

Prompting tips: Using AI tools to prepare quantitative data for analysis.

Introduction

These tips aim to help Australian Public Service (APS) officers interested in using Gen AI tools to support them in preparing quantitative data for analysis. They relate to **video 10** from the “Artificial Intelligence (AI) tools for Evaluation in the Australian Government” series.

This video series and resources are meant to inspire ideas and learning. They are not designed to be a manual. It aims to show how AI tools, especially generative AI (Gen AI) can support the evaluation process. The goal is to help evaluators and APS staff explore how AI can be useful, and where it is less useful.

AI can help with repetitive tasks but cannot replace expert knowledge. APS officers must carefully review AI outputs. Any AI-based decisions and products must be owned by the officers. This human oversight can help ensure that results are accurate, fair, and culturally appropriate.

Please note that you should only use AI tools that have been approved by your agency or department. Any documents that you upload to the tool should only be up to the security clearance level approved for the tool by your agency or department.

Prompt engineering

A prompt is an instruction in natural language that tells a Gen AI tool to perform a task. Prompt engineering is the process of creating and refining these prompts to get a suitable output from the tool.¹ Table 1 below shares some essential tips for using Gen AI tools. This is derived from the AI Colab’s “AI for Policy People” course, available through APSLearn. These tips are organised along four pillars:



Share specifics and context



Provide examples



Avoid leading or biased prompts



Chat, not search

¹ [Prompts overview | Microsoft Learn](#)

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Table 1: Essential prompt engineering tips

Share specifics and context	Provide examples	Avoid leading or biased prompts	Chat, not search
Gen AI tools like Copilot are not search-engines. They don't work on keywords, they work on the meaning of words and how they are used, just like people. For more tailored, and useful responses from AI tools, you should provide as much context as you can, with specific requests. Vague prompts lead to generic answers.	Gen AI tools can "read between the lines" pick up a lot of indirect instructions when you share raw examples about your topic of interest. Examples help reinforce your specific requests.	Use balanced prompts/requests to get well-rounded responses. Avoid leading or biased prompts. If you are unsure that the Gen AI tool has considered all aspects of your query, simply ask it to be appropriately critical.	Use Gen AI tools conversationally. Ask clarifying questions, build on responses, and treat it like a colleague you're bouncing ideas off. Don't expect a perfect response in one go. Iterate, get a rough version, revise and refine through additional prompts.

Priming AI tools to support data preparation

Before prompting, please upload relevant datasets, metadata, and any linked documentation. These are some example prompts that you could use to help prepare your quantitative data for further analysis.

1. "Summarise the structure and variables in the uploaded **[dataset/workbook/worksheet]**. Provide references" (this helps prime the Gen AI tool with reference content)
2. "Please identify missing values, duplicates, and outliers in this **[dataset/ workbook/ worksheet]**?" (this can help with data cleaning and quality checks)
3. "Review this **[dataset/ workbook/ worksheet]**, and please standardise variable formats and units." (Ensures consistency across datasets)
4. "Generate a data dictionary from this **[dataset/ workbook/ worksheet]**."

Prompts to support data transformation and structuring

Once you have prepared the data, the next step is to reshape the data for analysis. These prompts can help you with this.

1. "Transform this **[dataset/ workbook/ worksheet]** into a format suitable for **[time series/cross-sectional]** analysis." (this helps prime the Gen AI tool with reference content)
2. "Group this data by **[variable]** and calculate summary statistics." (enables aggregation and descriptive analysis)
3. "Highlight key trends, any anomalies and outliers in this **[dataset/ workbook/ worksheet]**. Please provide references" (can inform exploratory analysis).

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4. “Suggest visual formats to clearly present this analysis to [stakeholder group].”
This prompt can be adjusted and repeated for as many analyses and stakeholder groups as required).

Validating AI outputs

You should test AI outputs with data analysts in your team to assess quality. This can help you pick up any data errors earlier in the process. This helps reduce the risk of potentially expensive and time-consuming corrections later.

Any data must be collected, stored and used in accordance with the Privacy Act (1988)², and other relevant legislation.

Policy and training

All use of AI tools must comply with the [Policy for the responsible use of AI in government](#). Your use of AI tools should also comply with any guidance and any specific requirements from your entity’s accountable official under the Policy for the responsible use of AI in government.

The ACE strongly recommends that you complete the APS Learn course, [AI in government fundamentals](#). This course has been designed to provide all APS staff with foundational knowledge of AI, and the principles of safe and responsible use. Lastly, you can test a suite of AI tools on [GovAI](#). This is a secure, APS-only platform designed to help APS officers learn about and use artificial intelligence (AI).

² [Privacy Act 1988 - Federal Register of Legislation](#)