

How to Publish in Q1 Journals?

Comprehensive step-by-step guideline for preparing and publishing research

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RESEARCH

►►► What is Research?

- An art of **scientific investigation**/ **Systematized** effort to gain new knowledge.
- A Scientific and **systematic search** for pertinent information on a specific topic.
- The systematic method consists of enunciating the **problem**, formulating a **hypothesis**, collecting the facts or data, analyzing the facts, and reaching certain conclusions in the form of solutions towards the concerned.
- Problem or in certain generalizations for some theoretical formulation.
- It is the **cornerstone** of every science.

►►► What is Research?

Rr

Again

Search

Find

Process

Step by Step

►►►What is NOT Research?

The following is not research:

- playing with technology;
- Developing code.
- Deploying standard or commercial technology.
- Doing what others have already done.



However, each of these can be done as part of research

►►► The Three Approaches to Research

- (a) Quantitative:** numerical results are used to validate claims.
- (b) Qualitative:** comparative development of usage patterns and experiences
- (c) Mixed**

RESEARCH METHODOLOGY

►►► Define the Research Problem

- A research problem is a statement that **addresses a gap in knowledge**, a challenge, or a contradiction in your field.
- Scientists use research problems to identify and define the **aim** of their study and analysis.
- You may decide to conduct research based on a **problem** if you're interested in contributing to social or scientific change or adding additional knowledge to an existing topic.
- A research problem may also help identify **key concepts and terms**, overarching questions, and variables.

►►► Example of Research Problem

Nowadays, universities all around the world mainly depend on electronic systems as an approach to storing students' information. The increasing use of such systems leads to much untapped data. Every year, Saudi universities accept a large number of Saudi students in their different programs. Many students face difficulties in completing their program's requirements on time.

At-risk students cause the consumption of university resources in addition to the loss of student time. Various reasons can lead to student failure, starting from the right choice of the appropriate program to difficulty in understanding the courses.

Moreover, other factors can affect the students' studies, such as the design of the program, the course curriculum, etc.

Artificial Intelligence (AI) has emerged as a promising solution to help identify at-risk students early and support timely intervention. By analyzing historical student data, AI systems can predict which students are likely to face academic challenges. However, several AI-related challenges hinder the full realization of this potential.

One major challenge is the availability and quality of data, as student records may be incomplete, inconsistent, or biased. Another challenge lies in the interpretability of AI models; educators need transparent and explainable predictions rather than opaque "black-box" results.....

►►► Research Question

- Formulate as a Precise, Answerable Question
- Use **SMART** principles:
 - Specific, Measurable, Achievable, Relevant, Time-bound.
 - **Example:**
 - How can transformer-based models improve sentiment analysis for Arabic dialects with limited annotated data?
 - **Avoid Overly Broad or Vague Questions**
 - **✗** How can AI change healthcare? (Too broad)
 - **✓** Can deep learning improve the early detection of diabetic retinopathy in retinal images?
 - **Start with:**
 - **What is the effect of...?**
 - **How can we improve...?**

►►► Research Aim & Objectives

- A broad statement that defines the overall purpose of your research.
- Describes what you intend to achieve without going into specific methods or details.
 - **Clear and Focused:** Avoid ambiguity.
 - **Broad but Achievable:** Describes the direction, not the exact steps.
- To develop an AI-based system that improves early diagnosis of skin cancer.
- To enhance the performance of natural language processing models for Arabic text classification.
 - **Start with:**
 - **To develop...**
 - **To investigate...**
 - **To explore...**

►►► Research Aim & Objectives

Aspect	Research Aim	Research Objectives
Definition	A broad, general statement of what the research intends to achieve.	Specific, detailed steps that guide how the aim will be achieved.
Focus	Focuses on the overall purpose or big picture.	Focuses on measurable, actionable tasks.
Level	High-level and non-technical.	Detailed and practical.
Quantity	Usually one main aim.	Multiple objectives (typically 2–5).
Example	<i>To develop an AI model to improve early disease detection.</i>	- To design a deep learning architecture. - To evaluate model accuracy using real-world datasets.

- Join your project's group
- Write the following:
 - (3-5) sentence problem statement.
 - (2) research question
 - Aim
 - (2) objectives

LITERATURE REVIEW



Literature Review

- A summary and analysis of existing research related to the topic.
 - It highlights gaps, trends, and key findings in the field.
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- ✖ Listing studies without connection.
 - ✖ Ignoring contradictory findings.
 - ✖ Not linking back to your research question.
-
- **Focus on recent papers (last 5 years), top conferences/journals, and current challenges in the field.**



▶▶▶ Type of Review

1. Narrative Literature Review

- A narrative review synthesizes the literature to uncover patterns, trends, and gaps in research without following strict methodological guidelines.
- Best For: Broadly summarizing a research area or comparing diverse perspectives.

