# Systems Intelligence and Team Performance

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# Introduction

- Systems Intelligence Inventory (Törmänen, Hämäläinen, & Saarinen, 2015)
  - Team context
- Can the SI scale be used to measure organizational SI? Does this method provide more information about the team than analyzing the individuals separately?
- Is there a connection between SI and team performance?

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# Participants

- Aalto University researchers

- Voluntary participation

- No compensation

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# Systems Intelligence Inventory (Törmänen, Hämäläinen, & Saarinen, 2015) 1/2

| Factor | SI Item |
|---|---|
| Systemic Perception (PER) | 1) I form a rich overall picture of situations<br>2) I easily grasp what is going on<br>3) I get a sense of what is essential to a given situation<br>4) I keep both the details and the big picture in mind |
| Attunement (ATTU) | 5) I approach people with warmth and acceptance<br>6) I take into account what others think of the situation<br>7) I am fair and generous with people from all walks of life<br>8) I let other people have a voice |
| Attitude (ATD) | 9) I explain away my mistakes<br>10) I have a positive outlook on the future<br>11) I easily complain about things<br>12) I let problems in my surroundings get me down |
| Spirited Discovery (DIS) | 13) I like to play with new ideas<br>14) I look for new approaches<br>15) I like to try out new things<br>16) I act creatively |

# Systems Intelligence Inventory (Törmänen, Hämäläinen, & Saarinen, 2015) 2/2

| Factor | SI Item |
|---|---|
| Reflection (REF) | 17) I view things from many different perspectives<br>18) I pay attention to what drives my behavior<br>19) I think about the consequences of my actions<br>20) I make strong efforts to grow as a person |
| Wise Action (WIS) | 21) I am willing to take advice<br>22) I take into account that achieving good results can take time<br>23) I am wise in my judgments<br>24) I keep my cool even when situations are not under control |
| Positive Engagement (ENG) | 25) I contribute to the shared atmosphere in group situations<br>26) I praise people for their achievements<br>27) I'm good at alleviating tension in difficult situations<br>28) I bring out the best in others |
| Effective Responsiveness (EFF) | 29) I prepare myself for situations to make things work<br>30) I easily give up when facing difficult problems<br>31) I'm able to put the first things first<br>32) When things don't work, I take action to fix them |

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# Research topics

- Individual level
    - Differences between supervisors and members of teams
    - Differences in respondents' evaluations about themselves and their team
- Team level
    - Relationship between SI and experienced performance
    - Impact of high SI or low SI individuals or the supervisor on the team
    - Impact of variance in the individual's SI scores (heterogeneity) on the team

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# Final data set

- 81 respondents
  - 19 teams
  - 19 supervisors
  - 62 members (non-supervisors)

- Team size: 2-7 individuals

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# Individual level results 1/3

- Team members evaluated themselves higher than their team in Attunement, Reflection and in the first five items in the table and lower in the last item (28).

| SI Item (FACTOR) |
| --- |
| 6) I take into account what others think of the situation (ATTU) |
| 12) I let problems in my surroundings get me down (ATD) |
| 18) I pay attention to what drives my behavior (REF) |
| 19) I think about the consequences of my actions (REF) |
| 20) I make strong efforts to grow as a person (REF) |
| 28) I bring out the best in others (ENG) |

- Team supervisors evaluated themselves higher than their team in item 1 and lower in item 24.

| SI Item (FACTOR) |
| --- |
| 1) I form a rich overall picture of situations (PER) |
| 24) I keep my cool even when situations are not under control (WIS) |

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# Individual level results 2/3

- The supervisors' and team members' personal SI evaluations were similar.

- Supervisors' and members' evaluations of the team were similar.

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# Individual level results 3/3

- Supervisors evaluated their team's performance slightly higher than the members did.
  - Average of supervisors' performance evaluations was 8.32.
  - Average of members' performance evaluations was 7.84.
  - t-test p-value 0.065

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# Team level results 1/3

- Strong positive correlation between *team's SI* and *performance*
    - Pearson's r = 0.84



- Positive correlation between average of individual SI scores and *team's performance*
    - Pearson's r = 0.59



