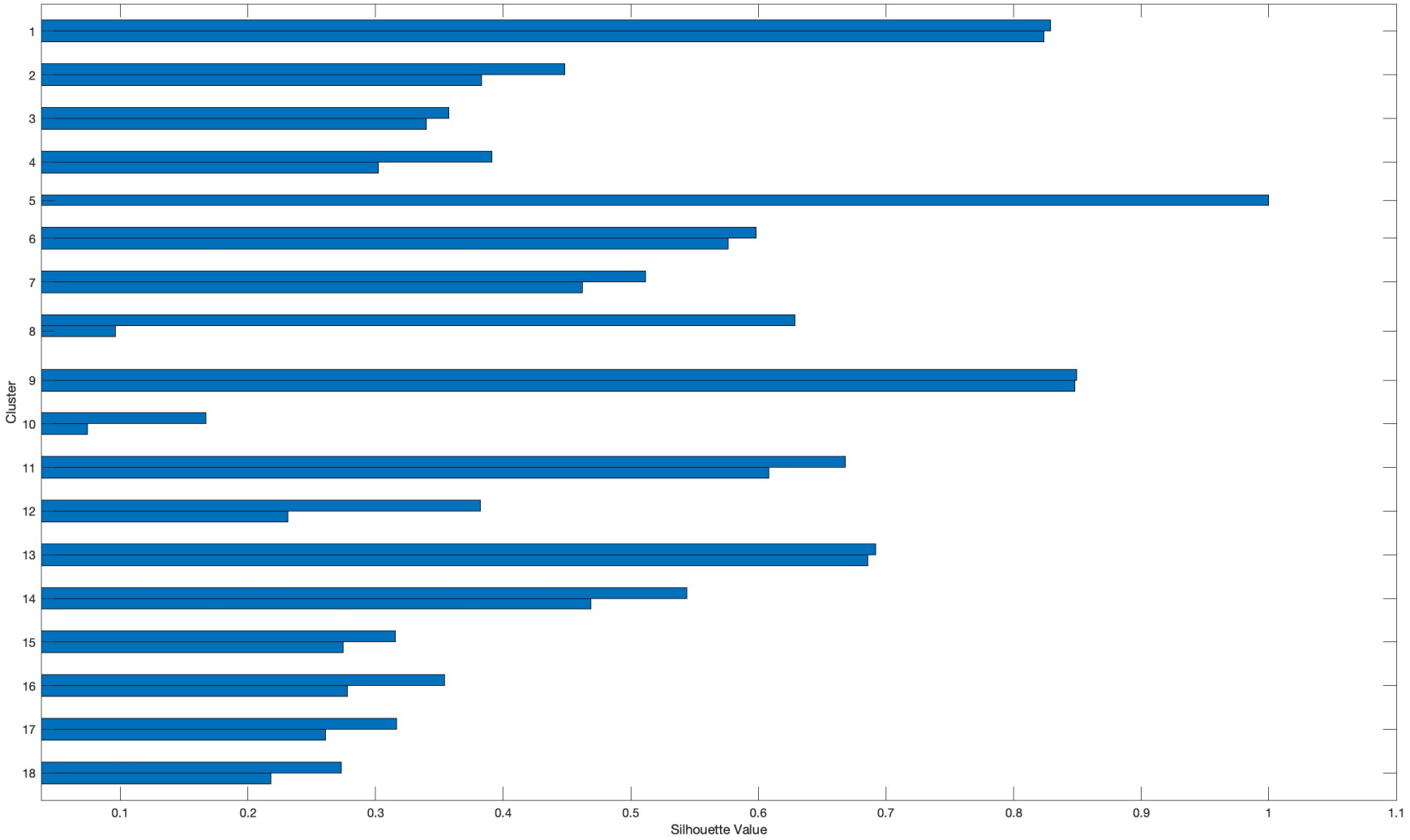
Synergy Matching

09/07/2021

Correspondence between PCs and clusters

Principal Component	Subject 3	Subject 4
PC 1	9	9
PC 2	2	1
PC 3	1	2
PC 4	16	10
PC 5	7	7
PC 6	6	6
PC 7	3	16
PC 8	15	17
PC 9	4	18
PC 10	18	3
PC 11	17	12
PC 12	13	4
PC 13	11	15
PC 14	10	13
PC 15	14	11
PC 16	12	14
PC 17	8	5
PC 18	8	8

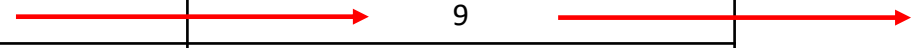
Silhouette values for clusters



- A silhouette value measures how similar a point is to points in its own cluster, when compared to points in other clusters. Values range from –1 to 1. A high silhouette value indicates that a point is well matched to its own cluster, and poorly matched to other clusters.
- Although it cannot be perceived, Cluster 8 has three elements.

Synergies construction

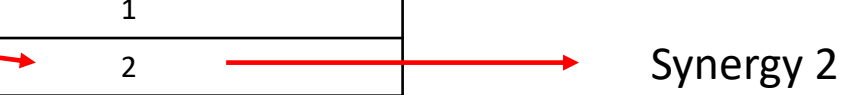
Principal Component	Subject 3	Subject 4
PC 1	9	9
PC 2	2	1
PC 3	1	2
PC 4	16	10
PC 5	7	7
PC 6	6	6
PC 7	3	16
PC 8	15	17
PC 9	4	18
PC 10	18	3
PC 11	17	12
PC 12	13	4
PC 13	11	15
PC 14	10	13
PC 15	14	11
PC 16	12	14
PC 17	8	5
PC 18	8	8



Synergy 1

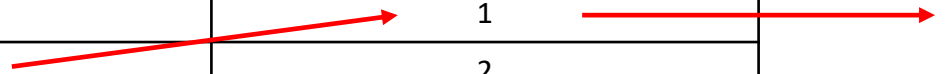
Synergies construction

Principal Component	Subject 3	Subject 4
PC 1	9	9
PC 2	2	1
PC 3	1	2
PC 4	16	10
PC 5	7	7
PC 6	6	6
PC 7	3	16
PC 8	15	17
PC 9	4	18
PC 10	18	3
PC 11	17	12
PC 12	13	4
PC 13	11	15
PC 14	10	13
PC 15	14	11
PC 16	12	14
PC 17	8	5
PC 18	8	8



