**	.333**	.276**	-.483**	1.000	0.026	-0.038	0.038	-.286**	-.286**	-.297**	.286**	-.297**	-.583**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.004	0.755	0.000	0.000	0.000	0.000	0.001	0.008	0.000		0.809	0.719	0.723	0.006	0.006	0.004	0.006	0.004	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
F_s^{max}	Correlation coefficient	0.151	0.150	0.108	0.067	-0.034	0.047	-0.017	0.065	-0.075	0.078	-0.015	-0.111	0.026	1.000	.850**	0.015	-0.161	-0.161	-0.048	0.161	-0.048	-.210*
	Significant probability (two-tailed)	0.155	0.158	0.311	0.530	0.753	0.662	0.877	0.542	0.482	0.465	0.890	0.299	0.809		0.000	0.889	0.129	0.129	0.652	0.129	0.652	0.047
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
F_s^{ave}	Correlation coefficient	0.125	0.149	0.098	0.122	-0.056	0.092	-0.058	0.126	-0.111	0.143	-0.025	-0.118	-0.038	.850**	1.000	-0.079	-0.152	-0.152	-0.050	0.152	-0.050	-0.202
	Significant probability (two-tailed)	0.241	0.161	0.356	0.603	0.603	0.390	0.589	0.236	0.300	0.178	0.812	0.269	0.719	0.000		0.458	0.154	0.154	0.638	0.154	0.638	0.056
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
t	Correlation coefficient	.291**	.332**	0.179	0.127	-0.189	0.162	-.224*	-.232*	-0.157	.268*	0.020	-0.124	0.038	0.015	-0.079	1.000	-0.205	-0.205	-0.150	0.205	-0.150	-.355**
	Significant probability (two-tailed)	0.005	0.001	0.092	0.234	0.074	0.126	0.034	0.028	0.139	0.011	0.853	0.246	0.723	0.889	0.458		0.053	0.053	0.157	0.053	0.157	0.001
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Sa	Correlation coefficient	-0.181	-.244*	0.138	.360**	-.290**	0.172	0.014	-0.172	0.040	-0.007	-.443**	0.128	-.286**	-0.161	-0.152	-0.205	1.000	1.000**	-.500**	-1.000**	-.500**	.500**
	Significant probability (two-tailed)	0.088	0.020	0.196	0.000	0.006	0.105	0.896	0.106	0.706	0.947	0.000	0.228	0.006	0.129	0.154	0.053		0.000	0.000	0.000	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Sz	Correlation coefficient	-0.181	-.244*	0.138	.360**	-.290**	0.172	0.014	-0.172	0.040	-0.007	-.443**	0.128	-.286**	-0.161	-0.152	-0.205	1.000**	1.000	-.500**	-1.000**	-.500**	.500**
	Significant probability (two-tailed)	0.088	0.020	0.196	0.000	0.006	0.105	0.896	0.106	0.706	0.947	0.000	0.228	0.006	0.129	0.154	0.053	0.000		0.000	0.000	0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Young's modulus	Correlation coefficient	-.549**	-.475**	-.709**	-.756**	.555**	-.773**	.699**	-.571**	.684**	-.505**	.238*	.554**	-.297**	-0.048	-0.050	-0.150	-.500**	-.500**	1.000	.500**	1.000**	.500**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024	0.000	0.004	0.652	0.638	0.157	0.000	0.000		0.000		0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
qmax	Correlation coefficient	0.181	.244*	-0.138	-.360**	.290**	-0.172	-0.014	0.172	-0.040	0.007	.443**	-0.128	.286**	0.161	0.152	0.205	-1.000**	-1.000**	.500**	1.000	.500**	-.500**
	Significant probability (two-tailed)	0.088	0.020	0.196	0.000	0.006	0.105	0.896	0.106	0.706	0.947	0.000	0.228	0.006	0.129	0.154	0.053	0.000	0.000	0.000		0.000	0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Thermal conductivity	Correlation coefficient	-.549**	-.475**	-.709**	-.756**	.555**	-.773**	.699**	-.571**	.684**	-.505**	.238*	.554**	-.297**	-0.048	-0.050	-0.150	-.500**	-.500**	1.000**	.500**	1.000	.500**
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024	0.000	0.004	0.652	0.638	0.157	0.000	0.000		0.000		0.000
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Surface tension	Correlation coefficient	-.730**	-.719**	-.571**	-.395**	.265*	-.601**	.713**	-.743**	.724**	-.512**	-0.205	.682**	-.583**	-.210*	-0.202	-.355**	.500**	.500**	.500**	-.500**	.500**	1.000
	Significant probability (two-tailed)	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.053	0.000	0.000	0.047	0.056	0.001	0.000	0.000	0.000	0.000	0.000	
	Frequency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90

Table S4 Results of Friedman test for smooth, warm, and soft feels.

