

Advisory Opinion

**Transforming the Development of Management Leaders
and Management Professionals in the Era of AI
Utilization**



11 May 2026

Science Council of Japan

**Committee on Management and Business Studies
Subcommittee on the Development of Management
Leaders and Professionals for the Age of AI**

This Advisory Opinion is largely the outcome of the deliberations of the Subcommittee on the Development of Management Leaders and Professionals for the Age of AI, the Committee on Management and Business Studies, Science Council of Japan.

**Subcommittee on the Development of Management Leaders and Professionals for
the Age of AI
Committee on Management and Business Studies**

Chair	HARA Yoshinori	(Associate Member)	Professor, Faculty of Data Science, Osaka Seikei University / Professor Emeritus, Kyoto University
Vice-Chair	SUZUKI Hisatoshi	(Associate Member)	Professor Emeritus, University of Tsukuba (served as Vice-Chair until September 2025)
Vice-Chair	SAKA Chika	(Associate Member)	Professor, School of Business Administration, Kwansei Gakuin University (served as Vice-Chair from October 2025)
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	NOGUCHI Akihiro	(Section I Council Member)	Professor, Department of Business Administration, Faculty of Business Administration, Nanzan University
	YAMADA Yachiko	(Section I Council Member)	Professor, Chuo Law School, Chuo University / Attorney at Law
	ASAHI Yumi	(Associate Member)	Professor, Department of Management, School of Management, Tokyo University of Science

IWAKI Hideki	(Associate Member)	Professor, Department of Management, School of Management, Tokyo University of Science
OHTA Yasuhiro	(Associate Member)	Professor, Graduate School of Business Administration, Keio University
ONZO Naoto	(Associate Member)	Professor, Faculty of Commerce, Waseda University
KANIE Akira	(Associate Member)	Professor, Graduate School of Professional Accountancy, Aoyama Gakuin University (served as a Subcommittee member until March 2025)
KAMBAYASHI Norio	(Associate Member)	Professor, Graduate School of Business Administration, Kobe University
SAITO Shinya	(Associate Member)	Professor Emeritus, Yokohama National University
SATO Nobuhiko	(Associate Member)	Professor, Graduate School of Professional Accountancy, Kumamoto Gakuen University
SANO Masahiro	(Associate Member)	Director, AI Research Laboratory, Cosmopier Co., Ltd. / Professor Emeritus, Meiji University
TOKUGA Yoshihiro	(Associate Member)	Vice-President and Professor, Kyoto University of Advanced Science / Professor Emeritus, Kyoto University
HIRATA Sadayo	(Associate Member)	Associate Professor, Graduate School of Engineering and Science, Shibaura Institute of Technology

The following members have contributed to this Recommendation.

KATO Shizuko	Professor Emeritus, Meiji University
SENGOKU Masakazu	President Emeritus and Professor Emeritus, Graduate Institute for Entrepreneurial Studies / Professor Emeritus, Niigata University
SHIMADA Keiichiro	Executive Alumnus, Sony Group Corporation
YAMADA Keiji	Executive Professional, BIRD INITIATIVE, Inc.
KAGEHIRO Tatsuhiko	Distinguished Researcher, Advanced AI Innovation Center, Digital Innovation R&D, Research & Development Group, Hitachi, Ltd.
KAWAKAMI Takayoshi	Managing Director, Industrial Growth Platform, Inc. (IGPI) / CEO, Advanced Technology Acceleration Corporation. (ATAC)
YUKI Hidehiko	Certified Public Accountant
YOSHIDA Lui	Associate Professor, Department of Technology Management for Innovation, Graduate School of Engineering, The University of Tokyo
KIKUCHI Tadao	Chairman, Royal Holdings Co., Ltd.
KOBAYASHI Naoaki	Partner, Financial Services Division, PwC Japan (PricewaterhouseCoopers Japan) Audit Firm
FURUSAWA Tomoyuki	Member, Public Interest Oversight Board (PIOB)
KINEHARA Yoshiki	Senior Researcher, Center for Policy and the Economy, Mitsubishi Research Institute, Inc.
TAKEDA Yoko	Professor, Graduate School of Strategic Management, Chuo University
TSURU Yuki	Attorney at Law, Kyowa Sogo Partners Law Office
NARYU Tatsuhiko	Professor Emeritus, Kyoto University

Staff members responsible for preparation of Advisory Report.

