

PETMALU-AI

Complete Implementation Guide

A practical guide for authors, editors, reviewers, journals, institutions, and educators

Framework version	1.0
Website implementation version	2.0
Official checklist	33 items across 9 domains
Status	Supplementary implementation guide; official items unchanged

Important: Validated checklist content is identified separately from derived guidance and illustrative examples.

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Part I. Understanding PETMALU-AI

1. Purpose and scope

PETMALU-AI is a reporting checklist for transparent and accountable documentation of generative AI-assisted research writing. It moves beyond a generic statement that AI was used by asking authors to make the scope, materiality, human responsibility, technical context, prompting process, data involvement, validation, ethics, limitations, and reproducibility of AI-assisted work visible.

PETMALU-AI complements established reporting guidelines and journal policies. It does not replace PRISMA, CONSORT, STROBE, COREQ, or other study-design standards; it adds a cross-cutting layer for AI-use reporting.

Interpretation safeguard: PETMALU-AI does not determine whether AI use is ethically acceptable, certify accuracy, replace policy, require all 33 items in every manuscript, or provide an acceptance or rejection score.

2. Intended users

Authors and research teams

Use PETMALU-AI while the project is underway, when prompts, versions, output decisions, and validation records are still available.

Editors and peer reviewers

Use the checklist to assess whether applicable information is adequate, partial, missing, unclear, or not applicable. Do not create an automated publication threshold.

Journals and publishers

Embed proportionate reporting in author instructions, submission forms, editorial screening, and review forms.

Institutions and educators

Use the framework for research-integrity training, policy implementation, supervision, and audit-ready documentation.

Meta-researchers

Use structured item-level records to study AI use across fields, journals, and time.

3. Dimensions and domains

Dimension	Central concern	Domains
Authorship	Who contributes and remains accountable?	Disclosure and Scope; Human Accountability; Ethics and Compliance
Logging	How is the process documented and made traceable?	AI System Transparency; Prompting and Interaction; Reproducibility and Open Practices
Use	What functions did AI perform and with what consequences?	Data and AI-Generated Content; Validation and Quality Assurance; Limitations and Reflexivity

The dimensions organize the framework conceptually. The nine domains make the reporting process practical and itemized.

Part II. Determining Applicability

4. What counts as AI use

AI use may include generation, transformation, recommendation, summarization, translation, coding, classification, analysis support, synthetic data, visual creation, transcription, or editorial assistance. The relevant question is not only whether the software uses AI internally, but whether an AI-mediated function shaped research content, data, decisions, or reporting in a way that readers should be able to evaluate.

- Language and grammar editing
- Translation and transcription
- Drafting and restructuring
- Literature discovery, screening, summarization, and synthesis
- Code generation, debugging, and testing
- Data cleaning, classification, augmentation, and synthetic-data generation
- Statistical or qualitative analysis support
- Figures, diagrams, and graphical abstracts
- Peer-review, response-to-reviewer, and submission-material support

5. Materiality and proportional reporting

The paper provides provisional levels of AI use. These levels guide reporting depth; they are not validated shortened checklists.

Provisional level	Examples	Recommended depth	Suggested range
Minimal editorial assistance	Grammar checking, spelling correction, formatting suggestions, sentence-level polishing	Brief disclosure may be sufficient, especially if required by the journal. Authors should still confirm that the AI tool did not affect the study design, analysis, interpretation, or conclusions.	P1, P2, P3, P8, P20, P25
Moderate writing assistance	Reorganizing paragraphs, improving flow, summarizing author-provided notes, helping draft non-analytical sections	More detailed disclosure is recommended because AI may have shaped presentation, emphasis, or structure. Authors should describe the scope of use, output curation, and human verification.	P1–P4, P6–P8, P12–P15, P20, P22, P28–P30
Substantive research-process assistance	Assistance with coding, literature synthesis, data cleaning, qualitative categorization, statistical interpretation, or analytical planning	Detailed reporting is expected because AI may have influenced methodological or interpretive decisions. Authors should document prompts, validation, accountability, and limitations.	P1–P15, P20–P23, P24–P30, P31–P33
Data-generative or data-transformative assistance	Synthetic data generation, data augmentation, AI-generated examples, simulated cases, AI-assisted coding of empirical material	Full reporting is recommended because AI may affect the evidence base itself. Authors should document data origin, justification, generation process, safeguards, validation, and availability.	P1–P33, with particular emphasis on P16–P23, P26–P27, and P31–P33
No AI use	No generative AI tool was used in the research or manuscript preparation process	A statement may be included only if required by the journal or useful for transparency. PETMALU-AI is otherwise not applicable.	Not applicable, except a brief non-use statement if required

Proportional reporting: A brief disclosure may be sufficient for genuinely minor editorial assistance. More consequential use requires fuller reporting of prompting, data provenance, validation, ethics, limitations, and reproducibility.

6. Multiple functions and multiple tools

A project may use several systems for different tasks. Report each tool separately rather than collapsing all activity into one generic declaration.

Tool	Model/version	Access context	Dates	Purpose/ configuration
ChatGPT	GPT-4.1	Institutional enterprise web interface	June 2026	Language editing; no plugins
Claude	Sonnet	Public web interface	May 2026	Source-grounded literature summaries
GitHub Copilot	Current release	Visual Studio Code integration	April-June 2026	Code completion and unit tests

The website adds a separate multi-select function layer. This layer is supplementary implementation guidance and does not change the official framework.

7. Not applicable and no-AI declarations

Use Not Applicable only when the underlying AI use did not occur or an item is genuinely irrelevant. Missing reporting is not equivalent to non-applicability.

No-AI example: No generative AI system was used in the design, conduct, data collection, analysis, interpretation, or writing of this study. Conventional spelling, grammar, reference-management, and statistical software were used where applicable.

Part III. Guidance for Authors

8. Author workflow

1. Create a project record and identify the responsible author or team.
2. Inventory every AI tool, model, access context, date, purpose, and consequential configuration.
3. Select the provisional materiality level and all AI functions that occurred.
4. Review each suggested checklist item and adjust applicability.
5. Write project-specific reporting text for each applicable item.
6. Identify and resolve applicable items that remain undocumented.
7. Generate the output format required by the manuscript or submission system.
8. Export and archive the project JSON, item matrix, logs, and supporting materials.

Start documentation when AI is first used. Retrospective reconstruction near submission is more likely to miss model versions, rejected outputs, interaction cycles, and validation details.

9. Maintaining AI-use records

Tool inventory

Record product, model, access environment, dates, purpose, settings, and responsible user.

AI-use log

Record each task, input type, prompt reference, output decision, verifier, and validation method.

Prompt log

Record prompt text or template, source context, iteration, output identifier, and curation decision.

Output-review log

Record who checked the output, the comparator or criterion, errors found, correction, and approval.

Validation log

Record benchmarks, rubrics, expert ratings, accuracy or agreement results, and acceptance decisions.

Privacy checklist

Record data sensitivity, de-identification, access controls, provider terms, retention, and deletion.

10. Preparing manuscript outputs

Output	Best use
Journal AI-use declaration	Concise reporting for minimal or moderate use
Methods subsection	Substantive research-process assistance
Supplementary AI-use report	Complex, multi-tool, or data-transformative workflows
Itemized PETMALU-AI response	Submission forms, audits, peer-review responses
Cover-letter declaration	Editorial confirmation and location of detailed reporting
Ethics and privacy statement	P24-P27 reporting
Limitations and reproducibility paragraph	P28-P33 reporting

Information may appear across several manuscript sections. The report should remain coherent and easy to locate even when distributed.

11. Privacy, verification, validation, and robustness

Apply data minimization and do not enter identifiable, confidential, proprietary, copyrighted, embargoed, or security-sensitive information unless the access environment and policy permit it.

Process	Purpose	Examples
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Human verification	Check individual outputs	Source comparison, code review, bilingual review
Formal validation	Evaluate adequacy systematically	Benchmarks, expert ratings, predefined rubrics
Error and bias review	Detect task-specific distortions	Citation checking, subgroup review, error taxonomy
Robustness checks	Assess stability under variation	Repeated runs, prompt variants, model comparison

Part IV. Guidance for Editors and Reviewers

12. Reviewer workflow

9. Locate the authors' AI-use declaration and related sections.
10. Identify the apparent materiality and functions of AI use.
11. Determine likely applicable items.
12. Assess each item as Adequate, Partial, Not Reported, Unclear, or Not Applicable.
13. Record the manuscript evidence and item-specific revision needed.
14. Generate item-linked comments and apply substantive editorial judgment.

13. Item-linked feedback and non-scoring interpretation

Descriptive counts may summarize an assessment, but they should not be interpreted as a validated manuscript-quality score. Items are not necessarily equal in consequence, and applicability varies by workflow.

Suggested comment pattern: Please address PETMALU-AI item PXX (Item Title). State the missing reporting requirement, identify the evidence required, and explain where the revision should appear.

- Distinguish missing information from genuine non-applicability.
- Do not assume disclosure makes a use ethically acceptable.
- Evaluate the underlying method and policy compliance separately.
- Avoid requiring impossible verbatim reproducibility from non-deterministic systems.

Part V. Journals and Institutions

14. Adoption workflow

Suggested author-instruction language

Authors who use generative AI during research or manuscript preparation should report such use in accordance with PETMALU-AI. Reporting should be proportionate to the nature, scope, and materiality of AI involvement. Completion of the checklist does not replace the journal's authorship, ethics, data-protection, or research-integrity requirements.

Suggested peer-review question

Has the manuscript reported applicable PETMALU-AI items with enough detail to identify the AI system, scope and materiality of use, human accountability, interaction process, validation, ethical safeguards, limitations, and reproducibility information?

Suggested submission fields

- Was generative AI used?
- Which tools and models were used?
- What functions did the systems perform?
- Did AI affect data, analysis, interpretation, or conclusions?
- Where is the detailed PETMALU-AI report located?
- Are prompts, logs, or supporting materials available?

Editorial screening steps

15. Locate the AI-use declaration
16. Identify the claimed level and functions of AI use
17. Determine likely applicable items
18. Check for material omissions or contradictions
19. Request item-linked clarification rather than assigning an automated score
20. Apply journal policy and substantive editorial judgment

Journals should train editors and reviewers on proportional applicability, content provenance, privacy, non-determinism, and the distinction between reporting completeness and methodological quality.