Synergies construction

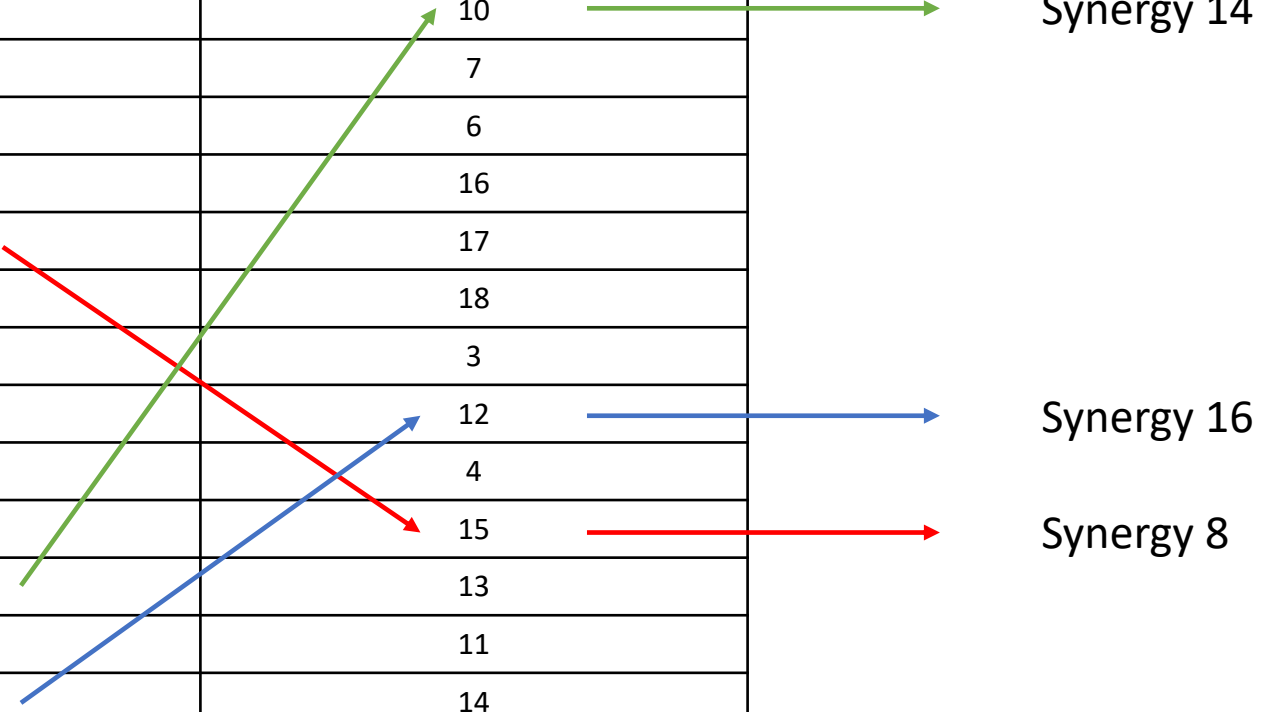
Principal Component	Subject 3	Subject 4
PC 1	9	9
PC 2	2	1
PC 3	1	2
PC 4	16	10
PC 5	7	7
PC 6	6	6
PC 7	3	16
PC 8	15	17
PC 9	4	18
PC 10	18	3
PC 11	17	12
PC 12	13	4
PC 13	11	15
PC 14	10	13
PC 15	14	11
PC 16	12	14
PC 17	8	5
PC 18	8	8



Synergy 3

Synergies construction

Principal Component	Subject 3	Subject 4
PC 1	9	9
PC 2	2	1
PC 3	1	2
PC 4	16	10
PC 5	7	7
PC 6	6	6
PC 7	3	16
PC 8	15	17
PC 9	4	18
PC 10	18	3
PC 11	17	12
PC 12	13	4
PC 13	11	15
PC 14	10	13
PC 15	14	11
PC 16	12	14
PC 17	8	5
PC 18	8	8



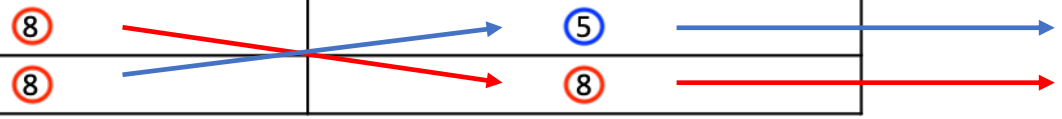
Synergies construction

Principal Component	Subject 3	Subject 4
PC 1	9	9
PC 2	2	1
PC 3	1	2
PC 4	16	10
PC 5	7	7
PC 6	6	6
PC 7	3	16
PC 8	15	17
PC 9	4	18
PC 10	18	3
PC 11	17	12
PC 12	13	4
PC 13	11	15
PC 14	10	13
PC 15	14	11
PC 16	12	14
PC 17	8	5
PC 18	8	8

- Cluster 8 has 3 elements, but one of them (Subject 3 PC 18) has a silhouette score close to 0.
- Cluster 5 has only one element (subject 4 PC 17).

Synergies construction

Principal Component	Subject 3	Subject 4
PC 1	9	9
PC 2	2	1
PC 3	1	2
PC 4	16	10
PC 5	7	7
PC 6	6	6
PC 7	3	16
PC 8	15	17
PC 9	4	18
PC 10	18	3
PC 11	17	12
PC 12	13	4
PC 13	11	15
PC 14	10	13
PC 15	14	11
PC 16	12	14
PC 17	8	5
PC 18	8	8



