Explanation Satisfaction Scale for Explainable AI

Like the Explanation Goodness checklist, the Explanation Satisfaction Scale was based on the literatures in psychology, philosophy, and other pertinent disciplines regarding the features that make explanations good. However, the application context for the two measuring instruments is different.

Thus, although the two scales (Goodness and Satisfaction) have some similar items, they also have some differences.

The Explanation Goodness Checklist is intended to be used by researchers or their XAI systems that have created explanations. The Explanation Goodness Checklist is an independent evaluation of explanations by other **researchers**. *The reference is to the properties of explanations.*

Explanation Satisfaction is an evaluation of explanations by a **user**. *The reference is to the explanatory value to the user.*

The Explanation Satisfaction Scale is intended to be used to collect judgments by research participants after they have worked with the XAI system and have been recipients of one or more explanations.

The Explanation Satisfaction Scale consists of nine, 5-point Likert items. For each item, the user can be afforded a "free response" opportunity.

Researchers may choose to use a subset of the nine items.

1.   From the explanation, I **understand** how the [software, algorithm, tool] works.

5	4	3	2	1
I agree strongly	I agree somewhat	I'm neutral about it	I disagree somewhat	I disagree strongly

2. This explanation of how the [software, algorithm, tool] works is **satisfying**.

5	4	3	2	1
I agree strongly	I agree somewhat	I'm neutral about it	I disagree somewhat	I disagree strongly

3. This explanation of how the [software, algorithm, tool] works has **sufficient detail.**

5	4	3	2	1
I agree strongly	I agree somewhat	I'm neutral about it	I disagree somewhat	I disagree strongly

4. This explanation seems **complete**.

5	4	3	2	1
I agree strongly	I agree somewhat	I'm neutral about it	I disagree somewhat	I disagree strongly

5. This explanation shows me how **accurate** the [software, algorithm, tool] is.

5	4	3	2	1
I agree strongly	I agree somewhat	I'm neutral about it	I disagree somewhat	I disagree strongly

6. This explanation shows me how **reliable** the [software, algorithm, tool] is.

5	4	3	2	1
I agree strongly	I agree somewhat	I'm neutral about it	I disagree somewhat	I disagree strongly

7. This explanation **tells me how to use** the [software, algorithm, tool]

5	4	3	2	1
I agree strongly	I agree somewhat	I'm neutral about it	I disagree somewhat	I disagree strongly

8. This explanation is **useful to my goals**.

5	4	3	2	1
I agree strongly	I agree somewhat	I'm neutral about it	I disagree somewhat	I disagree strongly

9. This explanation helps me know when I should **trust and not trust** the [software, algorithm, tool].

5	4	3	2	1
I agree strongly	I agree somewhat	I'm neutral about it	I disagree somewhat	I disagree strongly