Use of generative AI in statistical organizations: CES survey results

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1. Background

The capabilities of artificial intelligence (AI) have significantly advanced in the last few years, and the statistical community is increasingly aware of the transformative potential of generative AI — a type of AI system that can generate new content such as text, images, or video.

To gather information on the use of generative AI in statistical organizations and the challenges associated with it, a survey was conducted as part of e-consultations for the 2024 plenary session of the Conference of European Statisticians (CES) by the Generative AI Project team of the High-Level Group for the Modernisation of Official Statistics (HLG-MOS).

2. Survey Results

An invitation for the survey was sent out to CES members in early June. Each organization was asked to provide a consolidated response from the organization. A total of 41 responses were collected among which 36 are from national organizations and 5 from international organizations (see Annex 1 for the list of respondent organizations).

The survey questionnaire (Annex 2) consists of three parts: 1) Use case of generative AI; 2) Organizational policy; 3) Challenges in using generative AI. In this section, the summary of the results is provided by each question item.

* Note: the total number of responses for some question items may be lower than the total number of survey respondents due to invalid entries (e.g., non-response, selecting multiple choices for single-choice item) which were excluded from the results.

2.1. Use cases of generative AI in the organizations

Q5. Please rate what you think the level of impact generative AI has or is expected to have on the following work areas in the works of statistical organizations next 2-3 years

Table 1.

	Highly impactful	Moderately impactful	Slightly impactful	Not impactful at all	Not sure	Average score
Data collection and processing	6	17	15	1	2	2,72
Data analysis	8	17	13	3	0	2,73
Dissemination and communication	13	16	9	2	0	3,0
Coding and IT development	21	15	4	0	1	3,43
Other administrative tasks	8	14	12	3	4	2,73

* Average score is calculated using following scale: highly impactful – 4, moderately impactful – 3, slightly impactful – 2 and not impactful at all – 1 ("not sure" is excluded).

The trends indicate that many statistical organizations expect AI (in the remainder of the document, "AI" always refers to generative AI, unless stated otherwise) to have a moderate to high impact across various work areas over the next two to three years. Coding and IT development is an area that is expected to have the most impact, followed by dissemination and communication. Other areas, such as data collection and processing, data analysis, and other administrative tasks, are expected to be less impacted by AI.

**Q6. Does your organization allow the use of generative AI for work?**

Figure 1.

There is a significant engagement with generative AI among statistical organizations. 17 organizations reported explicit permission to use generative AI, a substantial number of organizations operate in an environment where no explicit decision has been made. Despite this uncertainty, generative AI is being actively utilized, as evidenced by the

small number of respondents reporting no AI applications (only 2) in the next question (**Q7**).

Q7. Which application areas utilize generative AI within your organization (multiple choice)? "Utilization" includes those in under experimentation as well as in production.

Figure 2.
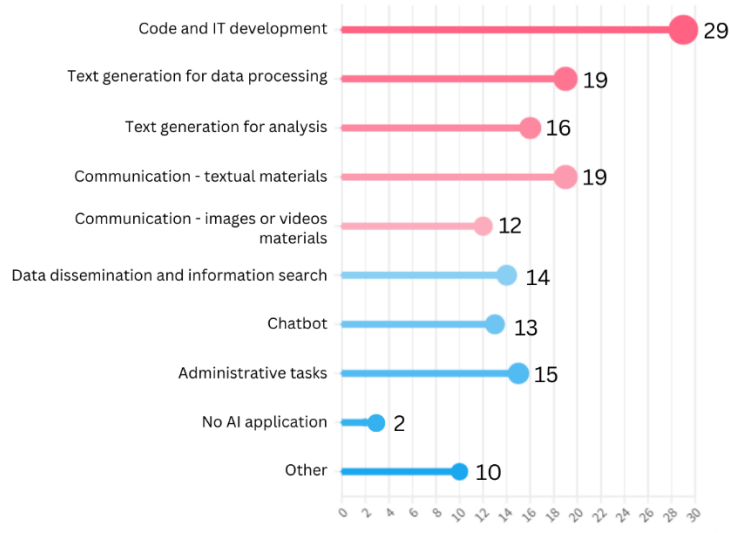
The survey responses reveal diverse application areas for generative AI within organizations. The most common use is in code and IT development (29), which corresponds to the area that is expected to have the most impact (**Q5**), followed by text generation for data processing (19) as well as AI is also widely used for creating textual communication materials (19) and analysis (16). Administrative tasks and data dissemination/information search also benefit from AI. Additionally, there are various other uses of AI, such as literature review, brief introductions to non-sensitive topics, translations and brainstorming, demonstrating the technology's versatility and broad applicability in enhancing organizational functions.