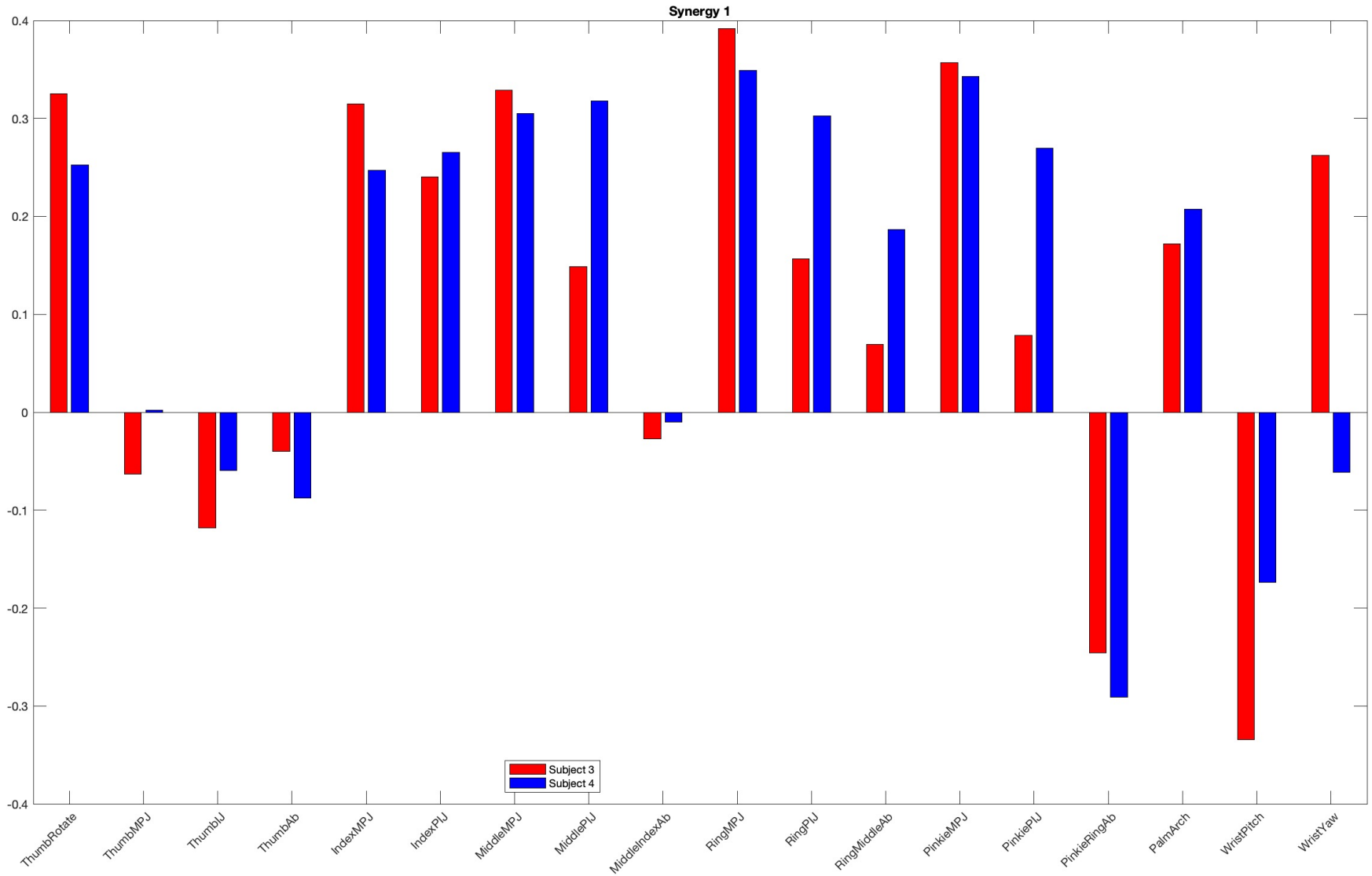
Synergy 18

Synergy 17

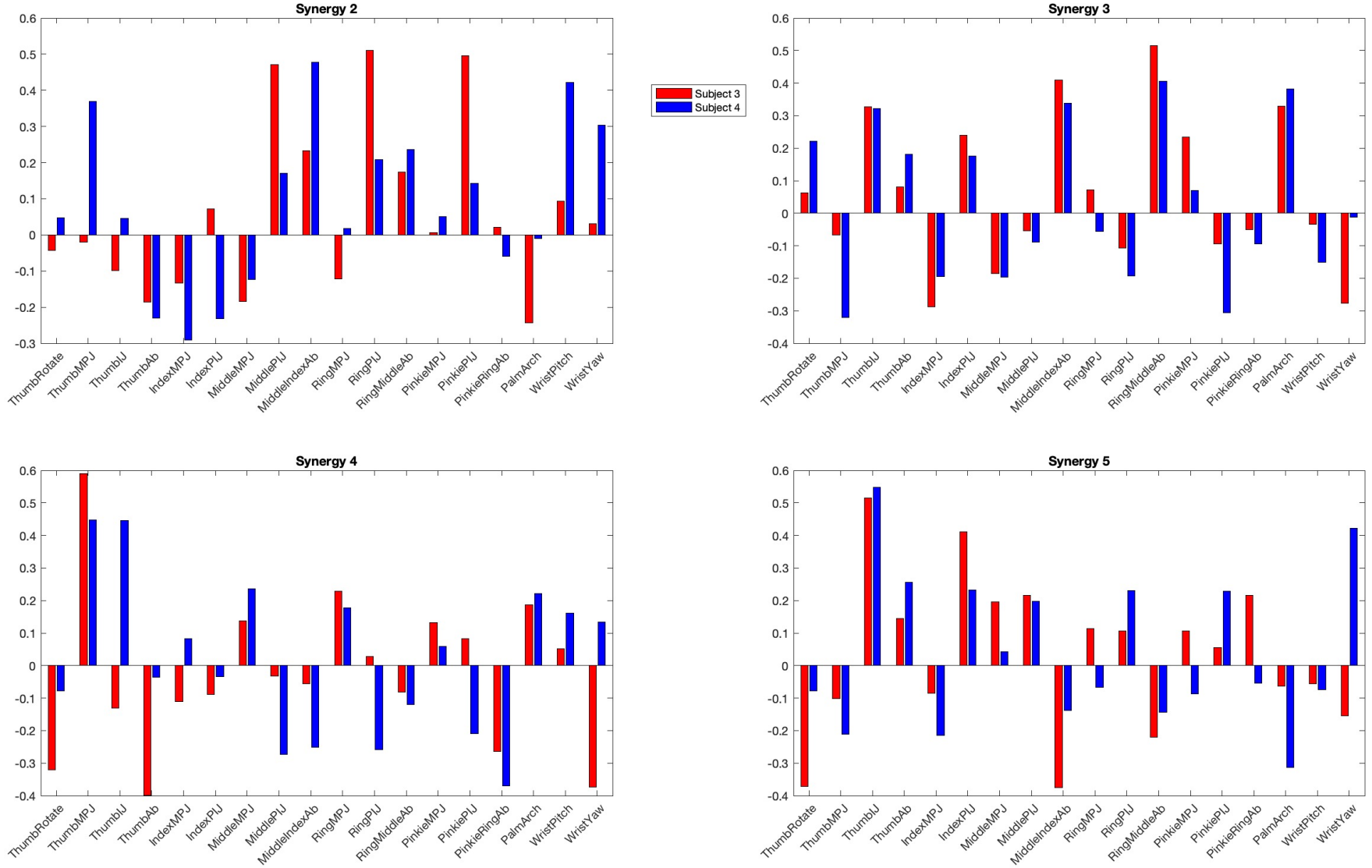
Correspondence between synergies and PCs

Synergies	Subject 3 PCs	Subject 4 PCs
Synergy 1	PC 1	PC 1
Synergy 2	PC 2	PC 3
Synergy 3	PC 3	PC 2
Synergy 4	PC 4	PC 7
Synergy 5	PC 5	PC 5
Synergy 6	PC 6	PC 6
Synergy 7	PC 7	PC 10
Synergy 8	PC 8	PC 13
Synergy 9	PC 9	PC 12
Synergy 10	PC 10	PC 9
Synergy 11	PC 11	PC 8
Synergy 12	PC 12	PC 14
Synergy 13	PC 13	PC 15
Synergy 14	PC 14	PC 4
Synergy 15	PC 15	PC 16
Synergy 16	PC 16	PC 11
Synergy 17	PC 17	PC 18
Synergy 18	PC 18	PC 17