15. Versioning and governance

Always identify both the framework version and the website implementation version. Additions to examples, guidance, interfaces, and templates should not be described as revisions to the validated checklist.

Component	Current version	Change status
Official PETMALU-AI framework	1.0	33 items unchanged
Website implementation	2.0	Additive guidance and tools
Legacy website	1.0	Included unchanged in the package

Part VI. Domain Guides

Domain 1: Disclosure and Scope of AI Use

SUPPLEMENTARY DOMAIN GUIDANCE

Establish that AI was used, identify the parts of the workflow it affected, and communicate how consequential that involvement was.

Central reporting question: Was AI used, where was it used, and did it influence only presentation or also substantive scholarly decisions?

How the items differ

P1 establishes the presence of AI use. P2 identifies the tasks or stages affected. P3 explains the materiality or scholarly significance of that involvement.

Common situations

- Any manuscript that used a generative AI system
- Use spanning several manuscript sections or research stages
- Cases where language support must be distinguished from methodological influence

Author responsibilities

- Place a visible declaration in the manuscript or submission system
- Name the tasks, stages, or sections affected
- State explicitly whether design, analysis, interpretation, or conclusions were influenced

Reviewer responsibilities

- Check that the declaration is easy to locate
- Compare the stated scope with signs of broader AI involvement
- Request clarification when the materiality of AI use remains ambiguous

Common mistakes

- Using a generic sentence such as “AI was used”
- Listing the tool without describing the task
- Claiming “minor use” without explaining what that means

Possible manuscript locations

AI-use declaration; Methods; Cover letter or submission form

Domain-level example

Generative AI was used for sentence-level editing and paragraph reorganization in the Introduction and Discussion. It was not used to identify sources, analyze data, interpret findings, or develop conclusions.

Items in this domain

P1 AI Use Disclosure Statement, P2 Scope of AI Involvement, P3 Materiality of AI Use

Domain 2: Human Accountability and Contribution

SUPPLEMENTARY DOMAIN GUIDANCE

Make human intellectual ownership, responsibility, prompt design, review, and final approval visible.

Central reporting question: Which decisions and contributions remained human, and who is accountable for

AI-assisted material?

How the items differ

P4 separates human and AI contributions. P5 confirms authorship compliance. P6 assigns accountability. P7 identifies responsibility for prompt design.

Common situations

- AI-generated text or code entered the work
- Several team members used AI for different tasks
- Prompt choices materially influenced outputs

Author responsibilities

- Describe the human decisions that shaped the final work
- Identify who reviewed and approved AI-assisted outputs
- Keep AI systems out of the author byline

Reviewer responsibilities

- Look for clear human responsibility rather than provider disclaimers
- Check that prompt design and output approval are assigned
- Confirm that AI is not represented as an author

Common mistakes

- Saying only that “authors remain responsible”
- Treating the AI system as a collaborator capable of accountability
- Failing to identify who designed prompts or approved outputs

Possible manuscript locations

Author-contribution statement; AI-use declaration; Methods

Domain-level example

The first author designed and refined the prompts. Two authors reviewed the outputs, and the corresponding author approved all AI-assisted text. The interpretations and conclusions were developed and finalized by the human authors.

Items in this domain

P4 Human–AI Contribution Delineation, P5 Authorship Compliance, P6 Accountability Assignment, P7 Prompt Design Responsibility

Domain 3: AI System Transparency

SUPPLEMENTARY DOMAIN GUIDANCE

Identify the technical system and access conditions that may affect output behavior, privacy, and reproducibility.

Central reporting question: Which system was used, in what version and environment, and with which settings?

How the items differ

P8 identifies the tool. P9 records the model or version. P10 explains how the system was accessed. P11 reports consequential configuration choices.

Common situations

- Use of web interfaces, APIs, enterprise accounts, or local models
- Use of plugins, retrieval, custom instructions, or changed parameters
- Work conducted across several dates or changing model releases

Author responsibilities

- Report product and model names as precisely as available
- Record dates of access when versions can change silently
- Describe custom settings, system prompts, plugins, or retrieval sources

Reviewer responsibilities

- Check whether the reported product name is sufficiently precise
- Look for version and access context when outputs may be time-sensitive
- Request configuration information when it could influence results

Common mistakes

- Reporting only “ChatGPT” or “an AI tool”
- Calling a model “the latest version”
- Omitting an enterprise, API, local, or third-party access context

Possible manuscript locations

Methods; Software and materials; Supplementary workflow record

Domain-level example

GPT-4.1 was accessed through the institution’s enterprise ChatGPT web interface between 10 and 18 June 2026. Default settings were used, and no plugins, custom GPTs, or external retrieval sources were enabled.

Items in this domain

P8 AI Tool Identification, P9 Model/Version Disclosure, P10 Access Context, P11 Configuration Disclosure

Domain 4: Prompting and Interaction Process

SUPPLEMENTARY DOMAIN GUIDANCE

Expose the human-AI interaction process through which outputs were elicited, refined, selected, rejected, and documented.

Central reporting question: How were prompts designed and iterated, and how did authors decide which outputs entered the work?

How the items differ

P12 describes the prompting strategy. P13 records iteration. P14 explains output curation. P15 states whether interaction records are available.

Common situations

- Repeated prompt-output cycles
- Use of structured prompt templates
- Selection among multiple candidate outputs
- Sharing or withholding prompt logs

Author responsibilities

- Describe the purpose and structure of prompts

- Explain major refinement cycles
- Document selection, editing, rejection, and record availability

Reviewer responsibilities

- Assess whether the interaction is described beyond a single example prompt
- Look for human curation rather than automatic insertion
- Consider whether logs can be shared ethically and usefully

Common mistakes

- Publishing one prompt while hiding extensive iteration
- Saying only that outputs were “edited”
- Claiming records are available without a location or access condition

Possible manuscript locations

Methods; Supplementary prompt appendix; Open materials or repository

Domain-level example

Structured prompts specified the source material, task, prohibited unsupported additions, and required output format. Drafts were refined across three cycles. The authors retained only source-supported passages and documented major prompts and revisions in a redacted supplement.

Items in this domain

P12 Prompting Approach Description, P13 Iterative Use Disclosure, P14 Output Curation Process, P15 Interaction Records Availability

Domain 5: Data and AI-Generated Content

SUPPLEMENTARY DOMAIN GUIDANCE

Clarify the provenance, justification, generation process, and availability of data or research content affected by AI.

Central reporting question: Did AI generate, transform, augment, classify, or otherwise alter the evidence base?

How the items differ

P16 identifies data origin. P17 justifies synthetic or generated data. P18 describes the generation or transformation procedure. P19 addresses availability.

Common situations

- Synthetic data generation
- Data augmentation or imputation
- AI-assisted coding, extraction, labeling, or transformation
- Mixed human-generated and AI-generated datasets

Author responsibilities

- Separate original, augmented, transformed, and synthetic data
- Explain why AI-generated data were scientifically necessary
- Provide protocols and access information where possible

Reviewer responsibilities

- Trace the provenance of every AI-affected data component

- Evaluate whether synthetic-data use is justified
- Check whether procedures and data can be audited

Common mistakes

- Calling synthetic data “additional observations”
- Omitting the source dataset or generation process
- Treating restricted access as equivalent to no availability statement

Possible manuscript locations

Methods; Data description; Data or materials availability statement

Domain-level example

The participant dataset was human-generated. AI was used after de-identification to classify open-ended responses. No synthetic participant records were added. The classification protocol, prompt template, and adjudicated labels are available in the repository.

Items in this domain

P16 Data Origin Transparency, P17 Justification for AI Data, P18 Data Generation Description, P19 Data Availability

Domain 6: Validation and Quality Assurance

SUPPLEMENTARY DOMAIN GUIDANCE

Make visible how authors checked accuracy, validity, bias, and stability of AI-assisted outputs.

Central reporting question: How did the research team determine that AI-assisted outputs were accurate, appropriate, and sufficiently reliable?

How the items differ

P20 concerns routine human verification. P21 concerns formal validation. P22 addresses hallucination, error, and bias. P23 examines stability across prompts, runs, systems, or settings.

Common situations

- AI-generated summaries, translations, classifications, analyses, code, or figures
- Tasks where an error could alter findings
- Non-deterministic outputs used for consequential decisions

Author responsibilities

- Identify who checked the outputs and against what evidence
- Describe formal benchmarks or criteria when used
- Report error, bias, and robustness procedures separately

Reviewer responsibilities

- Distinguish ordinary review from formal validation
- Look for task-specific error and bias controls
- Ask for robustness checks when variability could affect findings

Common mistakes

- Saying “all outputs were verified” without a method
- Treating a prompt instruction as a bias-mitigation procedure
- Claiming robustness after only one model response

Possible manuscript locations

Methods; Validation or quality-assurance subsection; Results or supplementary analyses

Domain-level example

Two authors checked each AI-assisted summary against the source article. Factual consistency was scored using a predefined rubric. Citation errors and biased framing were recorded and corrected. A sample was regenerated with an alternative prompt to assess stability.

Items in this domain

P20 Human Verification Process, P21 Validation Strategy, P22 Error and Bias Consideration, P23 Robustness Checks

Domain 7: Ethics and Compliance

SUPPLEMENTARY DOMAIN GUIDANCE

Address ethical responsibility, policy compliance, bias mitigation, privacy, confidentiality, and potential harm.

Central reporting question: Was the AI use permissible, responsible, privacy-preserving, and attentive to affected people and groups?

How the items differ

P24 addresses broader ethical implications. P25 confirms policy compliance. P26 describes bias mitigation. P27 explains privacy safeguards.