Q8. Please rate what you think the level of impact generative AI has and is expected to have on the following aspects in statistical organizations next 2-3 years

Table 2.

	Highly impactful	Moderately impactful	Slightly impactful	Not impactful at all	Not sure	Average score
Efficiency and productivity	16	19	4	0	2	3,31
Accuracy and precision	4	16	13	5	3	2,50
Use of new data sources	5	16	14	1	5	2,69
Enhancement of service delivery to users	12	17	9	1	1	3,03
Fostering creativity	8	19	8	1	5	2,94

* Average score is calculated using following scale: highly impactful – 4, moderately impactful – 3, slightly impactful – 2 and not impactful at all – 1 ("not sure" is excluded).

The overall trends suggest that generative AI is expected to have a moderate impact on various aspects of statistical organizations. Efficiency and productivity are anticipated to benefit the most, followed by the service delivery enhancements and fostering creativity. The impact on accuracy and precision is viewed with more caution.

Q9. Does your organization have any application areas where it is currently developing or planning to develop in-house solutions? Please note that this includes solutions that have the paid services as part of components.

Figure 3.

27

6

8

Yes   No   Not sure
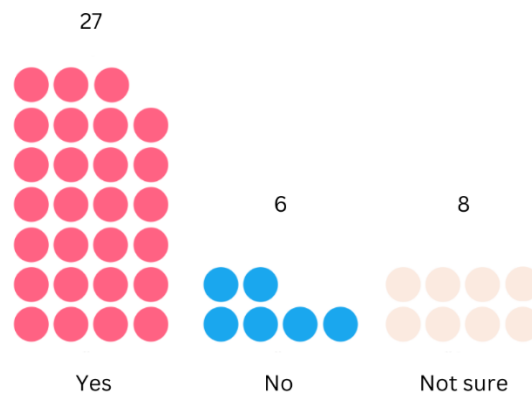
The majority of respondents (27) are developing or planning to develop in-house AI solutions. Given that many organizations operate with no explicit decision on the use of generative AI, this reflects a proactive stance towards adopting AI technologies.

Organizations that are actively developing in-house AI solutions tend to perceive AI as more impactful, with an average score on the impact level across various work areas (**Q5**) of 3,12, compared to an average score of 2,78 among those not developing AI solutions.

10. (Optional) Please describe the projects. If there are any materials publicly available, please share the link here.

9 organizations responded that they are developing chatbots to enhance communication with users and automate information retrieval, indicating a focus on improving user interaction and service efficiency.

AI is also used for text processing, data imputation, and generating synthetic data, reflecting its role in improving data quality and analytical capabilities (7).

Several organizations are experimenting with converting legacy scripts, generating long-reads, and mapping standards (5) and personalized content delivery and intelligent statistical search (4).

AI is being integrated into existing statistical systems and processes (4) and AI-powered translation tools are being developed to support multi-language content and enhance accessibility (3).

The survey results demonstrate a significant and diverse range of AI projects within statistical organizations. From chatbots and data processing tools to experimental applications and personalized services, these projects highlight the growing importance of AI in enhancing efficiency, accuracy, and user engagement in statistical production.

Q11. Does the organization provide support for the paid service or platforms to use generative AI (e.g., subscription to ChatGPT)? Please note that this does not include existing paid subscriptions that offer new AI functionalities (e.g., Adobe).

Figure 4.
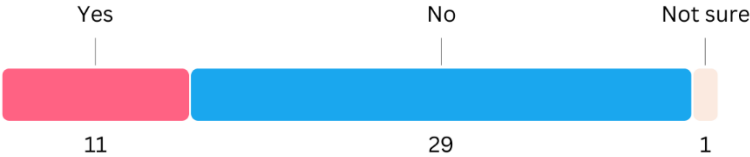
About 70 % of organizations responded that they do not support paid AI services, which might indicate a preference for in-house development, open-source solutions, or leveraging existing subscriptions that now include AI functionalities.