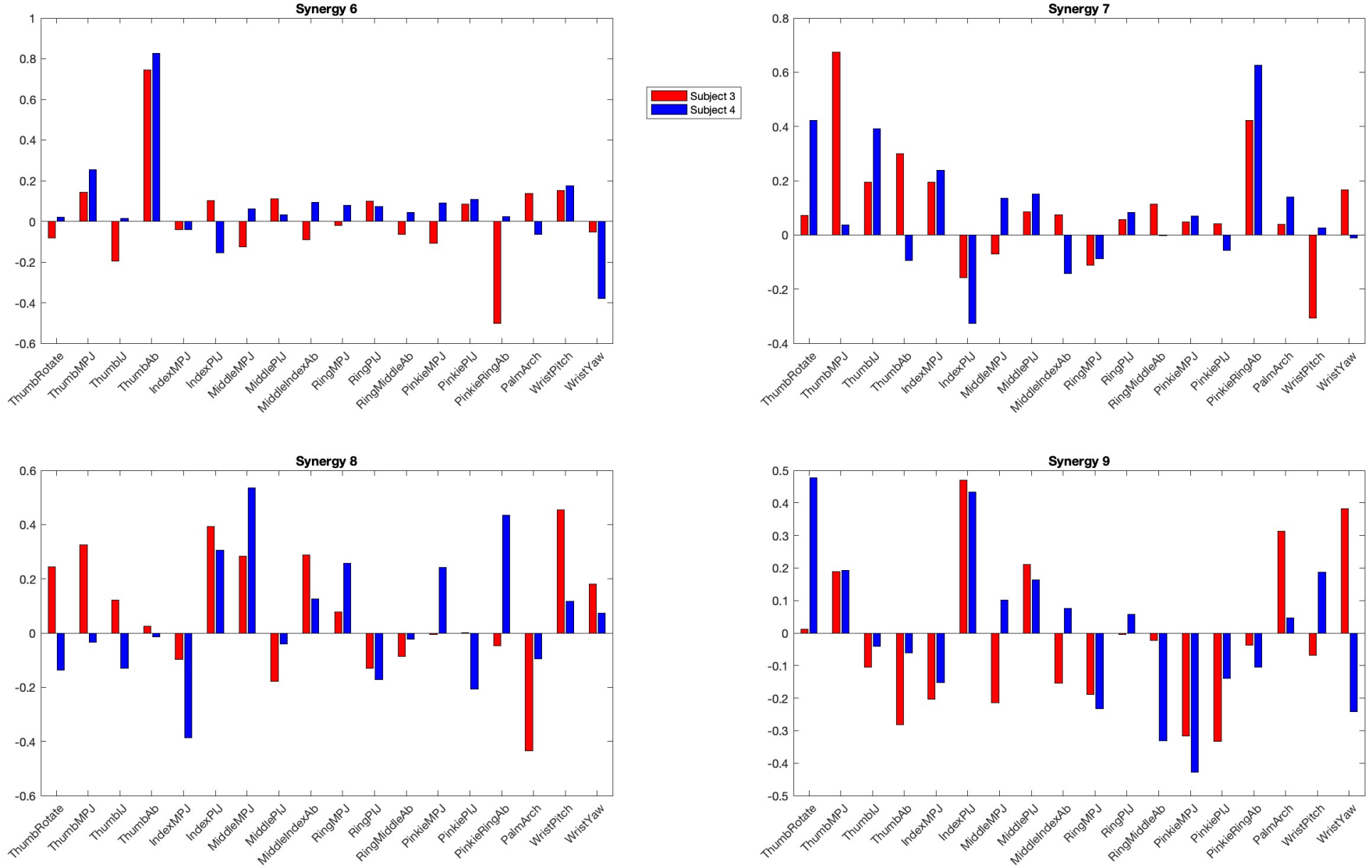
Synergies representations



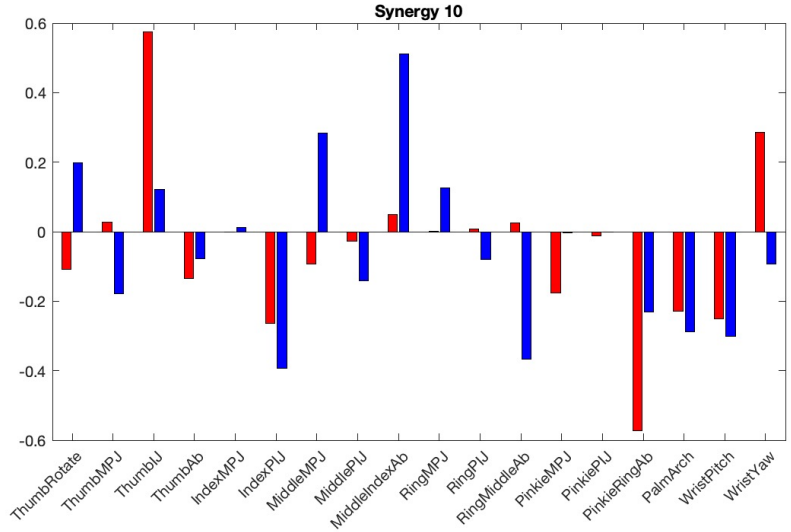
Synergies representations

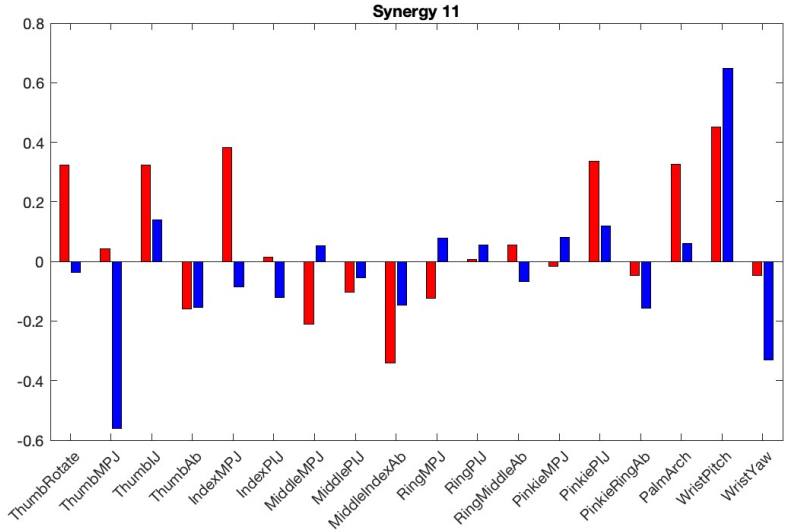


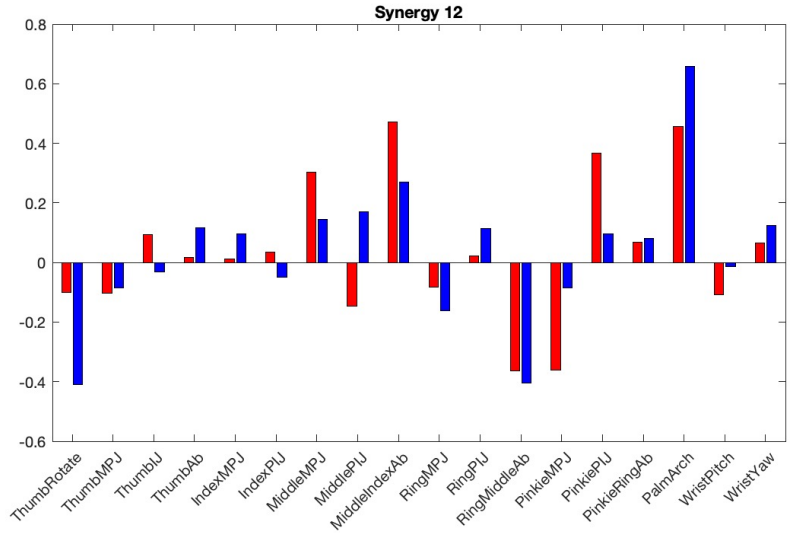
Synergies representations

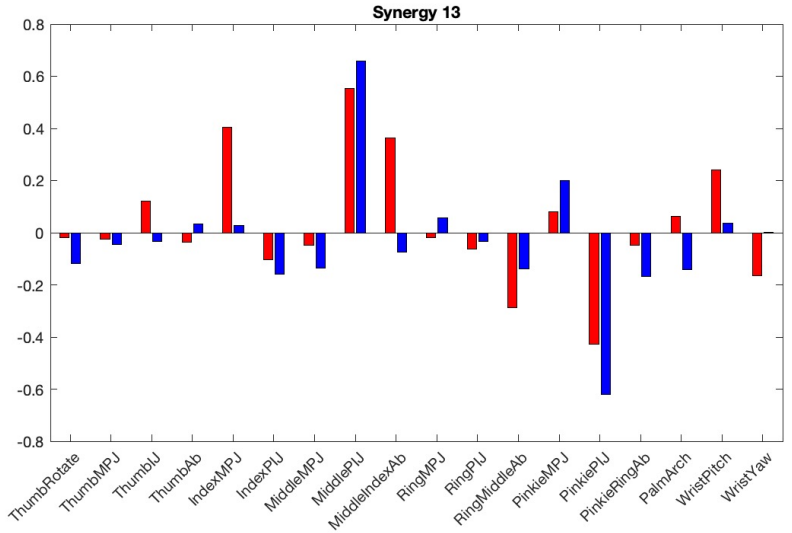


Synergies representations

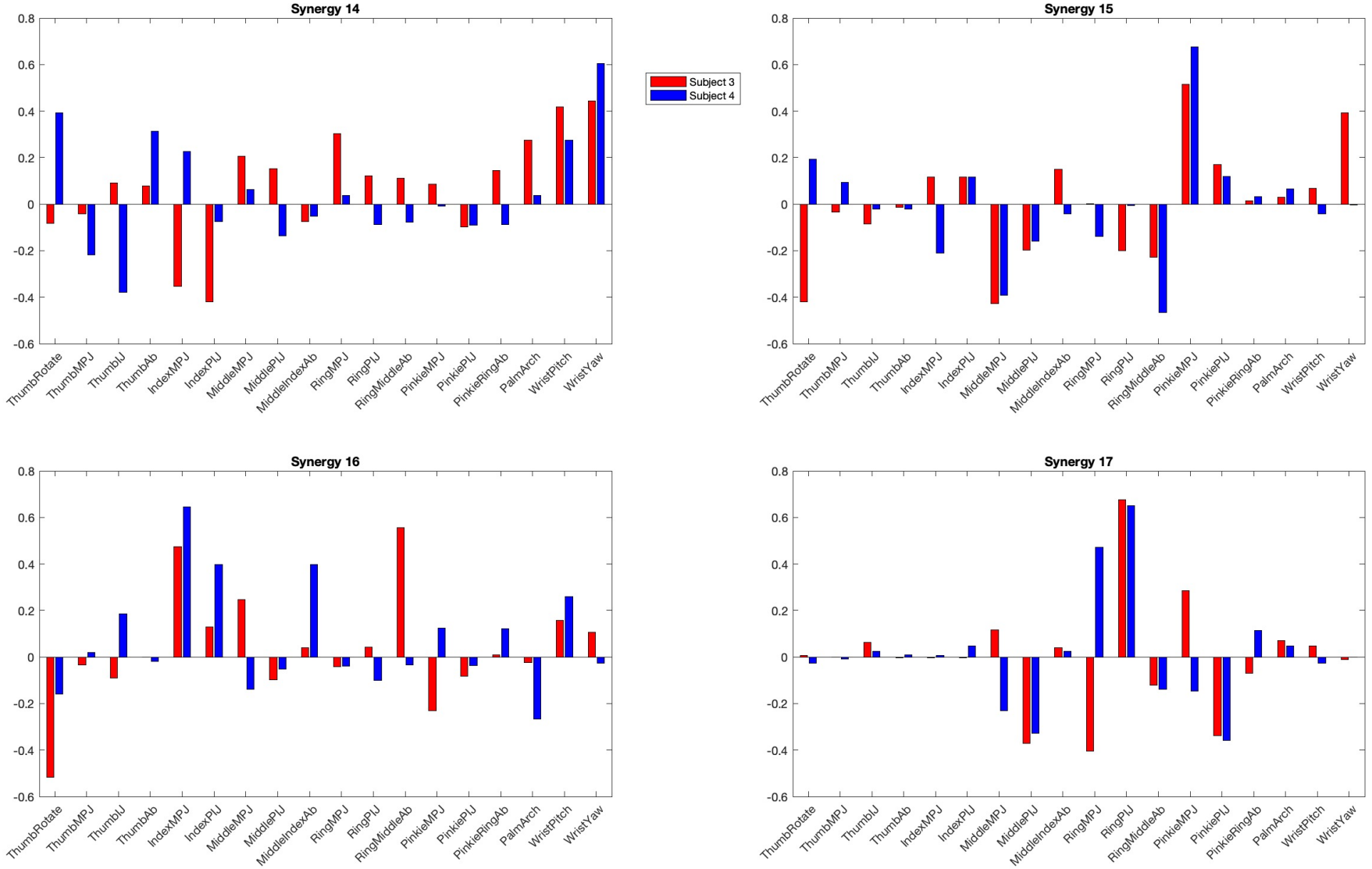




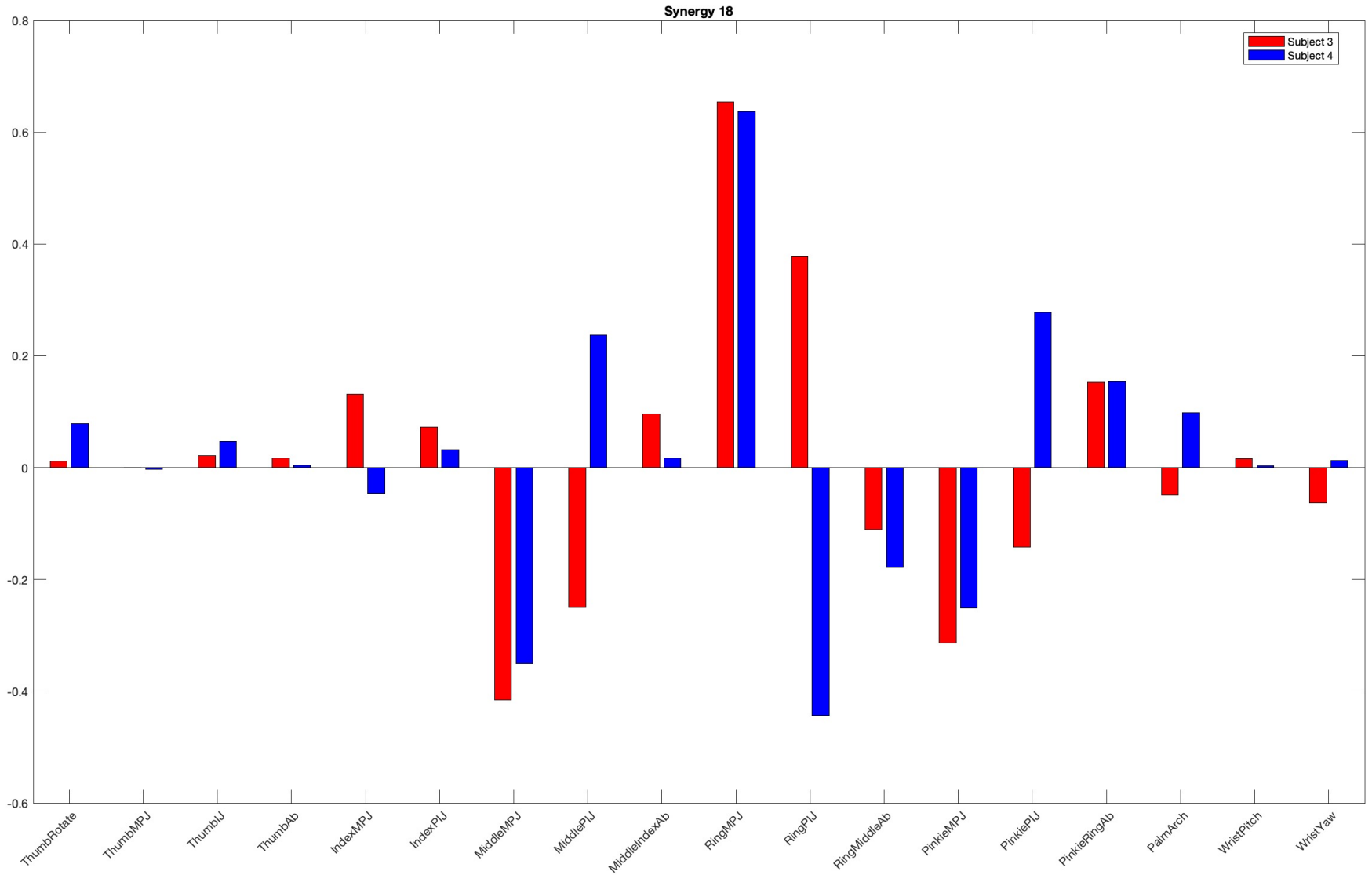




Synergies representations



Synergies representations

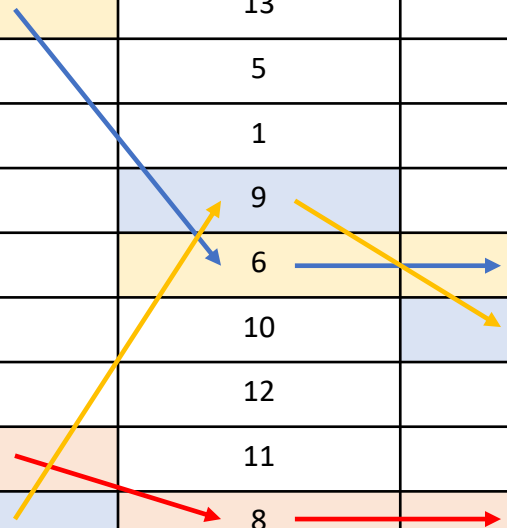


Synergies construction including All Subjects data

PCs	Subject 3	Subject 4	All Subjects
PC 1	7	7	7
PC 2	18	4	16