Common situations

- Use involving participant data, unpublished materials, or proprietary content
- AI outputs about people, cultures, languages, or protected groups
- Journal, funder, institutional, or legal restrictions

Author responsibilities

- Identify task-specific ethical risks
- Describe concrete privacy and bias safeguards
- Confirm compliance without presenting compliance as proof of quality

Reviewer responsibilities

- Check whether ethical statements address the actual workflow
- Look for data minimization and approved access conditions
- Assess whether bias mitigation is more than a neutrality instruction

Common mistakes

- Using generic ethical boilerplate
- Entering identifiable data without explaining safeguards
- Assuming journal permission resolves all ethical questions

Possible manuscript locations

Ethics statement; Data-protection statement; Methods or AI-use declaration

Domain-level example

No identifiable participant data were entered. De-identified excerpts were processed through an institutionally approved enterprise account. Two bilingual researchers reviewed outputs for cultural and linguistic bias, and the workflow complied with the journal and institutional AI policies.

Items in this domain

P24 Ethical Considerations, P25 Policy Compliance Statement, P26 Bias Mitigation, P27 Privacy Safeguards

Domain 8: Limitations and Reflexivity

SUPPLEMENTARY DOMAIN GUIDANCE

Acknowledge AI-related constraints and reflect on how AI may have shaped framing, organization, interpretation, or reproducibility.

Central reporting question: What influence and limitations did AI introduce even after human review?

How the items differ

P28 reports practical or epistemic limitations. P29 asks authors to reflect on AI influence. P30 identifies barriers to exact reproducibility.

Common situations

- AI influenced structure, emphasis, wording, or interpretation
- Outputs may lack context or representational nuance
- Proprietary or non-deterministic systems were used

Author responsibilities

- Name limitations specific to the task and system
- Reflect on possible influence on human choices
- Separate exact output replication from procedural reproducibility

Reviewer responsibilities

- Look for more than generic statements that AI can make mistakes
- Assess whether authors considered influence on framing
- Check that reproducibility constraints are realistic

Common mistakes

- Writing only “AI has limitations”
- Claiming no cognitive influence because humans approved the text
- Promising exact replication from a changing proprietary system

Possible manuscript locations

Discussion; Limitations; Reflexivity or reproducibility statement

Domain-level example

AI suggestions influenced the initial organization of the Discussion, although the authors restructured it around the study findings. Generated text may underrepresent contextual nuance. Exact outputs may differ because the system is non-deterministic and may be updated.

Items in this domain

P28 AI-Related Limitations, P29 Reflexive Consideration, P30 Reproducibility Constraints

Domain 9: Reproducibility and Open Practices

SUPPLEMENTARY DOMAIN GUIDANCE

Provide enough procedural detail and supporting material to trace and approximately reproduce the AI-assisted workflow over time.

Central reporting question: Can another researcher understand, audit, and approximate the reported AI workflow?

How the items differ

P31 assembles procedural reproducibility information. P32 addresses availability of supporting materials. P33 acknowledges model, interface, and policy evolution.

Common situations

- Complex or multi-step AI workflows
- Shared prompt templates, logs, code, or configurations
- Use of proprietary systems that may change

Author responsibilities

- Connect tool, version, prompts, inputs, iteration, curation, and validation
- Share supporting materials with legitimate redactions
- Date the workflow and acknowledge future system change

Reviewer responsibilities

- Assess whether the workflow is coherent rather than scattered
- Check repository links and access conditions
- Avoid demanding impossible verbatim reproduction from non-deterministic systems

Common mistakes

- Saying the workflow is reproducible because the tool name is reported
- Providing broken or nonpersistent links
- Ignoring the possibility of provider updates

Possible manuscript locations

Methods; Supplementary protocol; Open repository or reproducibility statement

Domain-level example

The supplement reports the tool, model, access dates, prompt templates, input sources, curation decisions, and validation procedures. Redacted logs and code are archived in a persistent repository. Future outputs may differ as the provider updates the model and interface.

Items in this domain

P31 Reproducibility Information, P32 Materials Availability, P33 System Evolution Disclaimer

Part VII. Item-by-Item Implementation Guidance

P1: AI Use Disclosure Statement

VALIDATED PETMALU-AI CONTENT

Official reporting description

Provide a clear statement describing the use of AI in the study

Validated rationale

Ensures transparency by requiring an explicit declaration that AI was used during the research or writing process.

Validated example

AI tools were used during manuscript preparation.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

State plainly that AI was used; do not force readers to infer it from tool names or acknowledgments.

When it applies

Whenever a generative or other AI system contributed to research, analysis, writing, editing, translation, coding, data work, figures, or publication preparation.

When it may be not applicable

Only when no AI system was used. A journal may still request a brief non-use declaration.

Minimum information

- A direct statement that AI was used
- A visible location in the manuscript or submission
- No euphemistic wording that conceals AI involvement

Common reporting weakness

The statement is hidden, vague, or uses “AI assistance” without saying what system or activity was involved.

Suggested reviewer comment

Please address PETMALU-AI item P1 (AI Use Disclosure Statement). Provide a clear statement describing the use of AI in the study. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: AI-use declaration; Methods; Cover letter or submission form

Related items: P2, P3, P25

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: Generative AI was used during preparation of the manuscript.

Improved illustrative example: The authors used ChatGPT and GitHub Copilot during writing and code development; the specific uses are reported in the Methods.

Comprehensive illustrative example: Generative AI contributed to literature summarization, code drafting, and language revision. All uses are itemized in the supplementary AI-use report.

P2: Scope of AI Involvement

VALIDATED PETMALU-AI CONTENT

Official reporting description

Specify the functional areas where AI was used in the research process

Validated rationale

Clarifies the specific stages or tasks in which AI contributed to the research or writing workflow.

Validated example

AI was used for literature summarization, language editing, and code generation.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

List the exact tasks, stages, sections, or outputs affected by AI.

When it applies

Whenever AI performed one or more identifiable functions or affected particular manuscript sections or research stages.

When it may be not applicable

When P1 is not applicable because no AI was used.

Minimum information

- The task or function performed
- The research stage or manuscript section affected
- Any important boundaries on use

Common reporting weakness

The report says AI helped with the paper but does not identify tasks, stages, or sections.

Suggested reviewer comment

Please address PETMALU-AI item P2 (Scope of AI Involvement). Specify the functional areas where AI was used in the research process. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: AI-use declaration; Methods; Cover letter or submission form

Related items: P1, P3, P4

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: AI was used only to correct grammar in the Introduction and Discussion.

Improved illustrative example: AI supported paragraph restructuring, translation of selected quotations, and generation of code comments.

Comprehensive illustrative example: AI was used during literature synthesis, qualitative classification, statistical-code debugging, and preparation of the graphical abstract; it was not used to recruit participants or collect data.

P3: Materiality of AI Use

VALIDATED PETMALU-AI CONTENT

Official reporting description

Indicate whether AI use was minor support or a substantial contribution

Validated rationale

Distinguishes minor language or formatting support from AI use that may have influenced study design, analysis, interpretation, or conclusions.

Validated example

AI was used only for language editing and did not influence study design, analysis, interpretation, or conclusions.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Explain whether AI changed only surface presentation or could have influenced substantive scholarly decisions.

When it applies

Whenever readers could reasonably be uncertain whether AI use was merely editorial or substantively influential.

When it may be not applicable

When no AI was used; otherwise authors should make at least a brief materiality judgment.

Minimum information

- Whether use was minor or substantive
- Whether design, analysis, interpretation, or conclusions were affected
- A brief justification of that classification

Common reporting weakness

The authors call the use minor without stating whether scholarly decisions were affected.

Suggested reviewer comment

Please address PETMALU-AI item P3 (Materiality of AI Use). Indicate whether AI use was minor support or a substantial contribution. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: AI-use declaration; Methods; Cover letter or submission form

Related items: P2, P28, P29

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: AI use was limited to surface-level language correction.

Improved illustrative example: AI influenced the organization and wording of selected sections but did not affect analysis or conclusions.

Comprehensive illustrative example: AI contributed to coding and evidence synthesis and therefore may have influenced methodological and interpretive decisions; these contributions and safeguards are reported in detail.

P4: Human-AI Contribution Delineation

VALIDATED PETMALU-AI CONTENT

Official reporting description

Distinguish between human contributions and AI-assisted outputs

Validated rationale

Clarifies which parts of the manuscript or research process were produced, shaped, or finalized by human authors and which were assisted by AI.

Validated example

All interpretations and conclusions were developed and finalized by the authors.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Separate what the AI suggested or generated from what human authors decided, interpreted, and finalized.

When it applies

Whenever AI generated, transformed, summarized, recommended, classified, or revised material used in the work.

When it may be not applicable

When no AI-generated or AI-transformed material entered the work.

Minimum information

- What AI assisted
- What humans decided or finalized
- How outputs were integrated

Common reporting weakness

The report asserts human control but does not identify the human decisions or AI contributions.

Suggested reviewer comment

Please address PETMALU-AI item P4 (Human–AI Contribution Delineation). Distinguish between human contributions and AI-assisted outputs. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Author-contribution statement; AI-use declaration; Methods

Related items: P5, P6, P14

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: The authors wrote and approved the final text; AI provided sentence-level suggestions.

Improved illustrative example: AI generated preliminary summaries, while the authors selected sources, corrected the summaries, and developed the synthesis.

Comprehensive illustrative example: The model proposed candidate codes and text, but human researchers defined the analytic framework, adjudicated all decisions, interpreted findings, and finalized the manuscript.

P5: Authorship Compliance

VALIDATED PETMALU-AI CONTENT

Official reporting description

Confirm that AI systems are not listed as authors in the manuscript

Validated rationale

Ensures that authorship is limited to accountable human contributors and that AI systems are not credited as authors.

Validated example

No AI system is listed as an author in this manuscript.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Confirm that only accountable humans receive authorship credit.

When it applies

All manuscripts in which AI was used.

When it may be not applicable

When no AI system was used; human-only authorship rules still apply independently.

Minimum information

- No AI system in the byline
- Confirmation of applicable authorship requirements
- Human acceptance of responsibility

Common reporting weakness

The AI system is described as an author, coauthor, or contributor capable of responsibility.

Suggested reviewer comment

Please address PETMALU-AI item P5 (Authorship Compliance). Confirm that AI systems are not listed as authors in the manuscript. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Author-contribution statement; AI-use declaration; Methods

Related items: P4, P6, P25

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: No AI system is listed as an author.

Improved illustrative example: All named authors meet the journal's authorship criteria, and the AI tools used are acknowledged only as tools.