Secretariat	GOKE Yasunori	Director, Division for Scientific Affairs I
	KASE Hirokazu	Deputy Director, Division for Scientific Affairs I
	TAKAHATA Maiko	Official, Division for Scientific Affairs I

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EXECUTIVE SUMMARY

I Background

While Japan is facing the structural challenge of population decline, rapid technological innovation, including generative AI, is fundamentally transforming the underlying assumptions of society, work, and education. In particular, AI is increasingly reshaping the structure of managerial decision-making. As a result, redefining the competencies required of management leaders and management professionals, and developing educational systems to support them, has become an urgent policy issue.

Against this background, this advisory opinion identifies the challenges and necessary responses to them during the transition period toward 2030 and proposes future directions for the development of management leaders, management professionals, and management education itself. From the perspective of the co-evolution of humans and AI, it also presents an integrated review of three elements across management education: educational content, educational guidelines, and certification systems. This review also applies to higher education, lifelong learning, and national qualification systems.

II Current Status and Issues

In industry, while labor shortages are worsening, expectations are rising for improved productivity through the utilization of AI technologies. Taking into account these changing conditions, new approaches to the development of management leaders are increasingly required. On the other hand, the spread of generative AI is also transforming job allocation and organizational structures. It is therefore urgently necessary to cultivate human resources who can appropriately evaluate and utilize AI-related opportunities and risks across entire business operations.

However, practical management education addressing AI-related risks, governance, and legal and ethical considerations remains insufficiently developed. The same applies to the education of management professionals: although demand for AI utilization continues to expand, practitioners remain cautious about AI adoption in real-world settings, and the development of AI risk-management guidelines has lagged behind.

Accordingly, three major challenges must be addressed: establishing systematic education and training programs to improve AI literacy, clarifying policies for AI utilization in corporations and real-world settings, and promoting the development of management

professionals. In this advisory opinion, AI literacy refers to the overall set of abilities required to understand the fundamental structures and mechanisms of AI, to critically evaluate the reliability and biases of AI outputs, to assess risks from legal and ethical perspectives, and to utilize AI appropriately in line with managerial objectives.

Furthermore, although AI literacy education is progressing in university- and graduate-level management education, the relationships among cognitive competencies (AI understanding and analytical skills), non-cognitive competencies (ethics, judgment, and collaboration), and cross-boundary competencies that integrate such competencies have not yet been sufficiently clarified.

In addition, advanced professional education in fields such as accounting and law requires systematic reform of the entire learning process to adapt it to the AI era, including national examinations, qualification assessments, and Continuing Professional Development (CPD) systems.

III Main Points of the Advisory Opinion

This advisory opinion presents recommendations based on the following three pillars.

(1) Systematizing 'Human Capability + AI' Common Foundational Education

In the management education for the AI era, the following three categories of competencies must be developed in an interrelated and seamless manner: (i) cognitive competencies (AI literacy); (ii) non-cognitive competencies (authenticity, ethical judgment, and empathy); and (iii) integrative and cross-boundary competencies (namely the ability to coordinate multiple domains and stakeholders and to lead initiatives from conception to implementation).

As a common foundation for management education, educational programs should place uniquely human responsibility for judgment and ethics at their core while establishing common foundational courses that address AI-assisted decision-making. Through interdisciplinary learning and practical exercises using real-world data, these programs should aim to develop professionals capable of creating sustainable value in collaboration with AI.

(2) Development and Standardization of Educational Systems

University and graduate-level education should be redesigned with AI literacy as its foundation through curricula that integrate strategy, organization, finance, law, and related fields. Learning outcomes for cognitive, non-cognitive, and integrative competencies should also be clearly defined.

In professional and continuing education, practice-oriented reskilling programs should be standardized, and learning systems should also be established to create a continuous cycle linking university education, in-company training, and professional education. As a common framework to support these efforts, the “Guidelines for Management Education in the AI Era” should be formulated to enable the development of management education that balances standardization and flexibility.

(3) Reform of Certification Systems

In a society where the use of AI is assumed, national qualifications and professional certification systems must shift from knowledge-centered approaches toward systems that appropriately evaluate judgment, ethical responsibility, and practical experience.

By combining staged certification, continuous learning, and experience-based evaluation, the certification systems should be reconstructed to cultivate professionals capable of exercising accountability and public responsibility in AI-assisted decision-making.

Professional fields such as accounting and law require particular attention, as consistent reforms are needed to adapt the entire learning process including pre- and post-examination education, professional training, and Continuing Professional Development (CPD) systems, for the AI era.

The reforms outlined above are mutually reinforcing. Redefining competencies demands new curricula. New curricula require reformed certification systems. Reformed certification systems, in turn, provide the foundation for sustainable professional development.

