中国科技工作者对公众参与科学相关问题的态度和行为
——基于科技工作者科研伦理意识状况调查的初步发现

Chinese Scientists' Attitudes and Behaviors in Public Participation in Science and Technology: Primary findings from Survey on S&T Personnel's Awareness of Science and Technology Ethics

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中国科学技术发展战略研究院
CASTED

成立于1982年，科技部下属政策研究和咨询机构。

Founded in 1982, affiliated to MOST

Providing science and technology related policy advises

约100名研究人员，8个研究所：综合所、体制所、预测所、统计所、投资所、产业所、农村所、社会所。

Ca. 100 stuff

Eight institutes

Comprehensive development, S&T systems and management, Foresight and evaluation, S&T statistics and analysis, S&T investment, S&T for industrial development, rural and regional development, ISTS

科技与社会发展研究所
ISTS

- 科技创新的社会学研究：科学共同体、科技人才、科技伦理、性别研究
- 风险灾害的社会学研究
- 评价和评估

Sociology of science/technology/innovation

- Scientific community
- Talents
- S&T ethics
- Gender issues…

Sociology of risk/disaster

Evaluation and assessment

大规模社会调查

Organizing large-scale surveys

- 2004, MEDOW, 40 000 households in 11 provinces in Western China
- 2008, GSSTP, 30 000 S&T personnel in China
- 2008-2011, POPNA, 12 000 households in Sichuan-earthquake-hit area
- 2014, Ethic awareness survey, 10 000 S&T personnel in China…

国际合作

International cooperation

- Norway, Germany, US …

提纲 Outline

公众参与科学

公众参与科学中科技工作者的意义和作用

调查介绍

科技工作者对公众参与科学的理解

科技工作者对参与公共讨论的态度

科技工作者在公众参与科学中的行为表现

分析和讨论

Public Participation in Science (PPS)

Scientists' role in PPS

Survey information

Scientists' understanding of PPS

Scientists' attitudes on engaging public debate

Scientists' behaviors in PPS

Analysis and discussion

公众参与科学 Public Participation of Science (PPS)

历史演变：公众接受科学➔公众理解科学➔公众参与科学

Science popularization ➔ Public understanding of science ➔ Public participation in science

公众参与科学有益于增进科技交流

Public participation as a way of science communication

公众参与科学有助于健全科技创新治理机制

Public participation as a way of S&T governance

负责任研究与创新：多主体互动的共同责任

Responsible Research and Innovation (RRI): stakeholders' deliberation and co-responsibility

公众参与中科技工作者的意义 Scientists 'role in PPS

科研诚信➔负责任的研究➔负责任研究与创新

Science integrity ➔ Responsible conduct of research (RCR)➔ RRI

科技工作者作为社会公众的成员可以参与科技治理和决策

As members of the public, scientists can engage in governance and decision making of S&T

科技工作者可以通过与其它公众交流从而提高一般公众的科学素养和参与科技决策的能力，从而保障公众参与科学的质量和成效

Scientists' public communication efforts can improve the general public's scientific literacy and the ability to participate in decision-making, thus ensuring the quality and effectiveness of public participation in science.

科技工作者在公众参与科学中发挥的作用 Scientists 'role in PPS

参与科学普及、传播和沟通

Science popularization, dissemination and communication

参与科技决策咨询

S&T Policy consultation

参与与科技相关的社会热点问题讨论

Participating in “hot” public debates regarding S&T

调查介绍 Survey Information

- **定性访谈与座谈 Qualitative interview and panel discussion**
  - 20名科研人员访谈（医学、生命科学、环保等领域）Interviews with 20 research personnel (medicine, life science, environmental protection, etc.)
  - 6个单位座谈会（重点大学、地方大学、医学院、农科院、中科院等）Six panel discussions (key universities, local universities, medical universities, agricultural academy, Chinese Academy of Sciences, etc.)
- **问卷调查 Questionnaire**
  - 调查时间：2014年10月-11月 Survey time: October - November 2014
  - 调查对象：全国五大类科技工作者 Respondents: S&T workers across China (Research personnel)
  - 抽样方案 Sampling scheme
    - 依托中国科协调查站点，对科技工作者随机抽样 Random sampling through CAST survey stations
    - 站点类型：高校、院所、医疗机构、中学、学会、园区、县区基层 Survey station types: Universities, research institutes, medical organizations, middle schools, learned societies, science parks, county-level and grassroots organizations
  - 调查方式：电子问卷，网上调查 Survey methods: Electronic questionnaire, online survey
  - 问卷回收：Questionnaire collection:
    - 单位问卷：324份 Questionnaire for institutions: 324 respondents
    - 个人问卷：12332份，回收率72% Questionnaire for individuals: 12,332 respondents, response rate 72%