Comprehensive illustrative example: The human authors accept responsibility for the accuracy, originality, integrity, and final approval of all AI-assisted material.

P6: Accountability Assignment

VALIDATED PETMALU-AI CONTENT

Official reporting description

Identify the author(s) responsible for AI-assisted content and outputs

Validated rationale

Identifies the human author or authors responsible for reviewing, verifying, and approving AI-assisted content or outputs.

Validated example

The corresponding author assumes responsibility for all AI-assisted sections.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Name the person or team responsible for checking and approving AI-assisted material.

When it applies

Whenever AI-assisted content, data, code, or decisions entered the scholarly workflow.

When it may be not applicable

When no AI-assisted output entered the work.

Minimum information

- The responsible person or team
- The responsibility assigned
- Final review or approval

Common reporting weakness

Responsibility is assigned to “the authors” or the provider without identifying who checked and approved outputs.

Suggested reviewer comment

Please address PETMALU-AI item P6 (Accountability Assignment). Identify the author(s) responsible for AI-assisted content and outputs. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Author-contribution statement; AI-use declaration; Methods

Related items: P4, P7, P20

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: The corresponding author approved all AI-assisted edits.

Improved illustrative example: The analysis team reviewed AI-generated code, and the first author approved AI-assisted manuscript text.

Comprehensive illustrative example: Responsibility was assigned by task: two authors verified literature summaries, the statistician approved generated code, and the corresponding author approved the final report.

P7: Prompt Design Responsibility

VALIDATED PETMALU-AI CONTENT

Official reporting description

Specify who designed, refined, and validated the prompts used

Validated rationale

Specifies who designed, refined, and approved the prompts used to generate or revise AI-assisted outputs.

Validated example

Prompts were designed, reviewed, and refined by the first author.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Identify who created, refined, standardized, and approved consequential prompts.

When it applies

When prompts materially shaped generated or transformed outputs.

When it may be not applicable

When no consequential prompts were used, such as a purely automated non-generative function with no user prompting.

Minimum information

- Who designed prompts
- Who refined or standardized them
- Who approved their use

Common reporting weakness

Prompts are mentioned, but no person or team is identified as responsible for their design.

Suggested reviewer comment

Please address PETMALU-AI item P7 (Prompt Design Responsibility). Specify who designed, refined, and validated the prompts used. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Author-contribution statement; AI-use declaration; Methods

Related items: P12, P13, P14

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: The first author designed the prompts.

Improved illustrative example: Two authors developed and piloted a standardized prompt template before use.

Comprehensive illustrative example: Prompt design, refinement, and approval were documented in a version-controlled protocol and reviewed by the methodological and domain leads.

P8: AI Tool Identification

VALIDATED PETMALU-AI CONTENT

Official reporting description

Identify all AI tools used in the research and writing process

Validated rationale

Identifies the specific AI tool or platform used to support traceability and interpretation of AI-assisted outputs.

Validated example

The study used ChatGPT for drafting assistance.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Name each AI product, platform, or model family used.

When it applies

Whenever an AI system was used.

When it may be not applicable

When no AI was used.

Minimum information

- Product or platform name
- Separate identification of each tool
- Enough detail to distinguish it from generic AI

Common reporting weakness

Only a generic label such as “AI chatbot” is provided.

Suggested reviewer comment

Please address PETMALU-AI item P8 (AI Tool Identification). Identify all AI tools used in the research and writing process. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Software and materials; Supplementary workflow record

Related items: P9, P10, P11

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: ChatGPT was used for language editing.

Improved illustrative example: Claude was used for source-grounded summaries and GitHub Copilot for code completion.

Comprehensive illustrative example: The workflow used GPT-4.1 through ChatGPT, Claude Sonnet through its web interface, and a locally deployed embedding model; each tool's role is reported separately.

P9: Model/Version Disclosure

VALIDATED PETMALU-AI CONTENT

Official reporting description

Specify the AI model or version used where relevant to the study

Validated rationale

Reports the AI model, version, or system release when such information is available and relevant to output interpretation.

Validated example

GPT-4 architecture was used during manuscript preparation.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Record the model, version, release, and access date as precisely as the platform allows.

When it applies

When model or version information is available or likely to affect interpretation or reproducibility.

When it may be not applicable

When the system did not expose version information; report that limitation rather than silently omitting it.

Minimum information

- Model or release name when available
- Access date or period
- A statement when version data were unavailable

Common reporting weakness

The report says “latest version” or omits the date despite a changing system.

Suggested reviewer comment

Please address PETMALU-AI item P9 (Model/Version Disclosure). Specify the AI model or version used where relevant to the study. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Software and materials; Supplementary workflow record

Related items: P8, P10, P33

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: GPT-4.1 was used in June 2026.

Improved illustrative example: The provider displayed the model as Claude 4 Sonnet; access occurred from 3 to 12 July 2026.

Comprehensive illustrative example: The model identifier returned by the API, software-library version, and dates of each run are archived with the workflow record; the public interface did not expose a more granular release number.

P10: Access Context

VALIDATED PETMALU-AI CONTENT

Official reporting description

Describe how the AI system was accessed or integrated into the workflow

Validated rationale

Describes how the AI system was accessed or integrated into the research or writing workflow.

Validated example

The tool was accessed through a web-based interface.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Explain whether access occurred through a public website, API, enterprise account, local deployment, or integration.

When it applies

When access conditions affect features, privacy, integration, or reproducibility.

When it may be not applicable

Rarely; even basic web access can usually be reported briefly.

Minimum information

- Web, API, enterprise, local, or integrated access
- Relevant institutional environment
- Any third-party interface

Common reporting weakness

The report does not distinguish a public interface from an API, enterprise, local, or integrated environment.

Suggested reviewer comment

Please address PETMALU-AI item P10 (Access Context). Describe how the AI system was accessed or integrated into the workflow. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Software and materials; Supplementary workflow record

Related items: P8, P11, P27

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: The tool was accessed through its public web interface.

Improved illustrative example: The system was used through an institutionally approved enterprise account.

Comprehensive illustrative example: Text generation occurred through an API in a controlled research environment, while code suggestions were delivered through a Visual Studio Code integration.

P11: Configuration Disclosure

VALIDATED PETMALU-AI CONTENT

Official reporting description

Report relevant system settings if they influence generated outputs

Validated rationale

Reports relevant settings, parameters, or configuration choices that may have influenced AI-generated outputs.

Validated example

Default settings were used without parameter modification.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Report settings, custom instructions, retrieval sources, plugins, or parameters that could change outputs.

When it applies

When any setting, custom instruction, plugin, retrieval source, or parameter may have influenced outputs.

When it may be not applicable

When default settings were used and no consequential configuration was available; state that default settings were used.

Minimum information

- Default or modified settings
- Consequential parameters or custom instructions
- Retrieval, plugin, or configuration information

Common reporting weakness

Consequential custom instructions or settings are omitted, or “standard settings” is left undefined.

Suggested reviewer comment

Please address PETMALU-AI item P11 (Configuration Disclosure). Report relevant system settings if they influence generated outputs. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Software and materials; Supplementary workflow record

Related items: P9, P12, P23

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: Default settings were used.

Improved illustrative example: Default sampling settings were used, with a custom instruction prohibiting unsupported additions.

Comprehensive illustrative example: Temperature, maximum output length, system prompt, retrieval corpus, and enabled tools are reported in the configuration file; no unreported plugins were active.

P12: Prompting Approach Description

VALIDATED PETMALU-AI CONTENT

Official reporting description

Describe the general prompting strategy used to generate outputs

Validated rationale

Describes the general structure, purpose, or strategy of prompts used to guide AI-generated outputs.

Validated example

Structured prompts were used to guide paragraph generation and revision.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Describe how prompts defined the task, source constraints, audience, role, format, and prohibited behavior.

When it applies

When prompts guided generation, revision, summarization, coding, classification, analysis, or interpretation.

When it may be not applicable

When the system performed no prompt-driven interaction.

Minimum information

- Prompt purpose
- Source or task constraints
- Expected output structure or strategy

Common reporting weakness

A prompt example is provided without explaining the overall prompting strategy.

Suggested reviewer comment

Please address PETMALU-AI item P12 (Prompting Approach Description). Describe the general prompting strategy used to generate outputs. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Supplementary prompt appendix; Open materials or repository

Related items: P7, P13, P31

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: Prompts requested grammar correction without changing meaning.

Improved illustrative example: Structured prompts identified the source text, task, audience, and required output format.

Comprehensive illustrative example: The prompting protocol specified source-grounding, exclusion criteria, uncertainty reporting, output schema, and prohibited inferential additions; templates are provided in the supplement.

P13: Iterative Use Disclosure

VALIDATED PETMALU-AI CONTENT

Official reporting description

Indicate whether outputs were generated through iterative refinement

Validated rationale

Documents whether AI outputs were generated through repeated prompt-output cycles or progressive refinement.

Validated example

Outputs were iteratively refined across three prompt cycles.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Make repeated cycles and progressive refinement visible rather than presenting the result as a one-shot interaction.

When it applies

When the final output resulted from follow-up prompts, repeated runs, or progressive refinement.

When it may be not applicable

When only one interaction occurred; state that no iterative refinement was used if relevant.

Minimum information

- Whether iteration occurred
- Major refinement stages
- Approximate cycles when informative

Common reporting weakness

The report presents a polished final output as if it came from a single interaction.

Suggested reviewer comment

Please address PETMALU-AI item P13 (Iterative Use Disclosure). Indicate whether outputs were generated through iterative refinement. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Supplementary prompt appendix; Open materials or repository

Related items: P12, P14, P15

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: Each passage was processed in a single prompt.

Improved illustrative example: Outputs were refined across three prompt-response cycles focused on structure, accuracy, and terminology.

Comprehensive illustrative example: The workflow included initial generation, source-check feedback, revision, and final formatting cycles; the number and purpose of interactions are recorded for each task.

P14: Output Curation Process

VALIDATED PETMALU-AI CONTENT

Official reporting description

Explain how AI-generated outputs were selected, edited, or rejected

Validated rationale

Explains how AI-generated outputs were selected, edited, accepted, rejected, or integrated into the manuscript.