PC 3	4	18	18
PC 4	15	16	18
PC 5	15	5	15
PC 6	2	2	2
PC 7	1	15	10
PC 8	6	13	17
PC 9	17	5	1
PC 10	5	1	5
PC 11	13	9	13
PC 12	12	6	6
PC 13	11	10	9
PC 14	16	12	12
PC 15	8	11	10
PC 16	9	8	8
PC 17	14	3	14
PC 18	3	3	3

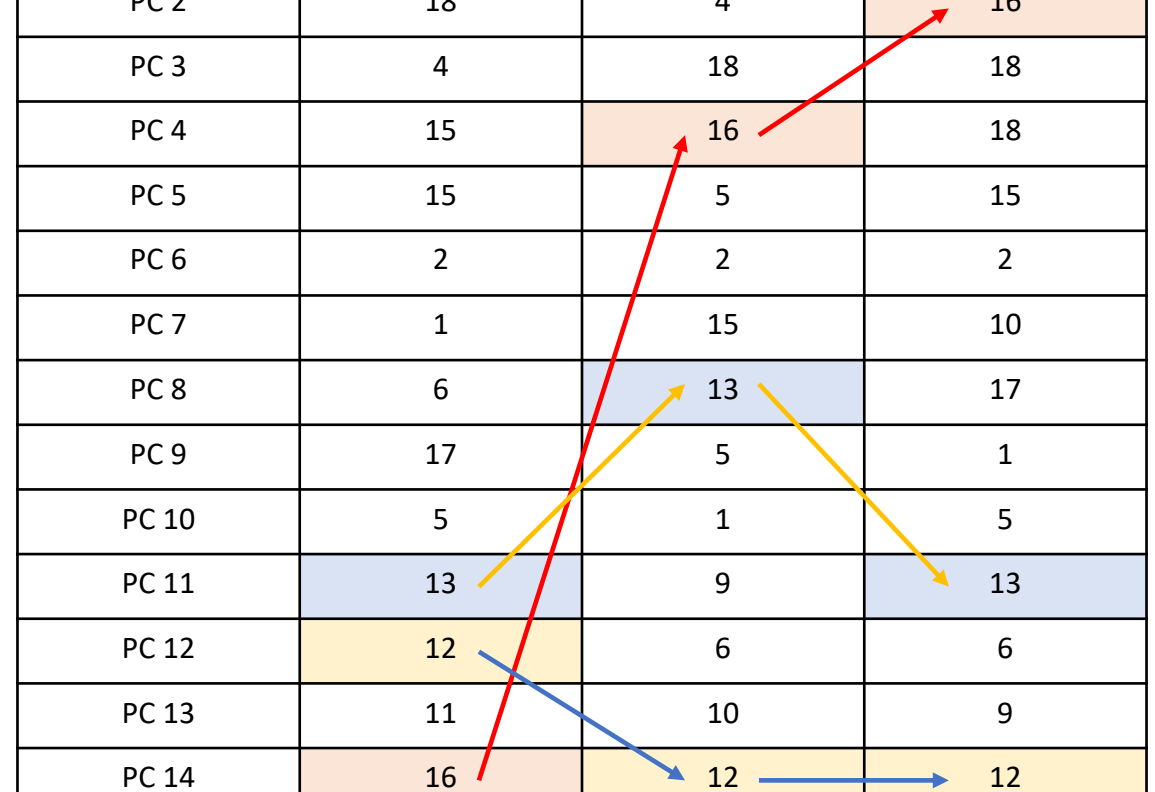
Synergies construction including All Subjects data

PCs	Subject 3	Subject 4	All Subjects
PC 1	7	7	7
PC 2	18	4	16
PC 3	4	18	18
PC 4	15	16	18
PC 5	15	5	15
PC 6	2	2	2
PC 7	1	15	10
PC 8	6	13	17
PC 9	17	5	1
PC 10	5	1	5
PC 11	13	9	13
PC 12	12	6	6
PC 13	11	10	9
PC 14	16	12	12
PC 15	8	11	10
PC 16	9	8	8
PC 17	14	3	14
PC 18	3	3	3



Synergies construction including All Subjects data

PCs	Subject 3	Subject 4	All Subjects
PC 1	7	7	7
PC 2	18	4	16
PC 3	4	18	18
PC 4	15	16	18
PC 5	15	5	15
PC 6	2	2	2
PC 7	1	15	10
PC 8	6	13	17
PC 9	17	5	1
PC 10	5	1	5
PC 11	13	9	13
PC 12	12	6	6
PC 13	11	10	9
PC 14	16	12	12
PC 15	8	11	10
PC 16	9	8	8
PC 17	14	3	14
PC 18	3	3	3



Synergies construction including All Subjects data

PCs	Subject 3	Subject 4	All Subjects
PC 1	7	7	7
PC 2	18	4	16
PC 3	4	18	18
PC 4	15	16	18
PC 5	15	5	15
PC 6	2	2	2
PC 7	1	15	10
PC 8	6	13	17
PC 9	17	5	1
PC 10	5	1	5
PC 11	13	9	13
PC 12	12	6	6
PC 13	11	10	9
PC 14	16	12	12
PC 15	8	11	10
PC 16	9	8	8
PC 17	14	3	14
PC 18	3	3	3

