

Class: TY BSc

Subject : Model Documentation Analysis & Reporting

Subject Code: PUSASQF503

Chapter: Unit 4

Chapter Name: Application and Interpretation of results

Today's Agenda

1. Commenting on the results
1. Generating ideas for comments and next steps

1 Commenting on the results

Generating comments

Here is a list of areas to focus on and questions to ask yourself to help generate comments. (We've given each type an abbreviation so that we can refer to them in the examples below.)

Observations (OBS)

Make relevant observations about each set of results or chart.

- *What do I think of these answers?*
- *What patterns can I see, eg trends or high / low values?*
- *Can I see any anomalies or inconsistencies or anything that looks silly?*

Expectations (EXP)

Make relevant comments about whether the observations make sense relative to the information provided.

- *Do they make sense overall?*
- *Are they what I would have expected?*

Explanation (WHY)

Ensure there is a clear explanation of why each set of results is as it is and, where appropriate, how it relates to the other results.

- *Do these patterns make sense? Can I explain them?*

1 Commenting on the results

Differences (DIF)

If you have been asked to produce different scenarios, look for opportunities to explain the differences in the results (in terms of both direction and approximate magnitude).

- *How do the results for the different scenarios compare (if applicable)?*

Checks (CHK)

Think of ways to check the results.

- *Can I do any reasonableness checks, eg rough calculations to check whether the answers are believable?*
- *Can I compare these results with anything else to check them, eg background information given in the question?*
- *Do these results accurately reflect all the key features in the real-life situation we are modelling?*

Inferences & implications (INF)

Think of conclusions that can we infer from our observations.

- *What conclusions can I draw from these results?*
- *Do the results make me question anything else, eg the model, the data or the assumptions?*

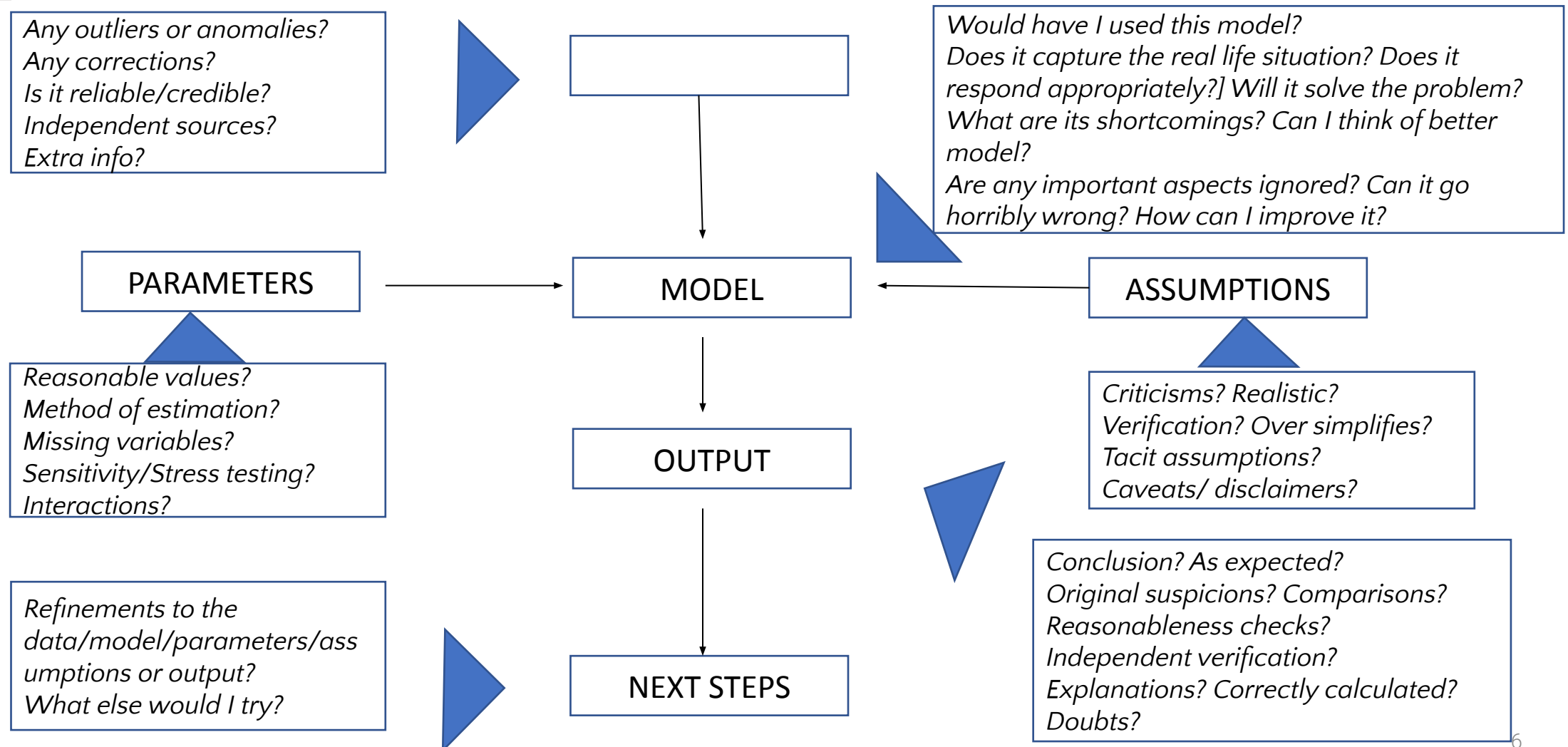
2 Generating ideas for comments and next steps