In an era in which AI is increasingly involved in decision-making, this advisory opinion proposes a reconstruction of management education that places the final responsibility for judgment borne by humans and its ethical foundation at its core. Through collaboration among government, industry, educational institutions, and society, it is essential to promote the development of management leaders and management professionals who will lead the creation of sustainable value through co-evolution with AI.

Advisory Opinion

The Significance of Male-Female Sex Information for Enriching Gender Statistics



5 June 2026

Science Council of Japan

**Subcommittee on Inclusion from an Intersectional
Perspective on Gender and Generations, Sociology
Committee**

This Advisory Opinion is the outcome of the deliberations of the Subcommittee on Inclusion from an Intersectional Perspective on Gender and Generations, Sociology Committee, Section I, Science Council of Japan.

Subcommittee on Inclusion from an Intersectional Perspective on Gender and Generations, Sociology Committee

Chair	SHIRAHASE Sawako	(Section I Council Member)	Research Professor, Graduate School of Agricultural and Life Sciences, The University of Tokyo
Vice-chair	OSAWA Mari	(Associate Member)	Professor Emeritus, The University of Tokyo
Secretary	KAWANO Ginko	(Associate Member)	Professor, Office for the Promotion of Gender Equality, Kyushu University
Secretary	SUMII Hiroshi	(Associate Member)	Visiting Professor, Faculty of Comprehensive Rehabilitation, Hiroshima International University
	AIZAWA Michiko	(Associate Member)	Professor, Graduate School of Law, Hitotsubashi University
	ANEHA Aki	(Associate Member)	Professor, Faculty of Economics, Komazawa University
	UENO Chizuko	(Associate Member)	Professor Emeritus, The University of Tokyo
	OCHIAI Emiko	(Associate Member)	Professor Emeritus, Kyoto University / Professor, Faculty of Sociology, Kyoto Sangyo University
	KAIZUMA Keiko	(Associate Member)	Professor, Faculty of Humanities and Social Sciences, Iwate University
	KIMOTO Kimiko	(Associate Member)	Professor Emeritus, Hitotsubashi University / Specially Appointed Researcher, Fair Labor Research Institute, Graduate School, Hosei University
	KONDO Ayako	(Associate Member)	Professor, Institute of Social Science, The University of Tokyo
	SANTOKI Makiko	(Associate Member)	Associate Professor, Graduate

		School of Humanities and Social Sciences, Hiroshima University
SUDA Yuko	(Associate Member)	Professor Emeritus, Toyo University
TSUGE Azumi	(Associate Member)	Professor, Faculty of Sociology, Meiji Gakuin University
MINAGAWA Masumi	(Associate Member)	Associate Professor, Faculty of Liberal Arts, Chuo Gakuin University
MURAO Yumiko	(Associate Member)	Associate Professor, Department of Sociology, Faculty of Sociology, Toyo University

Staff members responsible for preparation of Advisory Report.

Secretariat	GOKE Yasunori	Director, Division for Scientific Affairs I
	KASE Hirokazu	Deputy Director, Division for Scientific Affairs I
	NAKASHIMA Sayaka	Unit Chief, Division for Scientific Affairs I (Until December 2025)
	TOMATSU Takahiro	Unit Chief, Division for Scientific Affairs I (From January 2026)

EXECUTIVE SUMMARY

I Background

The "Subcommittee on Inclusion from an Intersectional Perspective on Gender and Generations, Sociology Committee" (hereafter, the Subcommittee) has focused on issues surrounding gender categories in social surveys because information on respondents' gender is fundamental to the compilation of gender statistics. Gender statistics are an important resource and a means of discussion for clarifying the various issues that cause gender inequalities. In order to shed light on the degree and nature of gender inequalities, statistical information that takes gender differences into account is required. This raises the question on how to understand gender differences, and specifically on how to configure the answer options in the question item. There is also an argument that, since we are speaking of "gender" rather than simply male or female sex, the question should properly be asked under a "gender" question rather than a "sex" one.

At the First World Conference on Women held in Mexico City in 1975, the importance of gender statistics was highlighted from the perspective of gaining a macro-level understanding of the social status of women and measuring the effectiveness of policies aimed at improving it. Even there, however, the debate between "gender" statistics and "sex-disaggregated" statistics was not fully developed. Sex-disaggregated statistics are subsumed within gender statistics, and both constitute critically important evidence for understanding the realities and challenges of pursuing gender equality and for demonstrating the effectiveness of various policies.

In discussions about gender versus sex disaggregation, both must never be positioned as opposing axes. Rather, in order to develop and enrich gender statistics aimed at achieving gender equality, while also making use of statistical information collected to date, the sex question in survey forms plays an important role. While it cannot be denied that the existing sex questions have shortcomings, the negative impacts of eliminating such questions altogether would be serious.