Validated example

Generated text was reviewed, selectively retained, and manually edited for accuracy and fit.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Explain how humans accepted, rejected, combined, rewritten, or excluded generated outputs.

When it applies

Whenever authors selected, edited, accepted, rejected, combined, or inserted AI outputs.

When it may be not applicable

When no generated output was considered or incorporated.

Minimum information

- How outputs were selected
- How they were edited or rewritten

- How rejected outputs were handled

Common reporting weakness

The authors say outputs were edited but do not explain selection, rejection, or substantive rewriting.

Suggested reviewer comment

Please address PETMALU-AI item P14 (Output Curation Process). Explain how AI-generated outputs were selected, edited, or rejected. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Supplementary prompt appendix; Open materials or repository

Related items: P4, P13, P20

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: Authors accepted only changes that preserved the original meaning.

Improved illustrative example: Generated paragraphs were compared, selectively retained, rewritten, and integrated by the authors.

Comprehensive illustrative example: All outputs were logged as accepted, revised, or rejected using predefined criteria; unsupported or redundant outputs were excluded and substantive edits are visible in the revision record.

P15: Interaction Records Availability

VALIDATED PETMALU-AI CONTENT

Official reporting description

Indicate whether interaction logs are available when necessary

Validated rationale

Indicates whether prompts, outputs, or workflow records are available to support auditability or verification when appropriate.

Validated example

Prompt logs and major output revisions are available upon reasonable request.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

State what interaction records exist, where they can be accessed, and what ethical or legal restrictions apply.

When it applies

When interaction records would aid auditability and can be shared ethically and legally.

When it may be not applicable

When no records exist or sharing would violate privacy, confidentiality, copyright, security, or policy; explain the reason.

Minimum information

- Which records exist
- Where or how they can be accessed
- Restrictions, redactions, or conditions

Common reporting weakness

Availability is claimed without a repository, supplement, access route, or restriction statement.

Suggested reviewer comment

Please address PETMALU-AI item P15 (Interaction Records Availability). Indicate whether interaction logs are available when necessary. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Supplementary prompt appendix; Open materials or repository

Related items: P13, P31, P32

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: Prompt templates are included in the supplement.

Improved illustrative example: Redacted prompts and major outputs are available in the project repository.

Comprehensive illustrative example: The repository contains dated prompt templates, selected outputs, rejection decisions, and revision histories; sensitive source text has been redacted under the stated access policy.

P16: Data Origin Transparency

VALIDATED PETMALU-AI CONTENT

Official reporting description

Classify data sources as human-generated, AI-generated, or AI-augmented

Validated rationale

Identifies whether data used or discussed in the study were human-generated, AI-generated, AI-augmented, or derived from existing sources.

Validated example

All datasets were human-generated; no synthetic data were used.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Trace whether data or research content were human-generated, AI-generated, augmented, transformed, or derived.

When it applies

When AI generated, transformed, augmented, extracted, labeled, summarized, or classified data or research materials.

When it may be not applicable

When AI did not generate, modify, classify, or transform data or research content.

Minimum information

- Origin of each relevant data component
- Whether data were generated, augmented, or transformed
- Separation of human and AI-derived material

Common reporting weakness

AI-affected data are described without distinguishing original, augmented, synthetic, or transformed components.

Suggested reviewer comment

Please address PETMALU-AI item P16 (Data Origin Transparency). Classify data sources as human-generated, AI-generated, or AI-augmented. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Data description; Data or materials availability statement

Related items: P17, P18, P19

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: All study data were human-generated.

Improved illustrative example: Participant data were human-generated, while AI produced de-identified classification labels.

Comprehensive illustrative example: The final analytic file contains original observations, AI-augmented training cases, and human-adjudicated labels; each component is identified by provenance fields.

P17: Justification for AI Data

VALIDATED PETMALU-AI CONTENT

Official reporting description

Provide justification for the use of AI-generated or synthetic data

Validated rationale

Explains the rationale for using AI-generated or synthetic data when such data are included in the study.

Validated example

Synthetic data were used to simulate rare scenarios.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Provide a scientific or practical reason for using synthetic or AI-generated data.

When it applies

When synthetic, simulated, or AI-generated data are included.

When it may be not applicable

When no synthetic or AI-generated data were used.

Minimum information

- The reason for synthetic or generated data
- Why available real data were insufficient
- Acknowledgment of representativeness risks

Common reporting weakness

Synthetic data are justified only by convenience or larger sample size.

Suggested reviewer comment

Please address PETMALU-AI item P17 (Justification for AI Data). Provide justification for the use of AI-generated or synthetic data. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Data description; Data or materials availability statement

Related items: P16, P18, P28

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: Synthetic examples were used to test the software under rare conditions.

Improved illustrative example: Synthetic records were generated because the available dataset contained too few examples of critical failure cases.

Comprehensive illustrative example: AI-generated data were used only for sensitivity analysis to evaluate rare-event performance; they were not treated as additional real participants, and their representativeness limitations are reported.

P18: Data Generation Description

VALIDATED PETMALU-AI CONTENT

Official reporting description

Describe how AI was used to generate or modify data in the study

Validated rationale

Describes how AI was used to generate, transform, augment, or modify data in the research process.

Validated example

AI was used to augment missing data points.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Describe inputs, model procedure, transformation steps, screening, and human oversight for AI-affected data.

When it applies

Whenever AI directly affected research data, labels, analytic inputs, or generated examples.

When it may be not applicable

When AI did not affect data or analytic inputs.

Minimum information

- Input data or source material
- Generation or transformation steps
- Screening and human oversight

Common reporting weakness

The report names data augmentation or classification without operational steps or oversight.

Suggested reviewer comment

Please address PETMALU-AI item P18 (Data Generation Description). Describe how AI was used to generate or modify data in the study. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Data description; Data or materials availability statement

Related items: P16, P19, P21

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: AI generated paraphrased training examples from the original dataset.

Improved illustrative example: A language model classified de-identified responses using a fixed prompt and predefined codebook.

Comprehensive illustrative example: The data-generation pipeline, input filters, model configuration, duplicate detection, plausibility screening, and human adjudication procedure are documented step by step.

P19: Data Availability

VALIDATED PETMALU-AI CONTENT

Official reporting description

Indicate whether datasets or data generation protocols are accessible

Validated rationale

Indicates whether datasets, AI-generated data, or data-generation protocols are accessible for verification or reuse.

Validated example

The dataset is available in an open-access repository.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Explain how readers can access AI-affected datasets or protocols, or why access is restricted.

When it applies

When AI-affected data or protocols can be shared or when restrictions need explanation.

When it may be not applicable

When there are no AI-affected data or protocols to make available.

Minimum information

- What data or protocols are shared
- A persistent access route or procedure
- Explanation of restrictions

Common reporting weakness

The availability statement does not identify what is shared or why access is restricted.

Suggested reviewer comment

Please address PETMALU-AI item P19 (Data Availability). Indicate whether datasets or data generation protocols are accessible. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Data description; Data or materials availability statement

Related items: P15, P18, P32

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: The AI-generated examples are available in the supplement.

Improved illustrative example: The de-identified labels and generation protocol are available in an open repository.

Comprehensive illustrative example: Reusable synthetic data, source-to-output provenance, prompt templates, and screening scripts are archived; restricted raw data remain available only through controlled access.

P20: Human Verification Process

VALIDATED PETMALU-AI CONTENT

Official reporting description

Describe how AI-generated outputs were reviewed and verified by humans

Validated rationale

Documents author review of AI-generated outputs for accuracy, appropriateness, and alignment with the manuscript.

Validated example

All AI-generated outputs were checked by the authors before inclusion.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Identify who checked AI outputs, what they checked, what they checked against, and how errors were resolved.

When it applies

Whenever AI outputs informed the manuscript, code, data, analysis, figures, or research decisions.

When it may be not applicable

When no AI output entered the manuscript or research workflow.

Minimum information

- Who verified outputs
- What was checked and against what
- How errors were corrected or excluded

Common reporting weakness

The report says outputs were checked but does not identify the verifier, evidence, or correction process.

Suggested reviewer comment

Please address PETMALU-AI item P20 (Human Verification Process). Describe how AI-generated outputs were reviewed and verified by humans. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Validation or quality-assurance subsection; Results or supplementary analyses

Related items: P14, P21, P22

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: All AI-assisted text was reviewed before inclusion.

Improved illustrative example: Two authors checked summaries against the original sources and removed unsupported claims.

Comprehensive illustrative example: Every AI-affected output was assigned a verifier, comparator, result, and corrective action in an output-review log; no unverified output entered the final analysis or manuscript.

P21: Validation Strategy

VALIDATED PETMALU-AI CONTENT

Official reporting description

Report any formal validation procedures applied to AI-assisted outputs

Validated rationale

Reports formal or external procedures used to evaluate the accuracy, reliability, or adequacy of AI-assisted outputs.

Validated example

Generated summaries were compared with source documents and benchmark references.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Describe a formal validation method such as source comparison, expert rating, benchmark testing, or a predefined rubric.

When it applies

When AI outputs contributed materially to evidence synthesis, translation, classification, analysis, or another consequential task.

When it may be not applicable

When AI use was minimal and formal validation would add no meaningful information; routine verification may still apply.

Minimum information

- Validation criterion or benchmark
- Who or what performed the validation
- Where results are reported

Common reporting weakness

The word “validated” appears without a criterion, comparator, procedure, or result.

Suggested reviewer comment

Please address PETMALU-AI item P21 (Validation Strategy). Report any formal validation procedures applied to AI-assisted outputs. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Validation or quality-assurance subsection; Results or supplementary analyses

Related items: P20, P22, P23

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: Translations were checked by a bilingual researcher.

Improved illustrative example: Generated classifications were compared with expert-coded benchmark cases using predefined accuracy criteria.

Comprehensive illustrative example: Validation combined source comparison, blinded expert ratings, inter-rater agreement, and task-specific benchmark testing; results and acceptance thresholds are reported.

P22: Error and Bias Consideration

VALIDATED PETMALU-AI CONTENT

Official reporting description

Acknowledge potential errors, biases, or hallucinations in AI outputs

Validated rationale

Acknowledges and addresses potential hallucinations, omissions, citation errors, biased framing, or other AI-related distortions.