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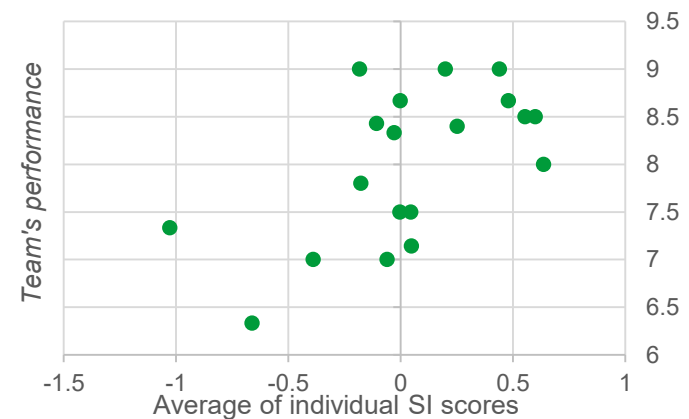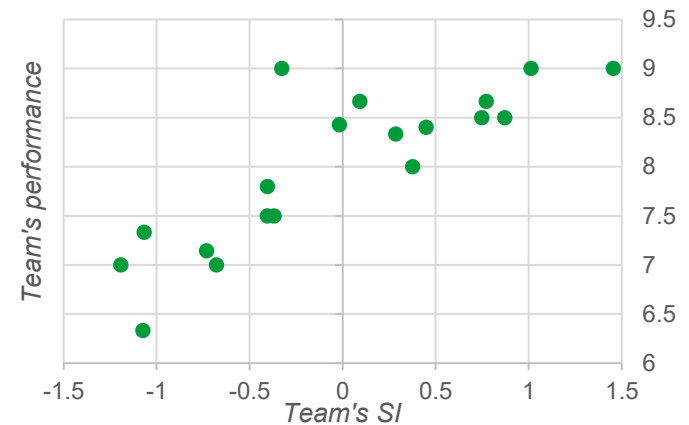
# Team level results 2/3

- *Team's SI* didn't correlate with the variance of the individuals' team SI score or performance evaluations.

- No support for hypotheses about the importance of high SI or low SI individuals for the whole team.

- No support for the hypothesis that teams with high SI supervisors would be more likely to have high *team's SI* or *performance*

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# Team level results 3/3

- Positive correlation between variance of individual SI scores and both *team's SI* and *performance*
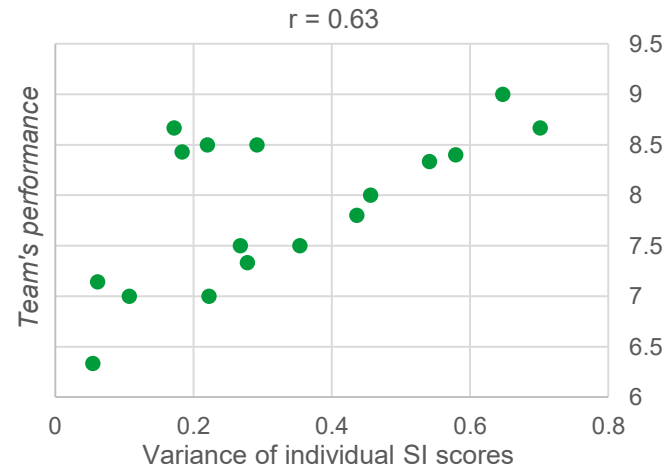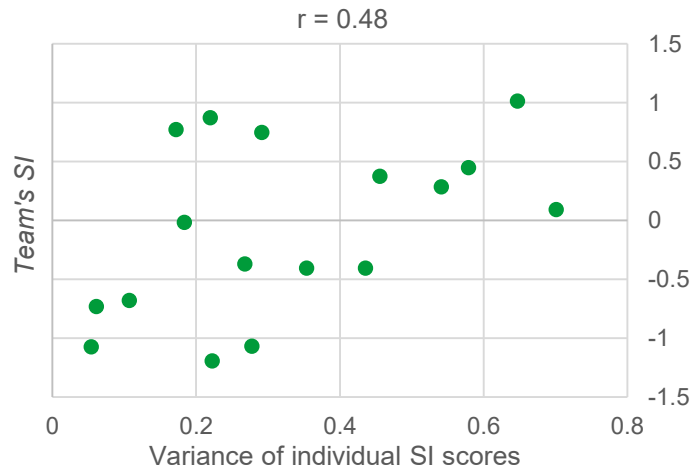
# Conclusions

- *Team's SI* was found to be positively related to *team's performance*. The correlation was stronger with *team's SI* than with the average of individual SI scores.

  ➢ *Team's SI* could be a useful construct for measuring organizational SI, providing more information about the team than the analysis of the individuals separately.

- The individual level results can be explained mostly by biases.

- Low importance of supervisors and the positive impact of heterogeneity could be related to the study setting.

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# Future research

- This study:
  - Low number of teams and supervisors
  - Team performance was self-evaluated.

- ➢ An objective scale for team performance and a larger data set

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