According to responses (7) to a follow-up question (**Q12**), the paid services and platforms being used include: **Microsoft Copilot** (enterprise version with data privacy

guarantees) for basic chatbot tasks and everyday use, **ChatGPT Plus**, **MS Azure OpenAI services** for API access to LLMs in specific initiatives. **Azure ML/AI** for experiments under certain conditions, **OpenAI API**, **DeepL**, **Anthropic's Claude** in Amazon Bedrock.

2.2. Organizational policy on generative AI

Q13. Is there a policy or guidelines in the organization on how to use generative AI?

Figure 5.

Yes	No	Not yet, but under development
12	22	7
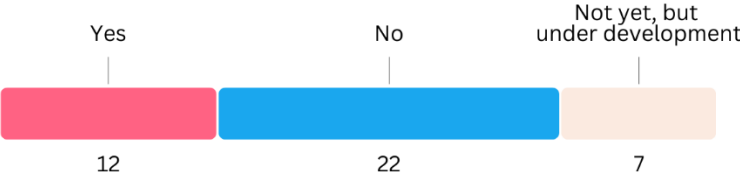
A large part of the organizations responded that there is no policy on how to use generative AI although in some organizations (7), the policy is under development. Common themes in existing policies, as observed from the responses from the follow-up question asking about the policy (**Q14**), include data security, transparency, and ethical use. Established policies often emphasize minimizing risks associated with personal data, ensuring transparency in AI operations, and promoting accountability through documentation and monitoring. In some organizations, overarching frameworks and ethical charters within the countries guide AI use.

2.3. Challenges in using generative AI

Q15. Please rate the level of concern regarding risks associated with use generative AI in your organizations

Table 3.

	Very concerned	Moderately concenred	Slightly concerned	Not concerned at all	Average score
Ethical concerns	19	9	12	1	3,12
Accuracy and lack of validation mechanism	25	13	3	0	3,54
Confidentiality, privacy and security	27	12	2	0	3,61
Copyright and legal issues	16	13	8	4	3,0
Negative public perception	10	17	12	2	2,85
Dependency to external providers	12	13	13	3	2,83
Overuse by staff	3	10	20	8	2,20
Misuse (e.g., neglecting human oversight)	14	21	6	0	3,20
Lack of reproducibility	9	22	8	2	2,93

* Average score is calculated using following scale: very concerned – 4, moderately concerned – 3, slightly concerned – 2, not concerned at all – 1.

The majority of organizations are very concerned about confidentiality/security and accuracy of AI outputs with average scores of 3,61 and 3,54 respectively.

Concerns around misuse (average score: 3,20) and ethics (average score: 3,12) are also significant, reflecting the importance of placing appropriate oversight and adhering to ethical standards in AI applications.

Concerns about negative public perception and dependency on external AI providers suggest that organizations are wary of how AI adoption might affect their reputation and operational independence.

Overuse by staff is of minor concern for the majority of respondents.

Q16. (Optional) Please describe any measures taken to reduce the risks associated with generative AI

Among the 20 responses received, 9 organizations indicated that they have implemented or are developing internal policies and guidelines to manage the use of generative AI.

Comprehensive training programs and risk management guidelines are also common measures to ensure that staff understand the limitations and responsibilities associated with AI usage.

Data protection is a significant focus, with measures including self-hosted solutions, detailed logging of AI interactions, and regular retrospectives to monitor compliance and security.

Using open-source software was cited as a measure to maintain control and reduce dependency on external providers.

Engaging with international bodies and adhering to global standards and guidelines helps organizations align their AI practices with best practices and emerging regulatory frameworks.

The survey results reveal that statistical organizations are taking diverse measures to mitigate the risks associated with generative AI. Internal policies, data protection measures and staff training are common strategies employed to ensure responsible AI usage.

Q17. To what extent do the following organizational issues limit your organization's ability to use generative AI?

Table 4.