科技工作者对公众参与科学的理解

Scientists’ understanding of PPS

公众参与科学的范围 Areas of PPS

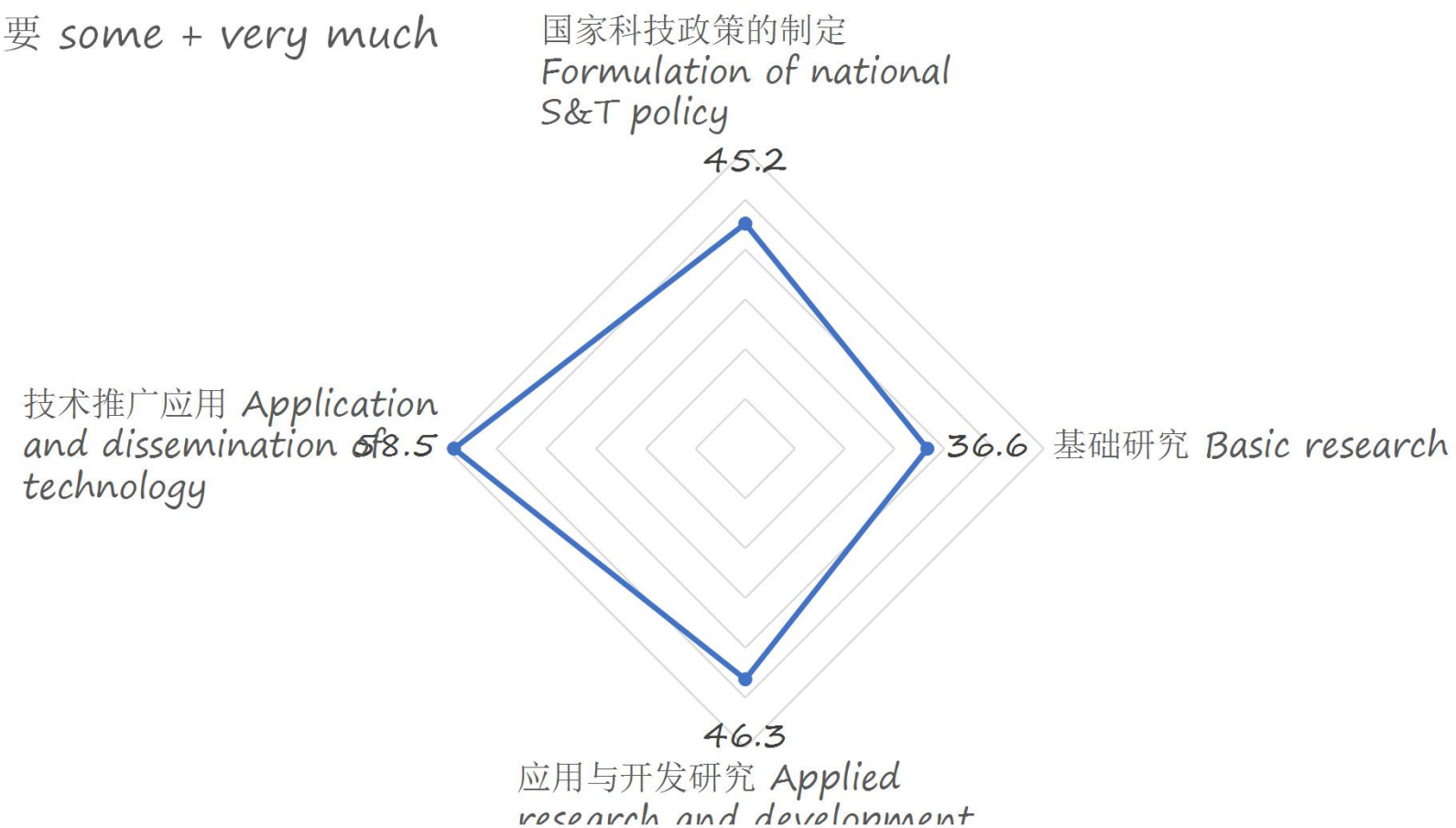
表1 以下活动是否需要公众参与

Which kind of activities need public participation

		不太需要	有些需要	非常需要	不知道/说不清
是否需要公众参与	国家科技政策制定	52.8	23.4	21.8	2.0
	基础研究	61.3	21.9	14.7	2.2
	应用与开发研究	51.8	23.7	22.6	1.9
	技术推广应用	40.0	20.3	38.2	1.5