The question most commonly used in social statistics to date has been: "Are you male or female?" However, an issue has been raised that these two options alone are insufficient, since when seeking to understand the actual status of macro-level phenomena such as "inequality" across the entire population, there are individuals who have gender identity other than the male/female binary. Furthermore, consideration for those who provide statistical information — i.e., the respondents who answer the sex question — is also critically important from the standpoint of research ethics. For example, various surveys have offered only the two options of male or female, having been since it has been considered as natural that respondents will answer either of them. However, this has been

increasingly raising doubts. Some people may hold self-identifications other than the male/female binary, and cases of gender identity beyond that binary or sexual orientations differing from the majority have led to criticism that minorities are being disregarded. Further, that has led the claim by some people that the sex question should be completely removed. Beneath this lurks a movement to eliminate the said question from the perspective of human rights protection, and a risk of falling into a binary debate over whether enriching gender statistics or giving consideration for gender minorities should take priority.

Against this backdrop, this Subcommittee reaffirms its position, under the basic shared understanding that enriching gender statistics and showing consideration for gender minorities are compatible, that the significance of the existence of sex question would be far from negligible to realize gender equality.

II Current Situations and Issues

Focusing on developments related gender statistics in Japan: in 1994, the Headquarters for the Promotion of Gender Equality was established and in 2001, it was reorganized into the Gender Equality Bureau, Prime Minister's Office and the "Plan for Gender Equality 2000" was adopted in 1996. In 2003, the Headquarters set the target that "women should occupy at least around 30% of leadership positions by 2020" (the "30% by 2020" target) by using a goals-and-timetable approach. The Third Basic Plan for Gender Equality (2010) actively presented concrete target outcome, and the Fifth Basic Plan for Gender Equality (2020) explicitly incorporated the term "gender statistics" as part of strengthened implementation frameworks.

On the other hand, questions began to be raised about the classification of sex into only two categories as male and female and about the necessity of collecting sex/gender information. In response to the growing movement both domestically and internationally to respect the human rights of LGBTQ+ and other individuals, the statement that "it goes without saying that it is important to respect diversity" "regarding sexual orientation and gender identity" was incorporated into the Fifth Basic Plan's section on "Basic Perspectives and Issues to be Addressed". It was also decided that not only the aim of "surveying and publishing the state of development from the perspective of enriching gender statistics," but also the goal "understanding the current situation and examining issues concerning consideration for diverse sexualities" would be incorporated into the section on "IV Development and Strengthening of the Implementation Framework".

Few would dispute the importance of enhancing the development of gender statistics. On the other hand, from the perspective of respecting diversity, reviews of gender/sex question in administrative procedures and public documents at the municipal level are have been advanced. As the actual status varies by municipality, it is not easy to identify overall trends with concrete evidence. Whether to retain the gender/sex question are decided by the

policy of "reviewing any questions not directly necessary for official business." While each municipality is carrying out its own review of gender/sex questions, no guidelines common to all municipalities exists yet.

III Substance of the Advisory Opinions

In light of the above, the Subcommittee conducted hearings with four municipalities regarding their approaches to gender/sex questions and obtained the following findings. First, within the organizational structures of municipalities, as the department responsible for human rights protection and consideration for sexual minorities and the one responsible for compiling gender statistics are organized separately, frequent and they have not been working together frequently and organically in the current situation. As compilation of statics and human rights protection activities have been proceeded individually in their respective roles, it was not originally anticipated to examine the nature of the gender questions from the perspective of enriching gender statistics. Nevertheless, gender statistics are a means and effective source of evidence for evaluating policies aimed at achieving gender equality. At the same time, the existence of the persons concerned who make up those statistics must never be trivialized, and sufficient consideration must be given to respecting the human rights of each and every person.

In compiling gender statistics as a crucial means of achieving gender equality, the foundational data built from the sex questions is indispensable for understanding current conditions and for evaluation purposes, and the question of whether to retain such questions could undermine the very foundations of gender statistics. What must be emphasized here is that the recognition of diversity — which underlies the debate over whether to retain the sex questions — can and must coexist with the enrichment of gender statistics.

The Subcommittee would like to highlight the following three points for consideration:

1. Retaining the sex questions as the basis for gender statistics to provide evidence for policy evaluation
2. Providing thorough ethics education for those involved in statistical work, in order to ensure full human rights protection upon the development of gender statistics
3. Securing adequate staffing and budget allocations at the municipal level that take into account the need to develop and manage statistical information systems