	Very limiting	Moderately limiting	Slightly limiting	Not limiting at all	N/A (AI is not permitted in my organisation)	Average score
Uncertainty around national regulation	4	12	12	11	2	2,23
Lack of buy-in or resistance from users / staff	2	7	20	11	1	2,00
Lack of buy-in or resistance from management	2	9	16	12	2	2,03
Lack of coordination among different parts of organization	5	13	16	6	1	2,43
Strict policies and guidelines	4	15	13	7	2	2,41

* Average score is calculated using following scale: very limiting – 4, moderately limiting – 3, slightly limiting – 2, not limiting at all – 1.

Strict policies and lack of coordination within the organization are seen as most limiting among the organizational issues listed in the questionnaire, followed by uncertainty around national regulation. However, these organizational issues are generally considered less limiting than technical issues (**Q19**).

Responses on the open-ended **question (Q18)** highlights various measures that organizations are taking to overcome the organizational issues, such as implementing internal policies, increasing collaboration, developing guidelines, and engaging with international bodies.

Q19. To what extent do the following technical and other issues limit your organization's ability to use generative AI?

Table 5.

	Very limiting	Moderately limiting	Slightly limiting	Not limiting at all	Average score
Availability of staff with appropriate skills and capability	13	20	6	2	3,07
Security	14	17	6	4	3,00
Cost implication	10	17	11	3	2,83
Access to computer hardware	9	15	7	8	2,64

* Average score is calculated using following scale: very limiting – 4, moderately limiting – 3, slightly limiting – 2, not limiting at all – 1.

A significant number of organizations find the availability of staff with appropriate skills to be moderately to very limiting, indicating a widespread need for training and recruitment of skilled personnel to effectively leverage generative AI. Security concerns remain critical, with many organizations finding them very and moderately limiting, suggesting a strong emphasis on implementing robust security measures to protect data and AI systems. Cost implications and access to computer hardware are moderately limiting for many organizations, with a few organizations finding access to hardware not limiting at all.

20. (Optional) Please describe any measures taken to overcome the issues

Based on the responses, several common measures have been identified across various organizations to overcome the limitations associated with the use of generative AI:

Some organizations are focusing on increasing the capability of their staff through training programs and hiring candidates with the necessary expertise in generative AI. Additionally, organizations are collaborating with universities, digital transformation offices, and research councils to develop AI models and improve their AI capabilities.

Security remains a critical concern, with organizations implementing robust security systems, including prompt engineering and guard-railing, to protect data and AI systems. There is a development of in-house solutions to control data storage and usage, which helps address cost and security issues.

Some countries are creating comprehensive internal guidelines and policies to ensure responsible and secure use of generative AI. This includes defining responsibilities, necessary skills, and AI governance structures.

Investments in infrastructure such as hardware and server are cited as measures they are pursuing to address the challenges, with some countries seeking funding and additional financial resources to support the adoption and implementation of generative AI technologies.

21. (Optional) Please let us know if you have any suggestions on international cooperation that would be most helpful.

The common suggestions for international cooperation highlight the importance of capacity building, developing standards and guidelines, and sharing knowledge, use cases and best practices. Development of solutions (e.g., software, components, codes) reusable within the official statistics was also recommended as an area for international collaboration. Understanding these suggestions provides a roadmap for potential international initiatives and cooperative efforts to support the global adoption of generative AI technologies.

3. Concluding remarks

The survey results highlight a broad picture of the challenges and solutions associated with the use of generative AI in statistical organizations. Key concerns such as security, skill availability, cost, and infrastructure are being addressed through a combination of training, policy development and in-house solutions. The alignment between identified needs and suggested international cooperation underscores the importance of shared knowledge, capacity building, and coordinated efforts to enhance AI adoption.

Concerns about Security and Skills

Across the board, accuracy, security and skill availability are top concerns for organizations. To address these challenges, common responses include implementing training programs, enhancing security systems, and developing governance policies. These measures aim to fortify the workforce's capabilities and safeguard sensitive information, reflecting a widespread acknowledgment of the importance of continuous skill development and robust security protocols in statistical organizations.

In-House Solutions as a Measure for Security

Many organizations are opting to develop in-house AI solutions to mitigate cost and security concerns. This strategy demonstrates a preference for self-reliance and control over external dependencies, allowing organizations to tailor solutions to their specific needs and maintain tighter security over their operations. In-house development using open-source also offers a more sustainable approach to managing costs.