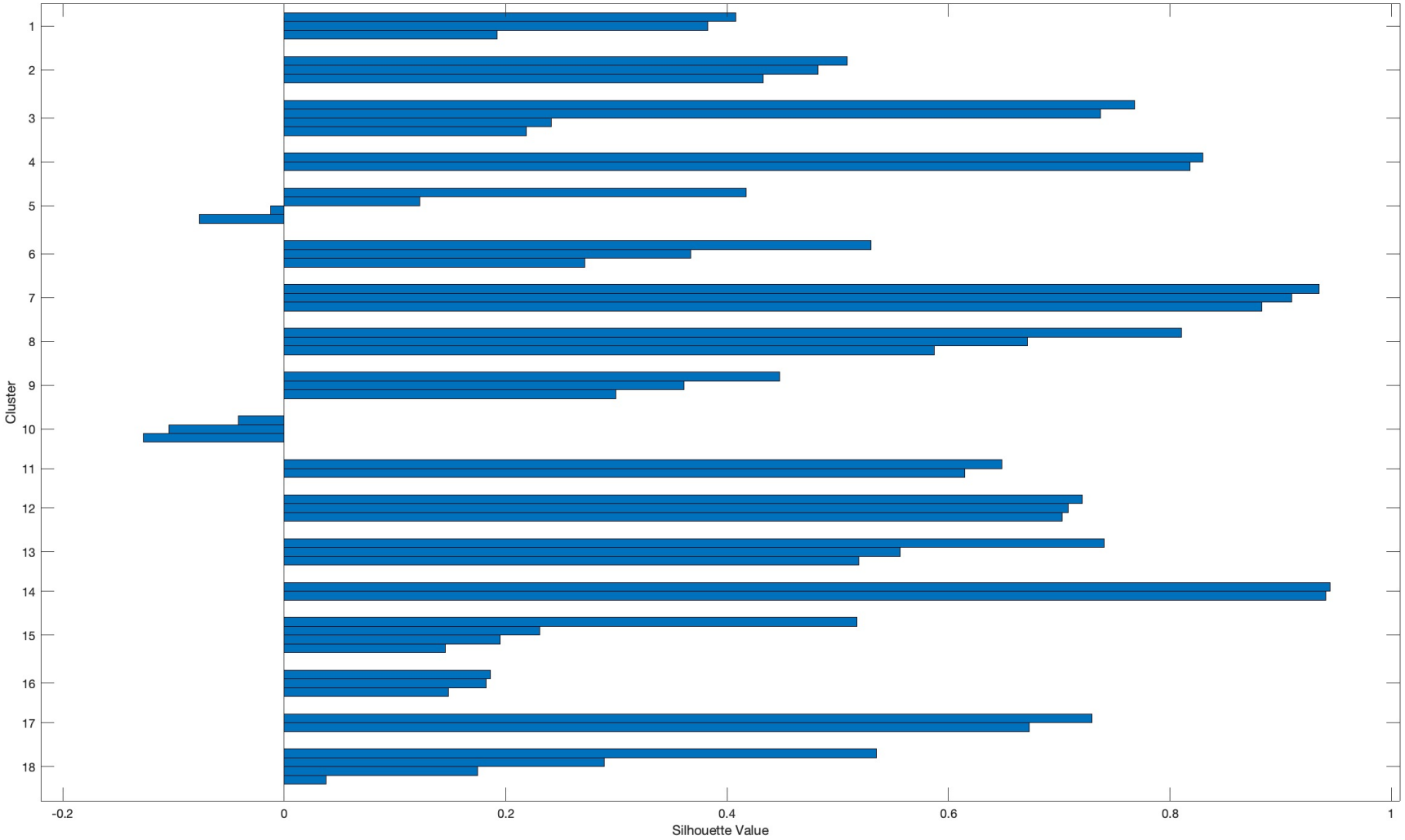
Synergies construction including All Subjects data

PCs	Subject 3	Subject 4	All Subjects
PC 1	7	7	7
PC 2	18	4	16
PC 3	4	18	18
PC 4	15	16	18
PC 5	15	5	15
PC 6	2	2	2
PC 7	1	15	10
PC 8	6	13	17
PC 9	17	5	1
PC 10	5	1	5
PC 11	13	9	13
PC 12	12	6	6
PC 13	11	10	9
PC 14	16	12	12
PC 15	8	11	10
PC 16	9	8	8
PC 17	14	3	14
PC 18	3	3	3

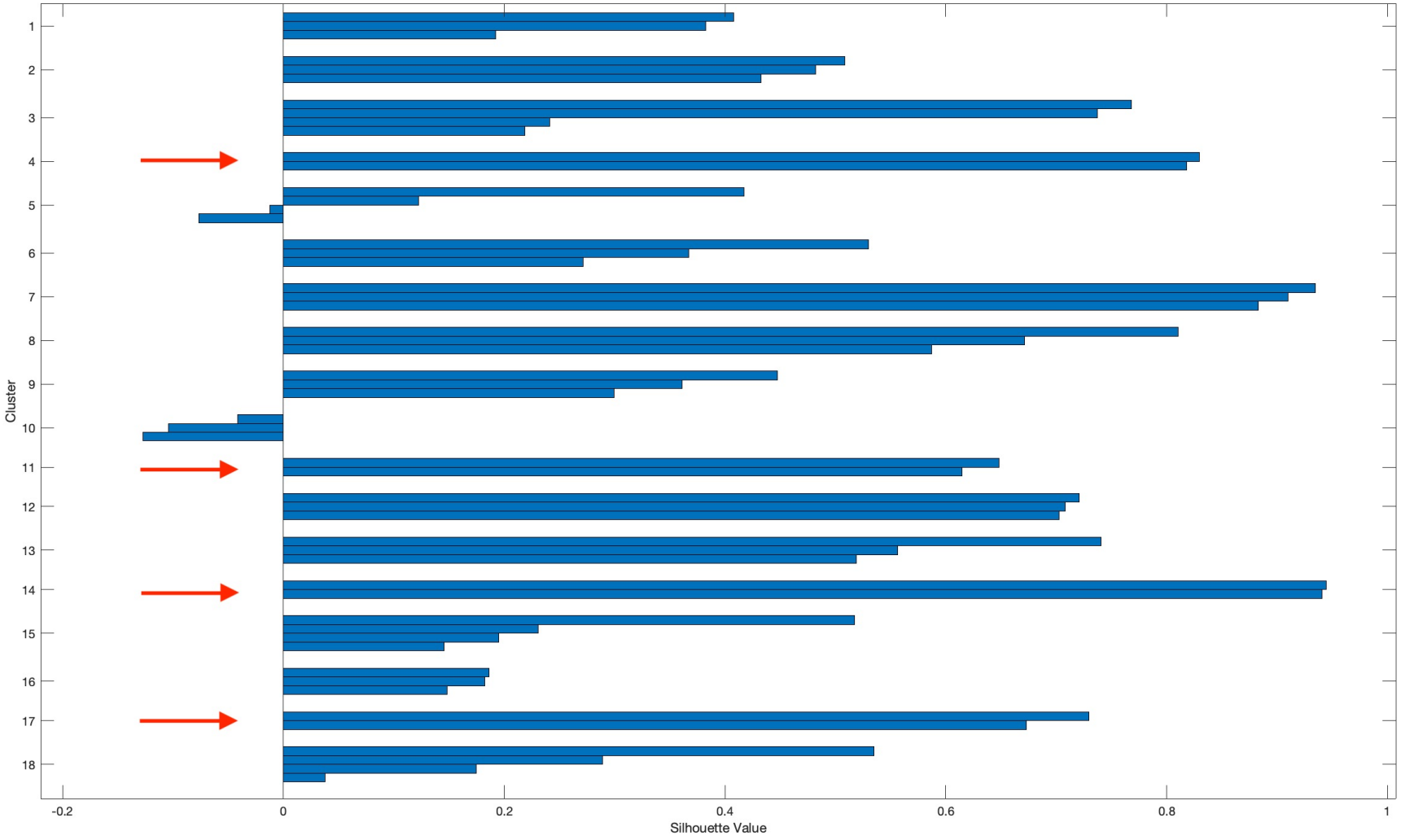
Synergies construction including All Subjects data

PCs	Subject 3	Subject 4	All Subjects
PC 1	7	7	7
PC 2	18	4	16
PC 3	4	18	18
PC 4	15	16	18
PC 5	15	5	15
PC 6	2	2	2
PC 7	1	15	10
PC 8	6	13	17
PC 9	17	5	1
PC 10	5	1	5
PC 11	13	9	13
PC 12	12	6	6
PC 13	11	10	9
PC 14	16	12	12
PC 15	8	11	10
PC 16	9	8	8
PC 17	14	3	14
PC 18	3	3	3

