Project-Level Analysis of Leadership & Communication Survey Items

The NSF INCLUDES Coordination Hub's Collaborative Infrastructure Survey is designed to document respondents' assessment of their project's progress addressing specific components of each design element. The graphics on the site portray survey findings using *respondents* as the unit of analysis. While this perspective is useful, it fails to consider whether respondents within a given project agreed about the level of progress around the design elements. In addition, there is considerable benefit in considering *projects* as the unit of analysis (e.g., to assess which design elements projects appear to be addressing in a given year of NSF INCLUDES funding). To address this, we used item-response theory and confirmatory factor analysis to generate *project-level* composite scores for each survey item.[1] This approach allowed us to assess the extent to which Alliances have operationalized the design element of collaborative infrastructure at a given point in time. **Learn more about the methodology used to generate project-level findings**

Project-level survey responses regarding Leadership & Communication were overwhelmingly positive (compared to the other design elements), with an overall score of 85.6 (and a range of 67.2 to 94.2 on a scale of 1 to 100). Additionally:

- Alliance-level responses for were 81.0 or higher across all survey items pertaining to Leadership & Communication—with the highest score for the following statement: *"Our project's leadership structure leverages the collective knowledge of partners and other stakeholders"* (90.1).

- Alliance-level responses for Leadership & Communication were lowest for the following two statements (although the Alliance-level composite scores were still quite high): *"Our project has internal procedures that minimize power imbalances among partners"* (81.3) and *"Our project's decisions are informed by input from our participant population"* (81.0).

- There were some noteworthy differences across Alliances by year of NSF INCLUDES funding. Alliances with 2 years of NSF INCLUDES funding were more likely to have higher composite scores for all of the statements pertaining to Leadership & Communication.[2,3]

---

[1] These approaches are designed to assess the relationship between the latent construct and observed items to test the reliability and validity of the measurement and quantify the attributes of interest.

[2] Because the survey was administered for the first time in spring 2021, we presently have no data on respondents' perceptions of progress at the end of the first year of NSF INCLUDES funding. (Going forward, we expect to obtain Year 1 data from NSF INCLUDES Planning Grants and Cohort 3 Alliances.) As a result, we are currently unable to provide information about the relative progress that respondents would have reported for their initial year.

[3] In theory, one would expect that Alliances with more years of NSF INCLUDES funding would report more progress around the operationalization of a given design element. However, we are somewhat cautious when making such comparisons, because it is possible that the characteristics of Alliances funded in a given cohort differ (e.g., in terms of the maturity and complexity of their partnership structure, the range of barriers they are designed to address, the characteristics of their participant population, and the complexity of their approach). In addition, respondents' perspectives concerning their accomplishments (or the progress they still need to make) around a given design element may shift as they recognize the complexity of a given issue—with respondents realizing more work is needed as they begin to delve more deeply into a particular task.

Project-Level score for Leadership & Communication

Survey item	Overall (n=6 projects)	Year 2 of project funding (n=3 projects)	Year 3 of project funding (n=3 projects)
Our project's leadership structure leverages the collective knowledge of partners and other stakeholders	90.1 (70.8, 100.0)	93.5 (88.9, 100.0)	86.7 (70.8, 96.4)
Our project leadership provides opportunities for building relationships across partners	89.5 (70.8, 96.4)	92.2 (88.6, 95.0)	86.7 (70.8, 96.4)
Our project leadership is willing to engage in frank and open discussions when areas of disagreement exist	88.5 (59.1, 100.0)	92.3 (88.6, 96.7)	84.8 (59.1, 100.0)
Our project leadership has structures in place to encourage full participation by all partners	86.2 (66.7, 96.7)	91.0 (87.5, 96.7)	81.3 (66.7, 89.3)
All of our core partners collaborate with each other to align their actions	83.8 (66.7, 92.9)	87.1 (80.9, 92.9)	80.6 (66.7, 91.7)
Our project's decision-making processes are transparent to those inside the project	83.6 (68.8, 95.0)	87.3 (79.5, 95.0)	79.8 (68.8, 85.7)
All of our core partners regularly seek advice from one another (e.g., effective strategies for addressing a given challenge)	82.2 (68.8, 95.0)	85.1 (77.9, 95.0)	79.3 (68.8, 90.0)
Our project has internal procedures that minimize power imbalances among partners	81.3 (62.5, 90.0)	84.2 (75.0, 90.0)	78.5 (62.5, 87.5)
Our project's decisions are informed by input from our participant population (e.g., through representation by members of the participant population on a steering committee)	81.0 (62.5, 92.5)	84.1 (77.8, 89.6)	77.9 (62.5, 92.5)
Overall	85.6 (67.2, 94.2)	89.0 (85.3, 94.2)	82.2 (67.2, 89.8)

Note: The score for a given survey item represents the overall standardized scale score obtained from the item-response theory and confirmatory factor analysis. Each score has a range of 1 to 100, with 100 representing the highest possible score—i.e., all respondents within a project answered the highest response category (either "achieved" or "strongly agree") for a given survey item. In addition, we provide the minimum and maximum project-level standardized scale score response *(in italics)* for a given survey item.