Validated example

Potential hallucinations, citation errors, and biased framing were evaluated during revision.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Address task-specific hallucinations, citation problems, omissions, bias, mistranslation, or other distortions.

When it applies

Whenever AI could introduce factual, representational, linguistic, citation, or analytic distortion.

When it may be not applicable

When no AI output was used; otherwise at least task-relevant error consideration is normally expected.

Minimum information

- Relevant error or bias risks
- Detection or correction procedure
- Residual limitations

Common reporting weakness

The model was instructed not to hallucinate or be biased, but no independent detection procedure is reported.

Suggested reviewer comment

Please address PETMALU-AI item P22 (Error and Bias Consideration). Acknowledge potential errors, biases, or hallucinations in AI outputs. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Validation or quality-assurance subsection; Results or supplementary analyses

Related items: P20, P21, P26

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: References and factual claims were checked manually.

Improved illustrative example: The team screened for hallucinated citations, omitted caveats, and biased framing.

Comprehensive illustrative example: A structured error taxonomy covered fabrication, citation mismatch, omission, mistranslation, demographic bias, and unsupported inference; residual errors and mitigation limits are reported.

P23: Robustness Checks

VALIDATED PETMALU-AI CONTENT

Official reporting description

Report consistency or sensitivity checks across prompts or system runs

Validated rationale

Assesses whether AI-generated outputs remained consistent across alternative prompts, repeated runs, or system variations.

Validated example

Outputs were compared across multiple prompt variations to assess consistency.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Test whether consequential outputs remain sufficiently consistent under repeated or alternative conditions.

When it applies

When output variability could change classifications, findings, interpretations, or decisions.

When it may be not applicable

When output variability could not affect any scholarly result or decision; explain why no robustness check was needed for substantive uses.

Minimum information

- What condition was varied
- How consistency was judged
- How instability was handled

Common reporting weakness

Consistency is claimed from a single run or a single prompt.

Suggested reviewer comment

Please address PETMALU-AI item P23 (Robustness Checks). Report consistency or sensitivity checks across prompts or system runs. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Validation or quality-assurance subsection; Results or supplementary analyses

Related items: P11, P21, P30

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: A sample of outputs was regenerated to check consistency.

Improved illustrative example: Classifications were compared across three runs and two prompt formulations.

Comprehensive illustrative example: Robustness analyses varied prompt wording, model seed where available, model version, and reviewer; unstable cases were excluded or resolved through human adjudication.

P24: Ethical Considerations

VALIDATED PETMALU-AI CONTENT

Official reporting description

Address relevant ethical implications of using AI in the study

Validated rationale

Addresses ethical issues raised by AI use in the study, including fairness, transparency, responsibility, and potential harm.

Validated example

Ethical implications of AI-generated content were considered.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Connect ethical reasoning to the actual AI task, affected stakeholders, and possible harms.

When it applies

Whenever the chosen AI use creates task-specific ethical implications or stakeholder risks.

When it may be not applicable

When no AI was used; for AI-assisted work, relevance depends on the actual ethical stakes.

Minimum information

- The ethical issue
- Potentially affected stakeholders or harms
- Safeguards or reasoning

Common reporting weakness

A generic sentence says ethical issues were considered without identifying any issue, stakeholder, or safeguard.

Suggested reviewer comment

Please address PETMALU-AI item P24 (Ethical Considerations). Address relevant ethical implications of using AI in the study. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Ethics statement; Data-protection statement; Methods or AI-use declaration

Related items: P25, P26, P27

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: The team considered transparency and potential harm.

Improved illustrative example: Researchers considered whether automated summaries could erase minority perspectives and retained human interpretation.

Comprehensive illustrative example: The ethical analysis addressed stakeholder impact, representational harm, labor and authorship concerns, environmental and access implications, and proportional safeguards for each use.

P25: Policy Compliance Statement

VALIDATED PETMALU-AI CONTENT

Official reporting description

Confirm compliance with institutional or publisher AI guidelines

Validated rationale

Confirms adherence to relevant institutional, publisher, journal, or professional guidelines on AI use.

Validated example

The study complies with journal AI use policies.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Identify applicable journal, publisher, institutional, professional, funder, or legal requirements.

When it applies

All AI-assisted submissions.

When it may be not applicable

When no AI was used, although a journal may request a non-use declaration.

Minimum information

- Applicable policy context
- A clear compliance statement
- Any unresolved conflict or limitation

Common reporting weakness

The report says AI use was allowed without naming the relevant policy context.

Suggested reviewer comment

Please address PETMALU-AI item P25 (Policy Compliance Statement). Confirm compliance with institutional or publisher AI guidelines. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Ethics statement; Data-protection statement; Methods or AI-use declaration

Related items: P1, P5, P24

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: The manuscript follows the journal's AI disclosure policy.

Improved illustrative example: The workflow complied with journal authorship rules and institutional data-protection requirements.

Comprehensive illustrative example: Compliance was checked against journal, publisher, institution, funder, professional, and applicable legal requirements; any differences were resolved before submission.

P26: Bias Mitigation

VALIDATED PETMALU-AI CONTENT

Official reporting description

Describe any steps taken to mitigate bias in AI-assisted processes

Validated rationale

Describes steps taken to reduce, detect, or manage bias introduced through AI-assisted processes or outputs.

Validated example

Bias mitigation strategies included manual review and filtering.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Describe concrete steps for detecting, reducing, or managing relevant bias.

When it applies

When AI outputs involve people, groups, languages, cultures, classification, prioritization, or representation.

When it may be not applicable

When the task had no plausible bias or representational implication; authors should avoid declaring N/A without considering the task.

Minimum information

- Relevant bias type
- Concrete mitigation or review procedure
- Residual bias limitation

Common reporting weakness

The authors rely only on a “be neutral” prompt as bias mitigation.

Suggested reviewer comment

Please address PETMALU-AI item P26 (Bias Mitigation). Describe any steps taken to mitigate bias in AI-assisted processes. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Ethics statement; Data-protection statement; Methods or AI-use declaration

Related items: P22, P24, P27

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: Authors reviewed outputs for stereotyped or exclusionary language.

Improved illustrative example: Bias mitigation included balanced source selection and independent domain review.

Comprehensive illustrative example: The team assessed demographic, linguistic, geographic, and disciplinary bias using stratified test cases, multiple reviewers, and documented correction rules; residual bias is discussed.

P27: Privacy Safeguards

VALIDATED PETMALU-AI CONTENT

Official reporting description

Ensure that no sensitive or identifiable data were improperly used

Validated rationale

Explains how sensitive, confidential, proprietary, or identifiable information was protected when using AI systems.

Validated example

No personal or identifiable data were processed by AI systems.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Explain how sensitive, confidential, proprietary, copyrighted, or identifiable information was protected.

When it applies

Whenever prompts, uploads, or connected sources could contain nonpublic, sensitive, copyrighted, proprietary, or identifiable information.

When it may be not applicable

When no nonpublic or sensitive information was processed; a brief statement may still be useful.

Minimum information

- Whether sensitive data were entered
- Data minimization or de-identification
- Approved access or retention safeguards

Common reporting weakness

The report says privacy was protected without stating whether data were identifiable or where they were processed.

Suggested reviewer comment

Please address PETMALU-AI item P27 (Privacy Safeguards). Ensure that no sensitive or identifiable data were improperly used. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Ethics statement; Data-protection statement; Methods or AI-use declaration

Related items: P10, P24, P32

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: No personal data were entered into the AI system.

Improved illustrative example: De-identified excerpts were processed through an approved enterprise account with retention controls.

Comprehensive illustrative example: Data minimization, pseudonymization, local preprocessing, contractual no-training protections, access controls, and deletion procedures were applied before any AI processing.

P28: AI-Related Limitations

VALIDATED PETMALU-AI CONTENT

Official reporting description

Discuss limitations introduced by the use of AI in the research

Validated rationale

Reports constraints introduced by the use of AI that may affect the manuscript, study process, or interpretation of outputs.

Validated example

AI-generated outputs may lack contextual nuance and may reflect limitations of the training data.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Report limitations introduced by the specific AI system and task, not generic limitations of AI.

When it applies

Whenever AI-related constraints are relevant to interpreting the manuscript or study process.

When it may be not applicable

When no AI was used; otherwise limitations may be very brief for trivial editorial assistance.

Minimum information

- Task-specific limitation
- Possible effect on the work
- How the limitation was managed or interpreted

Common reporting weakness

The limitations statement uses generic boilerplate unrelated to the actual task.

Suggested reviewer comment

Please address PETMALU-AI item P28 (AI-Related Limitations). Discuss limitations introduced by the use of AI in the research. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Discussion; Limitations; Reflexivity or reproducibility statement

Related items: P3, P29, P30

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: AI-edited text may still lack contextual nuance.

Improved illustrative example: The literature summaries may underrepresent details that were not emphasized in the prompts.

Comprehensive illustrative example: Limitations include opaque training data, uneven performance across languages, context compression, provider dependency, and possible residual errors despite human verification.

P29: Reflexive Consideration

VALIDATED PETMALU-AI CONTENT

Official reporting description

Reflect on how AI use may have influenced study outcomes or interpretations

Validated rationale

Encourages author reflection on how AI assistance may have shaped framing, emphasis, organization, or presentation.

Validated example

AI assistance may have influenced the organization and wording of selected sections, although all interpretations were finalized by the author.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Reflect on how AI suggestions may have influenced framing, organization, emphasis, language, or interpretation.

When it applies

When AI influenced organization, conceptual framing, interpretation, argumentation, or narrative presentation.

When it may be not applicable

When AI affected only mechanical correction and did not shape framing, organization, or interpretation.

Minimum information

- Potential AI influence
- Human reflection or counterbalancing
- Final human control

Common reporting weakness

The authors deny any influence solely because they retained final approval.

Suggested reviewer comment

Please address PETMALU-AI item P29 (Reflexive Consideration). Reflect on how AI use may have influenced study outcomes or interpretations. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Discussion; Limitations; Reflexivity or reproducibility statement

Related items: P4, P28, P30

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: AI suggestions may have influenced sentence organization.

