RECOMMENDATIONS ON THE USE OF ARTIFICIAL INTELLIGENCE TOOLS IN THE PREPARATION OF DIPLOMA THESES AND OTHER STUDIES AT THE FACULTY OF ECONOMICS AT UMCS

§1. Introduction

According to the Order No. 27/2024 of the Rector of the University of Maria Curie-Sklodowska (UMCS), artificial intelligence (AI) can provide support in the educational process, including the preparation of theses. These recommendations for the Faculty of Economics of the UMCS (hereinafter Recommendations) aim to clarify the principles of responsible and ethical use of generative AI tools in this context. The rapid development of artificial intelligence tools and their increasing impact on creative work in academia means that these Recommendations will be subject to updates.

The recommendations concern the preparation of **theses** and other written works by male and female students, which are prepared in the course of their studies as part-works, projects, credits, reports, analyses and etc., which will be referred to hereafter as **studies**. Dissertations and studies are hereinafter collectively referred to as **papers**.

Artificial intelligence can enrich the creative process, but should not be regarded as a substitute for independent reflection and one's own creativity. These Recommendations are intended to indicate the desirable scope for the use of AI tools in the preparation of theses, and not to lead to sanctions for using these tools in a responsible, transparent and compliant manner. AI can be an effective tool to support the creative process and we encourage its responsible use in the learning process.

§2. Application of artificial intelligence in the creative process

Below is a catalogue of permitted areas of AI use:

1. Use of AI to organise brainstorming sessions to help define key research questions and problems, as well as to create titles and other structural elements of the thesis.
2. AI can help optimise the structure of the thesis by suggesting the most logical arrangement of sections and chapters based on the content provided, but the basic structure should be the result of the author's or author's own work, agreed with the supervisor.
3. Use of AI tools to search the literature and databases for relevant sources.

4. Generation of key words and phrases that can be used to search the literature more effectively.
5. Automation of bibliometric analyses and presentation of their results in the form of tables, graphs or variable maps.
6. Automating the process of creating tables based on data provided by authors.
7. Using AI to automatically format bibliographies according to academic citation standards.
8. Use of AI to create diagrams, charts, graphs, infographics according to the author's or author's detailed instructions.
9. AI can be used to assist in the development and modification of code, but the final control over the logic and structure of the programme must remain in the hands of the authors.
10. The use of AI can support the data mining process, enabling accurate analyses and complex mathematical and statistical calculations.
11. AI tools can automatically generate model code, such as econometric models, using the data provided.
12. AI can be used to simplify complex mathematical equations and formulas, making them easier to analyse and understand.
13. Using AI to create text, graphics, datasets that can support analysis but not replace it.
14. AI tools can be used to verify that the thesis meets certain formatting and academic standards.
15. AI tools may be used to correct grammar, punctuation and to translate texts from foreign languages.

All factual content included in the written work, including both the author's or author's own formulations and content provided after other authors, should be the result of in-depth reflection by the author or author. The following is a catalogue of unauthorised areas of AI use:

1. Using AI to create the basic structure or key elements of the thesis.
2. Using AI to create entire paragraphs, chapters or other sections of the thesis, which are then merely edited by the author, the writer or other AI tools.
3. Using AI to generate hypotheses, theses or research questions that should be the result of the author's or author's intellectual thinking and understanding of the research material.
4. Using AI to automatically generate descriptions and interpretations of research findings.
5. Using AI to generate key research conclusions, which should be the result of independent analysis by the author or author of the paper.

§3. Artificial intelligence as a research subject

The creation of texts, graphics, datasets or other objects for the purpose of their analysis as content created by artificial intelligence is permitted, provided that such content is clearly labelled with the service with which it was created. For the rest of the written work, the author/author should apply the standards set out in the other subject areas of these Recommendations.

§4. Principles of accountability and transparency

1. Authors should disclose the use of artificial intelligence and AI-enabled technologies in their work. Declaring the use of these technologies promotes transparency and trust between authors, readers and reviewers, and facilitates compliance with the terms of use of the relevant tool or technology.
2. Students should declare in the paper the extent to which they have used AI, what has been assisted by AI and what is the result of their own thinking and analysis. Information on this should be included in the Introduction of the thesis, it is recommended to use/modify the following formula:

   "This thesis has been prepared using generative artificial intelligence tools. They have been applied for the purposes of formulating the objectives and research questions, structuring the document, explaining concepts, as well as linguistic and grammatical correction and summarising the articles and sources used, etc. - list areas of application]. The author(s) of the thesis verified and edited the content obtained by means of these tools, taking full responsibility for their content and the final shape of the thesis."

3. The objectives, methods and scope of use of content-generating systems shall be verified by the academic supervisor at the thesis acceptance stage, in the case of a thesis taking into account the criteria arising from Article 76 of the Act of 20 July 2018. Law on Higher Education and Science, in particular the criterion of independence in its preparation, as well as the students' ability to analyse and infer independently.
4. The supervisor or the subject teacher has the right to receive the file with the author's prompts and AI answers at the latest before the acceptance of the final version of the thesis.
5. The thesis should be verified for originality and independence using detection tools (e.g. anti-plagiarism software) that take into account the possibility of using AI.
6. In the case of thesis authors for whom the study cycle ends in the academic year 2023/2024, a statement on the extent of the use of AI tools in the thesis, indicated in para. 2, if the author or the author has used such tools.

7. In the case of thesis authors for whom the study cycle ends in the academic year 2024/2025 or subsequent years, an appendix to the thesis should be a set of prompts and answers obtained, indicated in para. 4. This appendix should be attached as a separate file along with the thesis in the ADF system of the UMCS and visible to the thesis reviewers.

§5. Dealing with suspected undisclosed use of content-generating systems at work

If a supervisor or subject teacher suspects that content-generating systems have been used in a way that does not comply with the established rules, he or she should ask the student to provide an explanation of the purposes, methods and extent of the use of these systems within the work. In particular, the result of checking the thesis or parts of the thesis with several different publicly available tools for detecting content generated using AI may be the basis for suspicion of non-self-reliance.

§6. Training for seminarians

Promoters are obliged to discuss with students during the seminar the rules for the use of the IS, including these Recommendations and the applicable university regulations. It is also recommended to indicate to the students the guidelines contained in this paper as binding when preparing other papers.

§7. Copyright protection and ethics

1. The use of AI-generated material that may infringe copyright is not permitted. The Student must own full rights to all AI-generated content used in her or his work. The consequences of presenting AI-generated content as one's own arise in particular from a violation of Article 76 of the Act of 20 July 2018. Law on Higher Education and Science, as regards the criterion of independence in the preparation of the thesis, analogous to the cases revealed in the anti-plagiarism examination.
2. The Student is responsible/responsible for all ethical and legal violations that may result from the improper use of the AI.
3. Given the need for transparent use of AI, the use of content generated by AI tools should be referenced according to the principles recommended by the American Psychological Association (APA), available at: https://apastyle.apa.org/blog/how-to-cite-chatgpt or in an analogous format as a footnote. For tables, figures and other objects generated by AI tools, it is recommended to use the example formula: "Source: own compilation using OpenAI (ChatGPT version 4o), accessed 14 May 2024" or similar.

§8. Final provisions

1. The dissertation supervisor and the subject teacher have the right to further limit/extend the possible scope of the use of AI, if the specific nature of the written work requires this.
2. In any case, it is recommended to appeal to common sense, both in the use of AI tools in the preparation of the thesis and in the assessment of the degree of use of these tools by the thesis authors.
3. The recommendations take effect at the Faculty of Economics of the UMCS from the date of publication.

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