Emphasis on Policy Development

The development of policies and guidelines is a critical step for many organizations, with the need to manage security, ethical, and regulatory concerns effectively. Establishing clear policies helps organizations navigate the complexities of AI

implementation, ensuring that ethical standards are maintained and regulatory requirements are met. This structured approach provides a foundation for responsible and secure AI adoption.

Practical Applications and Demonstrations

There is a strong interest in practical examples and use cases, indicating that seeing successful implementations can drive wider adoption and innovation. Real-world demonstrations of AI applications help to demystify the technology and illustrate its potential benefits, encouraging more organizations to explore and invest in AI solutions. This interest underscores the value of showcasing tangible outcomes to promote confidence and enthusiasm in AI technologies.

Alignment of International Cooperation Suggestions with Identified Needs

Suggestions for international cooperation align closely with the identified limitations. There is a clear emphasis on the need for training, funding, and shared knowledge repositories. These cooperative efforts are designed to bridge gaps in expertise, provide financial support, and facilitate the exchange of critical information, thus addressing the core challenges faced by organizations in adopting new technologies.

Annex 1: List of respondents

National organisations	International organisations
Austria	Bank for International Settlements (BIS)
Belgium - Flemish Statistical Authority	Brussels Institute for Statistics and Analysis (BISA)
Belgium – Statistics Belgium	United Nations Statistical Institute for Asia and the Pacific (UN SIAP)
Belgium - National Bank of Belgium	UN Trade and Development (UNCTAD)
Bulgaria	United Nations / Department of Economic and Social Affairs / Statistics Division (UNSD)
Canada	
Chile	
Costa Rica	
Cyprus	
Ecuador	
Estonia	
Finland	
Germany	
Indonesia	
Ireland	
Italy	
Japan	
Kosovo	
Latvia	
Lithuania	
Malta	
Mexico	
Netherlands	
New Zealand	
Norway	
Poland	
Republic of Azerbaijan	
Republic of Belarus	
Republic of Korea	
Russian Federation	
Slovenia	
Spain	
Sweden	
Switzerland	
Türkiye	
Ukraine	

Annex 2: Survey Questionnaire

CES 2024 EC8: Use of generative AI in statistical organizations

This is the eighth electronic consultation related to the 2024 plenary session of the Conference of European Statisticians (CES), which aims to **gather information on the use of generative AI in statistical organizations** and the challenges associated with it. The survey is conducted as part of the Generative AI Project under the umbrella of the High-Level Group for the Modernisation of Official Statistics (HLG-MOS).

The capabilities of artificial intelligence (AI) have significantly advanced in the last few years, and the statistical community is increasingly aware of the transformative potential of generative AI — a type of AI system that can generate new content such as text, images, or video.

Your participation in this survey will help us understand the current status of the generative AI usage in the field of official statistics and guide the development of the AI project which, in turn, will ensure that the project's outcomes effectively address the needs of statistical organizations.

Please submit your response (one consolidated response per organisation) using this online form by 30 June. If you have any questions or require clarification, please contact the UNECE Secretariat InKyung Choi at **choii@un.org**.

Thank you for your time and valuable input!

* Required

Section 1. Contact Information

1. Name of organization*

[   ]

2. Country (for national organization; please write "non-applicable" for others)*

[   ]

3. Name of contact person*

[   ]

4. Email address of contact person*

[   ]

Section 2. Use cases of generative AI in the organizations

5. Please rate what you think the level of impact generative AI has or is expected to have on the following work areas in the works of statistical organizations next 2-3 years*

	Highly impactful	Moderately impactful	Slightly impactful	Not impactful at all	Not sure
Data collection and processing	☐	☐	☐	☐	☐
Data analysis	☐	☐	☐	☐	☐
Dissemination and communication	☐	☐	☐	☐	☐
Coding and IT development	☐	☐	☐	☐	☐
Other administrative tasks	☐	☐	☐	☐	☐

6. Does your organization allow the use of generative AI for work?*

☐   Use of generative AI is permitted within the organization

☐   Use of generative AI is not permitted within the organization **Skip to Section 4**

☐   No explicit decision has been made whether staff can use generative AI or not

7. Which application areas utilize generative AI within your organization **(multiple choice)**? "Utilization" includes those in under experimentation as well as in production.*

☐   Code and IT development (e.g., code translation, code generation)

☐   Text generation for data processing (e.g., synthetic data generation, classification for COICOP)