Improved illustrative example: The initial thematic labels proposed by AI may have affected the researchers' attention, so final themes were developed independently.

Comprehensive illustrative example: The team documented where AI suggestions altered framing, compared AI-assisted and human-only drafts, and used reflexive meetings to challenge machine-suggested emphases.

P30: Reproducibility Constraints

VALIDATED PETMALU-AI CONTENT

Official reporting description

Address challenges related to reproducibility due to AI variability

Validated rationale

Identifies barriers to exact replication arising from variability, non-determinism, access conditions, or model changes.

Validated example

Exact outputs may not be reproducible because generative AI systems can produce variable responses across sessions.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Explain why exact outputs may be difficult to reproduce despite transparent procedural reporting.

When it applies

Whenever others may reasonably attempt to reproduce or audit the AI-assisted workflow.

When it may be not applicable

When no AI was used or when exact output reproduction is irrelevant to the reported work.

Minimum information

- Reason exact outputs may vary
- Difference between exact and procedural reproduction
- Access or platform constraints

Common reporting weakness

The report promises identical reproduction from a non-deterministic or changing service.

Suggested reviewer comment

Please address PETMALU-AI item P30 (Reproducibility Constraints). Address challenges related to reproducibility due to AI variability. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Discussion; Limitations; Reflexivity or reproducibility statement

Related items: P9, P23, P33

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: Exact responses may vary across sessions.

Improved illustrative example: Outputs may not be identical because the system is non-deterministic and access conditions can change.

Comprehensive illustrative example: The procedure can be approximately reproduced from archived inputs, prompts, and settings, but verbatim outputs cannot be guaranteed because the proprietary model, safety layer, and interface evolve.

P31: Reproducibility Information

VALIDATED PETMALU-AI CONTENT

Official reporting description

Provide sufficient detail to allow understanding of AI-assisted processes

Validated rationale

Provides procedural details needed to understand and approximate the AI-assisted workflow.

Validated example

The methodology includes the AI tool, access context, prompting approach, and validation procedures.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Connect the full workflow into a sequence another knowledgeable researcher could approximately reproduce.

When it applies

When AI use was more than trivial or affected research outputs.

When it may be not applicable

When no AI was used or the use was limited to trivial editorial correction fully reported elsewhere.

Minimum information

- Tool and model context
- Prompt/input/iteration/curation steps
- Validation and output handling

Common reporting weakness

The tool name is treated as a complete reproducibility description.

Suggested reviewer comment

Please address PETMALU-AI item P31 (Reproducibility Information). Provide sufficient detail to allow understanding of AI-assisted processes. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Supplementary protocol; Open repository or reproducibility statement

Related items: P12, P15, P32

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: The Methods identify the tool, purpose, prompt approach, and verification process.

Improved illustrative example: A supplementary protocol reports the full sequence from inputs to curated and validated outputs.

Comprehensive illustrative example: The repository provides an executable workflow map linking tool versions, prompts, source files, iterations, curation decisions, validation results, and final manuscript locations.

P32: Materials Availability

VALIDATED PETMALU-AI CONTENT

Official reporting description

Share prompts, workflows, or materials where feasible and appropriate

Validated rationale

Specifies whether supporting materials such as prompts, workflows, logs, or templates are available and under what conditions.

Validated example

Prompt templates and workflow notes are included in the supplementary materials.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

List prompts, logs, code, templates, configurations, or decision records that are shared and under what conditions.

When it applies

When supporting materials can be shared and would aid evaluation, training, reuse, or replication.

When it may be not applicable

When there are no supporting materials or sharing is inappropriate; state the reason when materials would otherwise be expected.

Minimum information

- Materials available
- Stable location or access condition
- Redactions or restrictions

Common reporting weakness

Materials are said to be available without a stable location or access procedure.

Suggested reviewer comment

Please address PETMALU-AI item P32 (Materials Availability). Share prompts, workflows, or materials where feasible and appropriate. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Supplementary protocol; Open repository or reproducibility statement

Related items: P15, P19, P31

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: Prompt templates are included as supplementary material.

Improved illustrative example: Prompts, code, logs, and the review rubric are deposited in a persistent repository.

Comprehensive illustrative example: The materials package contains machine-readable logs, tool inventory, configuration files, redacted interactions, output-review records, validation data, and reuse documentation.

P33: System Evolution Disclaimer

VALIDATED PETMALU-AI CONTENT

Official reporting description

Note that outputs may vary due to changes in AI systems over time

Validated rationale

Notes that AI models, interfaces, access conditions, or platform behavior may change over time and affect future outputs.

Validated example

Future outputs may differ because the AI model and platform interface may be updated over time.

SUPPLEMENTARY IMPLEMENTATION GUIDANCE

Plain-language meaning

Date the reported system context and acknowledge that future models, interfaces, policies, and behavior may differ.

When it applies

When an evolving proprietary or open AI system formed part of the workflow.

When it may be not applicable

When no evolving AI system was used; otherwise a short disclaimer is usually possible.

Minimum information

- Dated system context
- Types of future change expected
- Implication for future outputs

Common reporting weakness

The report notes that technology changes quickly but does not date the system or explain the effect.

Suggested reviewer comment

Please address PETMALU-AI item P33 (System Evolution Disclaimer). Note that outputs may vary due to changes in AI systems over time. Provide enough detail for readers to evaluate the reported AI-assisted process.

Possible manuscript locations and related items

Locations: Methods; Supplementary protocol; Open repository or reproducibility statement

Related items: P9, P30, P31

ILLUSTRATIVE EXAMPLES

Minimum illustrative example: Future outputs may differ after model updates.

Improved illustrative example: The reported results reflect the model and interface available in June 2026.

Comprehensive illustrative example: The archived workflow is versioned and dated; future replication may be affected by changes to model weights, system prompts, safety policies, interface features, pricing, and access conditions.

Part VIII. Complete Scenario Examples

Use examples responsibly: Every example must be adapted and verified against the actual workflow. Copying an example without checking its truth would undermine transparency.

Language editing

Grammar, spelling, clarity, tone, sentence polishing, or formatting

ChatGPT was accessed through an institutional enterprise web interface in June 2026 to improve grammar, sentence clarity, and consistency in the Introduction and Discussion. It was not used to identify literature, design the study, analyze data, interpret findings, or develop conclusions. All suggestions were reviewed against the authors' original wording and accepted only when meaning was preserved. No identifiable, confidential, or unpublished participant data were entered.

Likely relevant items: P1, P2, P3, P4, P5, P6, P8, P9, P10, P12, P14, P20, P22, P25, P27, P28, P30, P31, P33

Translation

Translation of manuscript text, quotations, instruments, or participant materials

DeepL and ChatGPT were used to prepare initial English translations of de-identified Filipino interview excerpts. Prompt templates instructed the systems to preserve meaning and mark uncertain idioms. The first author reviewed every translation against the source text, and a bilingual researcher independently checked quotations selected for publication. Disagreements were resolved through discussion. The tools were not used to generate themes or interpret participant meaning.

Likely relevant items: P1, P2, P3, P4, P6, P7, P8, P9, P10, P12, P13, P14, P15, P20, P21, P22, P24, P25, P26, P27, P28, P29, P30, P31, P32, P33

Drafting and restructuring

Generating, expanding, condensing, or reorganizing manuscript prose

Claude was used to generate preliminary paragraph structures from author-provided notes for the background section. The authors supplied the cited sources, selected and substantially rewrote all retained text, verified every factual claim and citation against the original publications, and developed the final argument independently. The AI system did not determine the study objective, methods, findings, or conclusions.

Likely relevant items: P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P20, P21, P22, P23, P24, P25, P26, P27, P28, P29, P30, P31, P32, P33

Abstract or plain-language summary

Generating or revising abstracts, highlights, lay summaries, or key points

ChatGPT was used after completion of the manuscript to produce a preliminary 250-word abstract from the authors' final text. The corresponding author compared the output with the manuscript, corrected overstatements, restored omitted limitations, and approved the final abstract. No new findings or interpretations generated by the system were retained.

Likely relevant items: P1, P2, P3, P4, P6, P7, P8, P12, P13, P14, P20, P22, P28, P29

Literature searching

Query expansion, discovery support, recommendation, or candidate source identification

An AI literature-discovery tool was used to suggest search synonyms and identify candidate papers. Database searches, eligibility criteria, screening decisions, and final source selection were performed by the authors. Every suggested citation was verified in the publisher or bibliographic database, and unverified or out-of-scope recommendations were discarded.

Likely relevant items: P1, P2, P3, P4, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P20, P21, P22, P23, P24, P25, P26, P28, P29, P30, P31, P32, P33

Literature summarization or synthesis

Summarizing, comparing, mapping, or synthesizing source documents

Claude was used to prepare preliminary source-grounded summaries of 42 articles already selected by the authors. Each prompt included the complete article text and prohibited unsupported additions. Two authors compared every summary with the original paper using a factual-consistency checklist, corrected omissions, and independently constructed the final synthesis. Prompt templates, redacted outputs, and the review rubric are archived.

Likely relevant items: P1, P2, P3, P4, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P16, P18, P19, P20, P21, P22, P23, P24, P25, P26, P27, P28, P29, P30, P31, P32, P33

Systematic-review screening

AI-assisted title, abstract, or full-text screening

A language model was used to prioritize titles and abstracts for human screening. The model did not make final inclusion decisions. Two reviewers independently screened every record, including those ranked as low relevance. Sensitivity, false-negative cases, prompt variants, and disagreements are reported, and the screening prompt and adjudication log are available in the supplement.

Likely relevant items: P1, P2, P3, P4, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P16, P18, P19, P20, P21, P22, P23, P24, P25, P26, P27, P28, P29, P30, P31, P32, P33

Reference or citation checking

Locating, formatting, checking, or validating citations and references

ChatGPT was used to identify possible mismatches between in-text citations and the reference list after the manuscript was completed. Each flagged reference was checked manually in Crossref and on the publisher website. The system was not used to invent, select, or substantively evaluate sources, and no citation was added without independent verification.