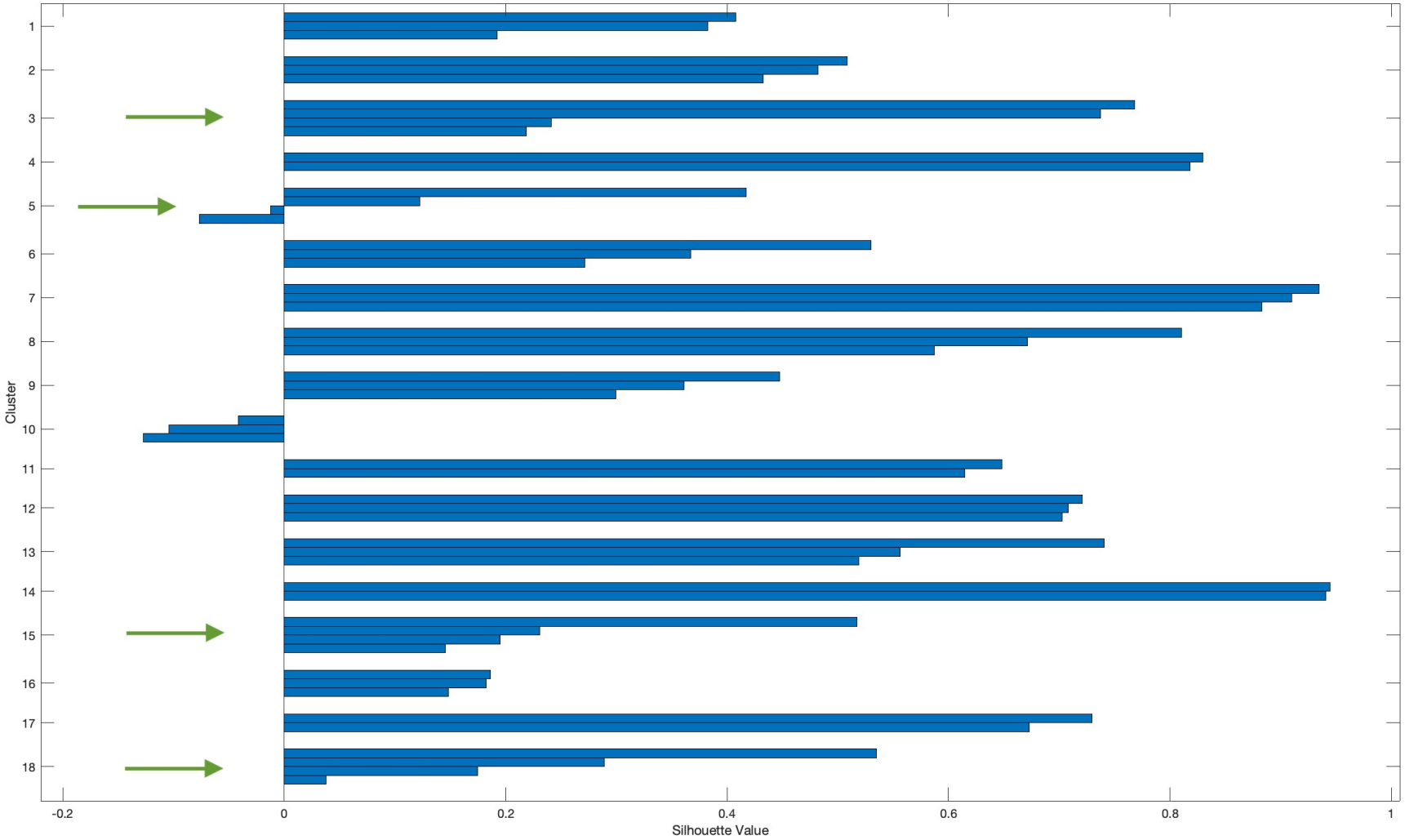
Silhouette values for clusters including All Subjects data



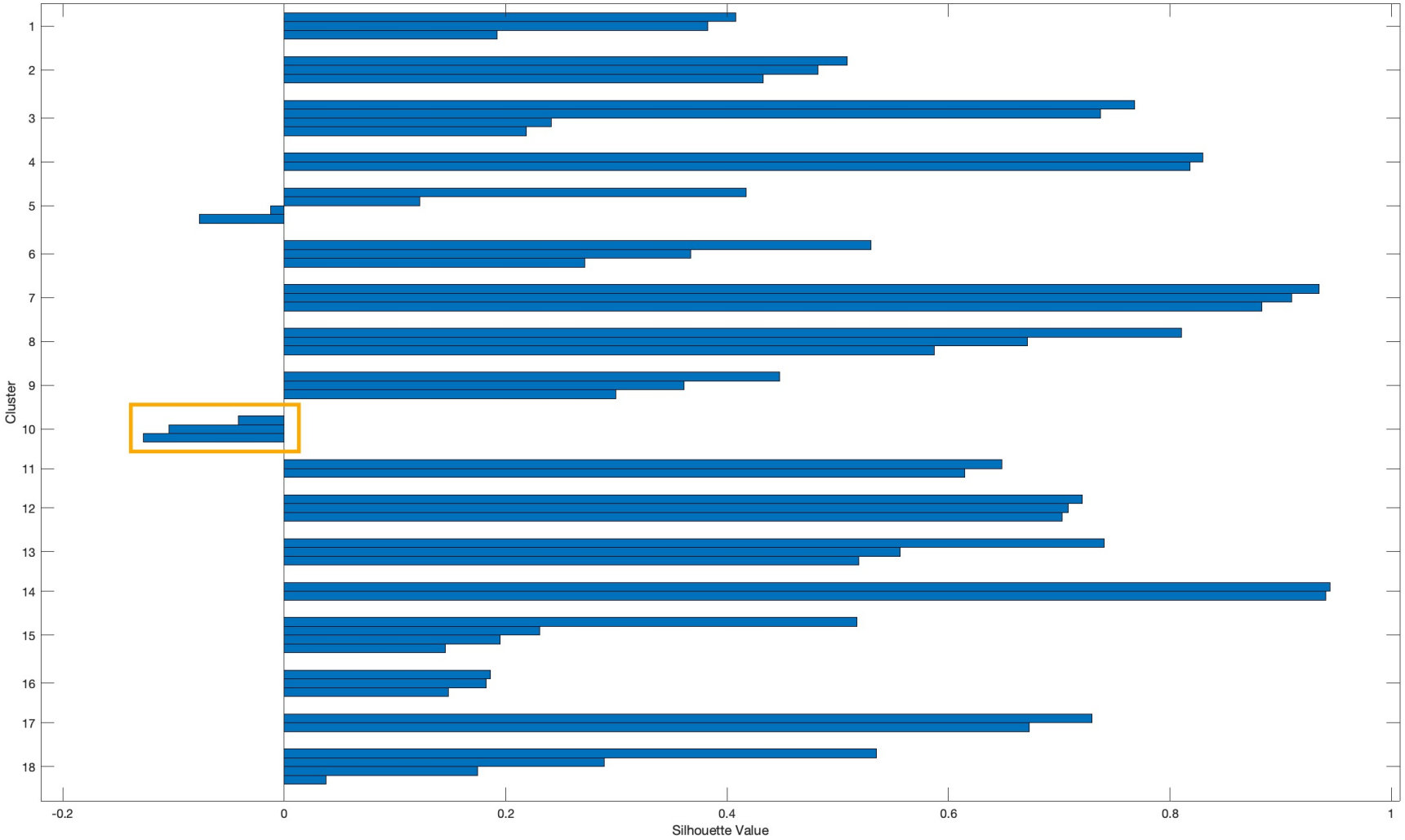
Silhouette values for clusters including All Subjects data



Silhouette values for clusters including All Subjects data



Silhouette values for clusters including All Subjects data



Next steps

- Iterative clustering.
- Calculate dynamic synergies (how synergies evolve during time).
- Synergies representations.

Items to comment

- Mendeley.