☐   Text generation for analysis (e.g., analytical report generation, market analysis using text summaries from news articles)

☐   Communication - textual materials (e.g., press release, social media post)

☐   Communication - images or videos materials

☐   Data dissemination and information search (e.g., variable/time series search, content search including internal use)

☐   Chatbot (e.g., for survey respondents, interviewers)

☐   Administrative tasks (e.g., internal email, meeting notes, preparing presentation slides)

☐   Other (write response here) _____

8. Please rate what you think the level of impact generative AI has and is expected to have on the following aspects in statistical organizations next 2-3 years*

	Highly impactful	Moderately impactful	Slightly impactful	Not impactful at all	Not sure
Efficiency and productivity	☐	☐	☐	☐	☐
Accuracy and precision	☐	☐	☐	☐	☐
Use of new data sources	☐	☐	☐	☐	☐
Enhancement of service delivery to users	☐	☐	☐	☐	☐
Fostering creativity	☐	☐	☐	☐	☐

9. Does your organization have any application areas where it is currently developing or planning to develop in-house solutions? Please note that this includes solutions that have the paid services as part of components.*

☐   Yes

☐   No **Skip to Question #11**

☐   Not sure **Skip to Question #11**

10. (Optional) Please describe the projects. If there are any materials publicly available, please share the link here.

[   ]

11. Does the organization provide support for the paid service or platforms to use generative AI (e.g., subscription to ChatGPT)? Please note that this does not include existing paid subscriptions that offer new AI functionalities (e.g., Adobe).*

☐   Yes

☐   No **Skip to Section 3**

☐   Not sure **Skip to Section 3**

12. (Optional) Please list the services or platforms that are used for generative AI. If the information is sensitive, please leave as blank

[   ]

Section 3. Organizational policy on generative AI

13. Is there a policy or guidelines in the organization on how to use generative AI?*

☐   Yes

☐   Not yet, but under development

☐   No **Skip to Section 4**

14. (Optional) Please describe the policy / guidelines on organizational or national levels (e.g., is it internal or publicly available? What is the scope of the policy?). If there are any materials publicly available, please share the link here.

| |
| |

Section 4. Challenges in using generative AI

15. Please rate the level of concern regarding risks associated with use generative AI in your organizations*

	Very concerned	Moderately concerned	Slightly concerned	Not concerned at all
Ethical concerns	☐	☐	☐	☐
Accuracy and lack of validation mechanism (e.g., factual accuracy, outdated data, hallucination)	☐	☐	☐	☐
Confidentiality, privacy and security (e.g., prompt injection, poisoning LLMs)	☐	☐	☐	☐
Copyright and legal issues	☐	☐	☐	☐
Negative public perception	☐	☐	☐	☐
Dependency to external providers	☐	☐	☐	☐
Overuse by staff	☐	☐	☐	☐
Misuse (e.g., neglecting human oversight)	☐	☐	☐	☐
Lack of reproducibility	☐	☐	☐	☐

16. (Optional) Please describe any measures taken to reduce the risks associated with generative AI

17. To what extent do the following organizational issues limit your organization's ability to use generative AI?*

	Very limiting	Moderately limiting	Slightly limiting	Not limiting at all	N/A (AI is not permitted in my organisation)
Uncertainty around national regulation	☐	☐	☐	☐	☐
Lack of buy-in or resistance from users / staff	☐	☐	☐	☐	☐
Lack of buy-in or resistance from management	☐	☐	☐	☐	☐
Lack of coordination among different parts of organization	☐	☐	☐	☐	☐
Strict policies and guidelines	☐	☐	☐	☐	☐

18. (Optional) Please describe any measures taken to overcome the issues

19. To what extent do the following technical and other issues limit your organization's ability to use generative AI?*

	Very limiting	Moderately limiting	Slightly limiting	Not limiting at all	N/A (AI is not permitted in my organisation)
Availability of staff with appropriate skills and capability	☐	☐	☐	☐	☐
Security	☐	☐	☐	☐	☐
Cost implication	☐	☐	☐	☐	☐
Access to computer hardware	☐	☐	☐	☐	☐

20. (Optional) Please describe any measures taken to overcome the issues

21. (Optional) Please let us know if you have any suggestions on international cooperation that would be most helpful.