Example Use Case: Analyzing trends in climate change policy over the past decade.

▶▶▶ Type of Review

2- Systematic Literature Review

- A systematic literature review follows a clear, structured methodology to collect and analyze research papers to minimize bias.
- Best For: Providing a rigorous, evidence-based synthesis of studies in a specific area.

Example use case: Comparing the effectiveness of treatments in healthcare by analyzing randomized controlled trials.

▶▶▶ Type of Review

3. Scoping Review

- A scoping review identifies the key concepts, data sources, and evidence types in a research area that hasn't been fully explored.
- Best For: Mapping the extent of research on an emerging or under-researched topic.

Example use case: Exploring how AI is being applied in education across different contexts.

▶▶▶ Type of Review

4. Integrative Review

- An integrative review critically examines the literature on a topic to highlight strengths, weaknesses, and research gaps for future studies.
- Best For: Building a foundation for new theories or frameworks.

Example use case: Reviewing existing research on workplace productivity to identify areas for further study.

►►► Review Process

Step 1: Define Research Scope

- Formulate a clear research question or aim.
- Identify keywords and concepts related to your topic.

Step 2: Search Systematically

- Use academic databases:
- IEEE Xplore
- ACM Digital Library
- Scopus
- Web of Science
- Google Scholar
- Apply Boolean operators (AND, OR, NOT) to refine searches.

▶▶▶ Review Process

How to Choose the Right Papers?

1. Indexing

- Ensure the paper is published in a journal indexed in reputable databases:
- Scopus
- Web of Science (ISI)
- IEEE Xplore, ACM DL, PubMed (field-specific)

2. Journal Impact

- Consider the Impact Factor (IF) from Journal Citation Reports (JCR).
- Alternatively:
- CiteScore (Scopus)
- SJR (SCImago Journal Rank)
- h-index (for authors or journals)

▶▶▶ Review Process

How to Choose the Right Papers?

3. Recency

- For fast-changing fields like AI, Data Science, Cybersecurity:
 - Prioritize papers from the last 5 years.
- Include a few seminal (older but essential) works.

4. Citation

- Use Google Scholar or Scopus to see how often a paper is cited.
- Higher citations suggest influence, but beware of very new but important papers that are not yet cited.

Indexed

High Impact

Relevant

Recent

Well-Cited

▶▶▶ Review Process

Step 3: Organizing Collected Papers

Paper	Title & Authors	Aim/Research Question	Methodology	Key Findings	Limitations/Gaps	Relevance to My Study
Paper 1	Title, Author(s)	What does the study ask?	Qualitative/Quantitative	Main results	Weak sample size, no AI focus	Directly related to X
Paper 2

►►► Review Process

How to Get Insights from the Literature Matrix?

1. Look for Patterns:

- Do multiple studies report similar findings?
- Are there consistent methodologies or common variables?

2. Identify Gaps:

- Which questions remain unanswered?
- Are there populations, methods, or contexts not yet explored?

3. Trace Trends:

- How has the research evolved over time?
- Are there emerging topics or **declining areas**?

►►► Review Process

Critical Analysis

- Not just summarizing what each study says.
- It means evaluating:
 - The strength of the evidence.
 - The quality of the research design.
 - The relevance to your research question.

Is the study methodologically sound?

Ensures validity of the results.

Are the findings well-supported by data?

Avoids overgeneralization or unsupported claims.

Does the paper align with other studies?

Helps understand consistency or divergence.

What are the limitations or biases?

Identifies what's missing or weak.

How is this study relevant to my research?

Keeps your review focused and purposeful.

▶▶▶ Review Process

Logical Flow of Writing

- Use Clear Structure & Organization.
- Linking Phrases to Connect Ideas
- Move from General to Specific
- End with Synthesis, Not Summary
 - "Studies on AI in education can be grouped into three main themes: (1) prediction models for student performance, (2) personalized learning systems, and (3) ethical considerations."
 - "Several studies report positive outcomes; however, some researchers argue that the results may not generalize to larger populations."
 - Machine learning has been applied across various fields, including healthcare, finance, and education. In the context of education, recent studies have explored how AI can improve learning outcomes."