As mentioned above, your summary should cover each of the following areas:

- the data analysis you carried out
- a description of the model
- the assumptions made
- the analyses you carried out
- your results and conclusions
- recommended next steps.

Students often find it difficult to interpret their results and come up with ideas to include in their comments and next steps (and lose a lot of marks as a result). The diagram below shows some questions you can ask yourself to help generate ideas. There is a more detailed list of questions relating to each aspect of the modelling process in the text below. When applying these, make sure you tailor your suggestions to the specific situation, rather than just making generic statements. Try also to come up with a range of *different* ideas.

2 Generating ideas for comments and next steps



2 Generating ideas for comments and next steps

Data

- Are there any anomalies in the data?
- Are there any outliers, *ie* values that appear to be inconsistent with the model?
- Did I have to make any corrections?
- Does the data appear reliable?
- Do I believe the information I've been given?
- Have I got enough data for it to be 'credible', *ie* to form the basis for a model?
- Is there an independent data source I could use?
- Is there any additional information that might help me clarify things?

Model

- Is this the model I would have used in this situation?
- Does the model capture the key features of the real-life situation?
- Does the model 'respond' in the same way as the real-life situation?
- Has this model solved the problem/answered the original question?
- Does the model have any obvious shortcomings?
- Can I think of a better model?
- Does the model ignore any aspects that might be important?
- Are there any circumstances when the model would go horribly wrong?
- Could I make the model more accurate/more versatile/more informative?

2 Generating ideas for comments and next steps

Parameters

- Are the parameter values I am using reliable?
- Do their values seem reasonable?
- Is there a better way of estimating the parameter values?
- Are there any missing variables that we have ignored?
- What would happen if I changed each of the parameter values a little (sensitivity testing)?
- What would happen if I changed each of the parameter values a lot (stress testing)?
- How do the parameter values interact with each other?

Assumptions

- What criticisms would I make of the assumptions?
- Are the assumptions realistic?
- Can I test / verify any of the assumptions?
- In what ways have we oversimplified the real-life situation?
- Does the model make any tacit (unstated) assumptions?
- Are there any important caveats / disclaimers I should mention?

2 Generating ideas for comments and next steps

Output

- What conclusions can I draw?
- Is that what I would have expected?
- Do the results support the original suspicion/observation?
- How do the different answers in the output compare?
- Are there any reasonableness checks I can apply and comment on?
- Can I verify the results independently?
- Can I explain all the results?
- Am I sure my calculations are correct?
- Do I have any doubts about the results?

Next steps

Most of the ideas for next steps can be deduced by considering the individual components.

- What refinements to the DATA might be worth investigating?
- What refinements to the MODEL might be worth investigating?
- What refinements to the PARAMETERS might be worth investigating?
- What refinements to the ASSUMPTIONS might be worth investigating?
- What refinements to the OUTPUT might be worth investigating?
- What else would I try if I was doing this in the office and I had more time?

Recap

Key points regarding the project summary

A good project summary should:

- provide a summary of the entire project
- start with a clear statement of the purpose of the project
- describe the data analysis, the model, the assumptions you made and the analyses you carried out
- state your observations, conclusions and recommended next steps
- mention the types of checks you applied, including reasonableness checks
- include a clear visual presentation of your results
- present the relevant information in a clear and structured way
- include any extra items that were specifically asked for
- be kept as simple as possible and not include irrelevant details
- be written in good English, using appropriate language
- be set out neatly.