(1) Smoothness

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles 25th	50th (Median)
S	120	6.8075	2.17712	.10	10.00	5.7500	7.2500
F	120	4.9167	3.04400	.00	10.00	2.4000	5.2500
A	120	.2825	.53557	.00	2.40	.0000	.0000

Descriptive Statistics

	Percentiles 75th
S	8.2750
F	7.4750
A	.3000

Friedman Test

Ranks

	Mean Rank
S	2.68
F	2.26
A	1.05

Test Statistics[a]

N	120
Chi-Square	174.934
df	2
Asymp. Sig.	.000

a. Friedman Test

(b) Warmth

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	25th	50th (Median)
						Percentiles	
S	120	3.9308	2.65377	.00	10.00	1.9250	4.1500
F	120	6.9842	2.56158	.00	10.00	5.9250	7.5000
A	120	1.0433	1.66853	.00	7.80	.0000	.2000

Descriptive Statistics

	Percentiles
	75th
S	6.0500
F	8.9750
A	1.4000

Friedman Test

Ranks

	Mean Rank
S	2.05
F	2.75
A	1.20

Test Statistics[a]

N	120
Chi-Square	148.391
df	2
Asymp. Sig.	.000

a. Friedman Test

(c) Softness

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles 25th	Percentiles 50th (Median)
S	120	7.1108	2.63747	.00	10.00	6.4250	7.8500
F	120	8.6383	1.77557	2.20	10.00	7.9000	9.4500
A	120	.4292	.73099	.00	4.40	.0000	.0000

Descriptive Statistics

	Percentiles 75th
S	8.8000
F	10.0000
A	.6000

Friedman Test

Ranks

	Mean Rank
S	2.26
F	2.71
A	1.03

Test Statistics[a]

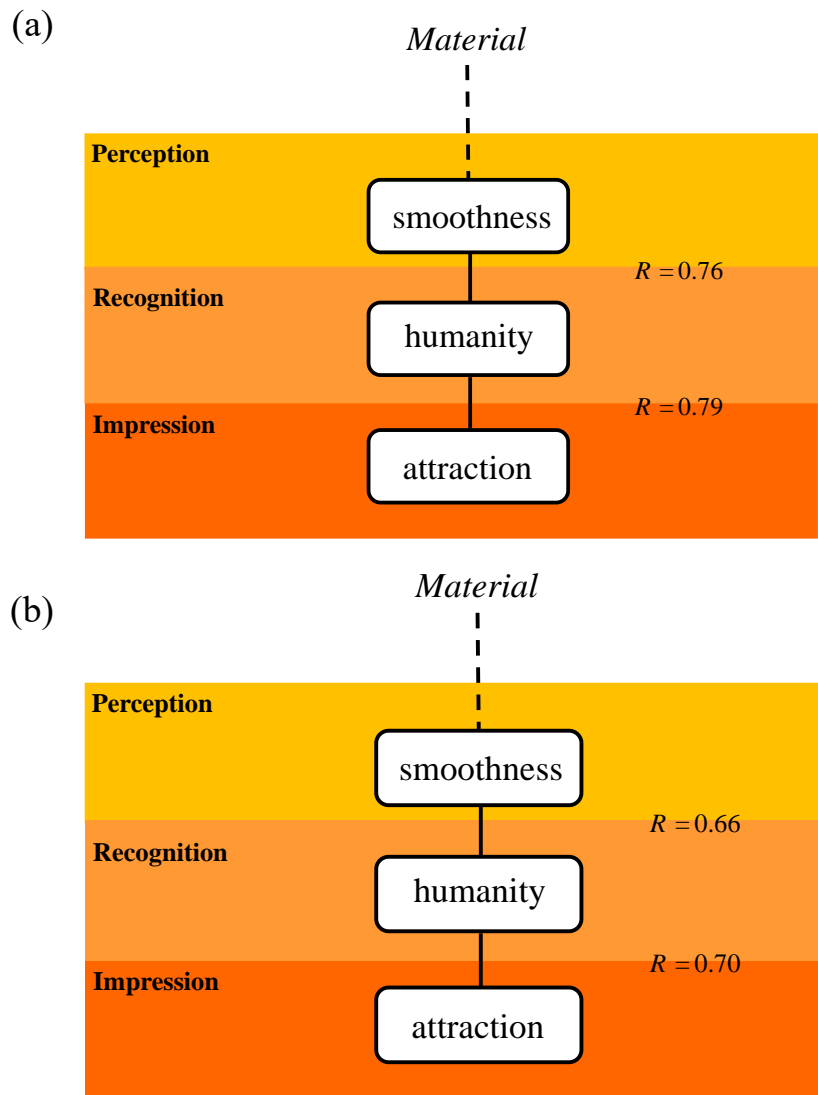| N	120
Chi-Square	184.333
df	2
Asymp. Sig.	.000

a. Friedman Test

Figure S1 Relationship diagram between attraction, humanity, tactile and physical factors under TV condition (a) and TA condition (b). Numeric values are rank correlation coefficient R between two factors. The dashed line indicates that certain effects are confirmed by Friedman test.