Likely relevant items: P1, P2, P3, P4, P6, P8, P9, P10, P12, P14, P20, P21, P22, P25, P28, P31

Coding and software development

Code generation, completion, debugging, documentation, or testing

GitHub Copilot was used in Visual Studio Code to suggest Python functions for data cleaning, visualization, and unit tests. The analysis plan and statistical decisions were prespecified by the authors. Every suggestion was reviewed line by line, executed on synthetic test data, and rejected when it failed tests or changed planned analytic decisions. The final code and tests are deposited in the repository.

Likely relevant items: P1, P2, P3, P4, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P20, P21, P22, P23, P24, P25, P27, P28, P29, P30, P31, P32, P33

Statistical support

Analysis planning, code, model explanation, diagnostics, or interpretation

ChatGPT was used to explain diagnostic output and suggest alternative R code after the analysis model had been selected by the statistician. All generated code was independently reviewed, run against the de-identified dataset, and compared with reference documentation and manually written code. AI suggestions did not determine the primary model or interpretation, and all reported results were reproduced from archived scripts.

Likely relevant items: P1, P2, P3, P4, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P16, P18, P19, P20, P21, P22, P23, P24, P25, P26, P27, P28, P29, P30, P31, P32, P33

Data cleaning or transformation

Extraction, normalization, imputation, recoding, or transformation

A locally deployed language model was used to normalize free-text occupation labels after direct identifiers were removed. The model received a fixed taxonomy and returned candidate categories. Two researchers reviewed every assignment, and uncertain cases were resolved manually. The original text, AI suggestion, final label, and reviewer decision were retained in a provenance log.

Likely relevant items: P1, P2, P3, P4, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P16, P18, P19, P20, P21, P22, P23, P24, P25, P26, P27, P28, P30, P31, P32, P33

Synthetic data generation

Creating simulated, synthetic, or augmented observations or cases

A generative model created 2,000 synthetic cases representing rare equipment-failure conditions underrepresented in the training data. The source dataset, model version, configuration, generation protocol, and screening rules are documented. Synthetic records were checked for duplication, implausible values, privacy leakage, and distributional similarity. Results are reported separately for models trained with and without synthetic data.

Likely relevant items: P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P16, P17, P18, P19, P20, P21, P22, P23, P24, P25, P26, P27, P28, P29, P30, P31, P32, P33

Qualitative coding

Code suggestions, categorization, theme support, or interpretation

ChatGPT was used after human familiarization to propose alternative labels for an initial set of researcher-developed codes. Only de-identified excerpts were processed through an approved enterprise account. The system did not independently generate themes or determine the final framework. Two researchers reviewed every suggestion, documented accepted and rejected labels, and used reflexive meetings to resolve disagreements.

Likely relevant items: P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P16, P17, P18, P19, P20, P21, P22, P23, P24, P25, P26, P27, P28, P29, P30, P31, P32, P33

Instrument or survey development

Generating, revising, translating, or reviewing questions and scales

Claude was used to suggest alternative wording for draft survey items developed from the theoretical framework. The research team evaluated every suggestion for construct alignment, readability, cultural appropriateness, and double-barreled wording. Content experts and target users completed the formal validation and cognitive interviewing; AI suggestions were not treated as validation evidence.

Likely relevant items: P1, P2, P3, P4, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P20, P21, P22, P23, P24, P25, P26, P27, P28, P29, P30, P31, P32, P33

Transcription or speech processing

Automated transcription, diarization, cleanup, or translation

An automated transcription system generated initial transcripts from recorded interviews after participant consent. Files were processed through an institutionally approved service. A researcher listened to the recordings and corrected each transcript, with particular attention to names, technical terms, code-switching, and emotionally sensitive passages. The AI-generated draft was not used for analysis before verification.

Likely relevant items: P1, P2, P3, P4, P6, P8, P9, P10, P11, P14, P15, P16, P18, P19, P20, P21, P22, P24, P25, P26, P27, P28, P30, P31, P32, P33

Figures, diagrams, or graphical abstracts

Generating or transforming visual research materials

An image-generation system was used to produce a preliminary conceptual illustration for the graphical abstract. The authors specified the scientific relationships, manually redrew the final figure, verified every label and directional link, and disclosed the AI-assisted ideation. No participant images, copyrighted figures, or empirical results were uploaded to the system.

Likely relevant items: P1, P2, P3, P4, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P16, P17, P18, P19, P20, P21, P22, P23, P24, P25, P26, P27, P28, P29, P30, P31, P32, P33

Peer-review assistance

Summarizing a manuscript, checking clarity, or drafting reviewer comments

A generative AI system was used by the reviewer to improve organization and language of reviewer-authored notes after the manuscript had been read and evaluated. No confidential manuscript text or identifiable author information was entered into a public system. The reviewer independently determined all judgments and verified the final report before submission, subject to the journal's policy.

Likely relevant items: P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P20, P21, P22, P24, P25, P26, P27, P28, P29, P30, P31, P32, P33

Response-to-reviewer drafting

Organizing or drafting responses to editorial and reviewer comments

ChatGPT was used to organize author-written responses by reviewer theme and improve sentence clarity. The authors independently determined whether and how to revise the manuscript, checked that every response corresponded to an actual change, and approved the final rebuttal. No reviewer concern or methodological justification was generated without author verification.

Likely relevant items: P1, P2, P3, P4, P6, P7, P8, P12, P13, P14, P20, P22, P25, P28, P29

Cover letter or submission materials

Drafting cover letters, highlights, or submission statements

ChatGPT was used to improve the structure and tone of an author-drafted cover letter. The authors supplied all claims about novelty, journal fit, ethics, and prior dissemination, verified the final text against the manuscript and submission records, and removed promotional claims that were not directly supported.

Likely relevant items: P1, P2, P3, P4, P6, P8, P12, P14, P20, P25, P28

Other AI use

A use not represented by the predefined functions

The authors describe the unlisted AI function, identify the system and affected workflow stage, explain its materiality, assign human accountability, document prompts and output handling where relevant, report verification and ethical safeguards, and acknowledge limitations and reproducibility constraints.

Likely relevant items: P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P20, P22, P24, P25, P27, P28, P29, P30, P31, P32, P33

Part IX. Glossary and Manuscript-Location Guide

Glossary

Access context: The technical and organizational environment through which an AI system is used, such as a public web interface, API, enterprise account, local deployment, or third-party integration. Related items: P10, P27.

AI-assisted writing: Writing activities in which an AI system generates, transforms, recommends, translates, edits, or structures scholarly text. Related items: P1, P2, P3.

AI-augmented data: Existing data expanded or modified through an AI process, such as paraphrasing, labeling, interpolation, or generated variants. Related items: P16, P18.

AI-generated data: Data or examples produced by an AI system rather than directly observed or supplied by human participants or instruments. Related items: P16, P17, P18.

Bias mitigation: Procedures used to detect, reduce, manage, or transparently report unfair or systematically distorted AI outputs. Related items: P22, P26.

Configuration: Settings and system choices that may influence outputs, including parameters, plugins, retrieval sources, custom instructions, and system prompts. Related items: P11.

Data provenance: Information describing the origin, transformation history, and custody of data or research materials. Related items: P16, P18, P19.

Generative AI: An AI system that produces new text, code, images, audio, data, or other content in response to inputs or prompts. Related items: P1, P8.

Hallucination: An output that presents fabricated, unsupported, or incorrect information as if it were reliable. Related items: P20, P22.

Human verification: Review by a responsible person to check the accuracy, appropriateness, and alignment of AI-assisted outputs. Related items: P20.

Interaction record: A retained record of prompts, inputs, outputs, edits, timestamps, or workflow decisions. Related items: P15, P32.

Iterative prompting: Repeated prompt-output cycles in which instructions or context are progressively revised. Related items: P13.

Material AI use: AI involvement that may influence substantive scholarly content, methods, evidence, analysis, interpretation, or conclusions. Related items: P3.

Model version: A provider or developer identifier for a specific model, release, architecture, checkpoint, or dated system state. Related items: P9.

Non-determinism: The capacity of a generative system to produce different outputs from identical or similar inputs across runs. Related items: P23, P30.

Output curation: Human selection, rejection, editing, combination, and integration of AI-generated outputs. Related items: P14.

Prompt: An instruction, question, source text, example, constraint, or other input used to elicit an AI output. Related items: P7, P12.

Prompt log: A structured record of prompts and associated contextual or output information. Related items: P15, P32.

Reflexivity: Critical reflection on how researchers, tools, assumptions, and interactions may have shaped the work. Related items: P29.

Reproducibility: The ability to understand and approximately recreate a process using reported tools, inputs, prompts, settings, and procedures. Related items: P30, P31.

Robustness check: A test of whether consequential outputs remain sufficiently consistent under alternative prompts, runs, systems, settings, or reviewers. Related items: P23.

Synthetic data: Artificially generated data designed to resemble properties or scenarios of real data without being direct observations. Related items: P17, P18.

System evolution: Changes over time to models, interfaces, safety policies, retrieval, pricing, availability, or provider behavior. Related items: P33.

Validation strategy: A formal procedure for evaluating the accuracy, adequacy, or reliability of AI-assisted outputs. Related items: P21.

Workflow record: Documentation connecting the AI tool, inputs, prompts, interactions, curation, verification, validation, and resulting research outputs. Related items: P31, P32.

Common manuscript locations

Location	Typical PETMALU-AI items
AI-use declaration	P1, P2, P3, P8, P9, P10, P25
Author contributions	P4, P5, P6, P7
Methods	P2, P7, P8, P9, P10, P11, P12, P13, P14, P16, P17, P18, P20, P21, P22, P23, P26, P27, P31
Ethics or data protection	P24, P25, P26, P27
Data and materials availability	P15, P19, P32
Discussion or limitations	P3, P22, P24, P26, P28, P29, P30, P33
Supplementary materials or repository	P11, P12, P13, P15, P18, P19, P21, P23, P31, P32
Cover letter or submission form	P1, P2, P3, P5, P25

Final implementation reminder

Use PETMALU-AI as a structured account of scholarly responsibility, process transparency, methodological influence, ethical safeguards, and reproducibility constraints. Preserve proportionality, item-level judgment, and the distinction between validated framework content and supplementary implementation guidance.