- Join your project's group
1. Summarize one paper in the LR Matrix

EXPERIMENT



Experiment

- Implement State-of-the-Art Models
- Reverse-Engineer Results
- Reflect on Questions, Failures, and Learning
- Be Organized & Save Your Work
- **Take Notes**

ACADEMIC WRITING

►►► Academic Writing

What to Use & What to Avoid

- Formal, objective language
 - Precise and concise wording (1 paragraph 1 Idea)
 - Clear structure and logical flow
 - Evidence-based statements
 - Proper referencing and citation
 - Third-person point of view (avoid “I” unless required)
-
- ✗ Informal language or slang
 - ✗ Personal opinions without evidence
 - ✗ Ambiguous or vague words
 - ✗ Overly complex sentences
 - ✗ Contractions (don’t, can’t, etc.)
 - ✗ Repetition or redundancy

Pick a journal or a conference first

►►► Academic Writing

How to Write an Effective Abstract? 150–250 words

Component	What to Include	Tips
1. Background / Context	Briefly introduce the topic and explain why it matters.	1-2 sentences. Set the stage.
2. Research Problem / Objective	Clearly state the problem you address or the main aim of the study.	Be precise and focused.
3. Methods / Approach	Mention the methods or approach used to conduct the research.	Keep technical details minimal.
4. Results / Findings	Highlight the key results or discoveries of your study.	Be specific but concise.
5. Conclusion / Implications	State the main conclusion and its significance or application.	Show the impact or contribution.

►►► Academic Writing

How to Write an Effective Introduction?

Component	What to Include	Tips
1. General Background / Context	Start broad. Introduce the field or area of study. Why is this topic important?	Make it interesting and relevant.
2. Problem Statement / Research Gap	Highlight the specific issue, problem, or gap in existing knowledge.	Show what is missing or unsolved.
3. Research Aim / Objectives	Clearly state what your study aims to achieve or investigate.	Use precise, focused language.
4. Significance / Contribution	Explain the importance or potential impact of your research.	How will your work add value?
5. (Optional) Overview of Paper Structure	Briefly outline the main sections of the paper (optional).	Helps guide the reader.

▶▶▶ Academic Writing

How to Write an Effective Methodology?

Component	What to Include	Tips
1. Research Design	State the type of study (e.g., experimental, qualitative, quantitative, mixed).	Justify your choice briefly.
2. Participants / Data Sources	Describe who or what you studied (e.g., people, datasets, documents).	Mention sample size, characteristics, and selection method.
3. Materials / Tools	Explain any instruments, tools, software, or equipment used.	Specify brands, versions, etc., if relevant.
4. Procedures	Describe how you collected data step by step.	Be chronological and detailed.
5. Data Analysis	State how you analyzed the data (statistical tests, qualitative coding, etc.).	Mention software (e.g., SPSS, Python).

►►► Academic Writing

How to Write an Effective Results & Discussion?

◆ What did you find?

- Present the key findings clearly and objectively.
- Use tables, figures, or charts to display data effectively.
- Write a brief descriptive summary of what the visuals show.
- Avoid interpretation or discussion—just state the facts.

Writing Tip: Use the past tense and be concise.

►►► Academic Writing

How to Write an Effective Results & Discussion?

- ◆ What do the results mean?
 - Interpret the findings: What do they tell us?
 - Compare with previous research: Are your results consistent or different?
 - Explain the implications: Why are the results important?
 - Discuss limitations honestly.
 - Suggest future research directions.

Writing Tip:

- Use present tense for theory and literature, past tense for your own study.
- Keep the tone balanced—highlight contributions but acknowledge weaknesses.

►►► Academic Writing

How to Write an Effective Conclusion?

The Conclusion should answer:

1. What was the study about?
2. What did we learn?
3. Why does it matter?
4. What's next?

PUBLICATION



Publication

1- Journal Articles

- Peer-reviewed scholarly papers.
- Typically longer and more detailed.
- Aim for indexed journals (Scopus, Web of Science).
- Examples: Q1, Q2 journals based on impact factor.

2- Conference Papers

- Shorter papers presented at academic conferences.
- Often faster publication process.
- May include oral presentations or poster sessions.
- Good for networking and getting feedback.

3-Book Chapters

4-Workshop Proceedings

5-Preprints (e.g., arXiv, SSRN)

Publication

Decision Type	What It Means
 Accept (Rare)	Paper is accepted with no or very minor edits.
 Minor Revisions	Requires small corrections (language, formatting, clarity).
 Major Revisions	Requires substantial changes (methods, analysis, discussion).
 Reject & Resubmit	Paper is rejected in current form but may be reconsidered.
 Reject	Paper is rejected outright (scope mismatch, major flaws).



Publication

What Comes After Publication?

- Build on your findings with new studies, improvements, or applications.
- Look for funding opportunities or collaborations.
- Be an Active Corresponding Author
- Share Your Work

RESEARCH JOURNEY



Research Journey

What Can Research Give You?

- Stay Up-to-Date.
- Patience & Mastery.
- Objectivity & Neutrality.
- Critical Thinking.
- Teamwork & Collaboration .

►►► Research Journey

Tips

- Cultivate curiosity.
- Continuous learning.
- Read extensively.
- Regularly seek guidance from supervisors and mentors.
- Help and learn from your colleagues.

Challenges:

- Time management.
- Maintaining motivation.
- Handling feedback and revisions.

Q&A

THANK YOU