	Not much	**Some**	**Very much**	**Not known/hard to say**
Formulation of national S&T policy	52.8%	23.4%	21.8%	2.0%
Basic research	62.3%	21.9%	14.7%	2.2%
Applied research and development	51.8%	23.7%	22.6%	1.9%
Application and dissemination of technology	40.0%	20.3%	38.2%	1.5%

有些+非常需要 some + very much



公众参与科学的方式 Means of PPS

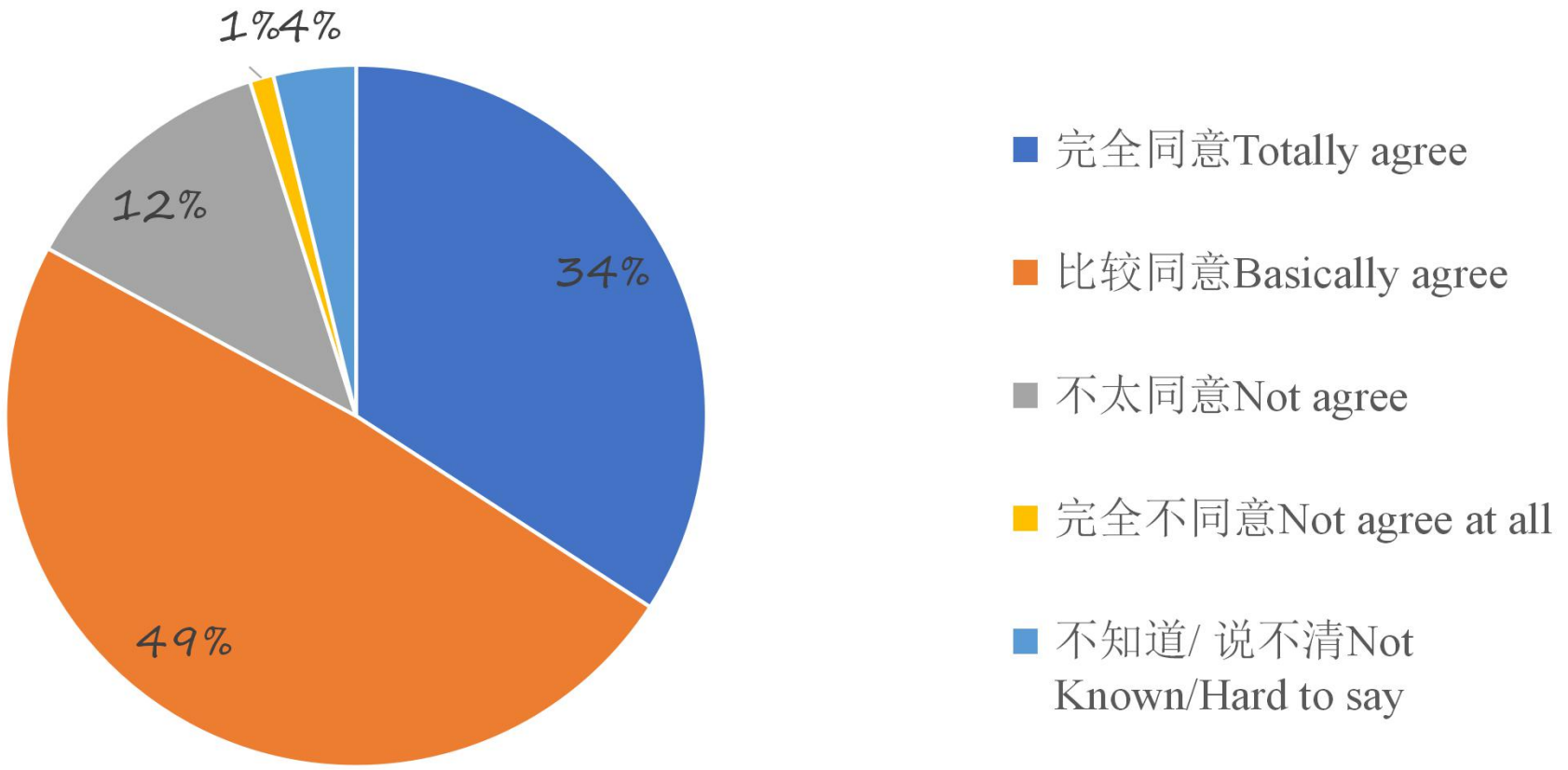
表2 为推动公众参与科技决策，政府应该做的工作
For improving PPS, the government should do:

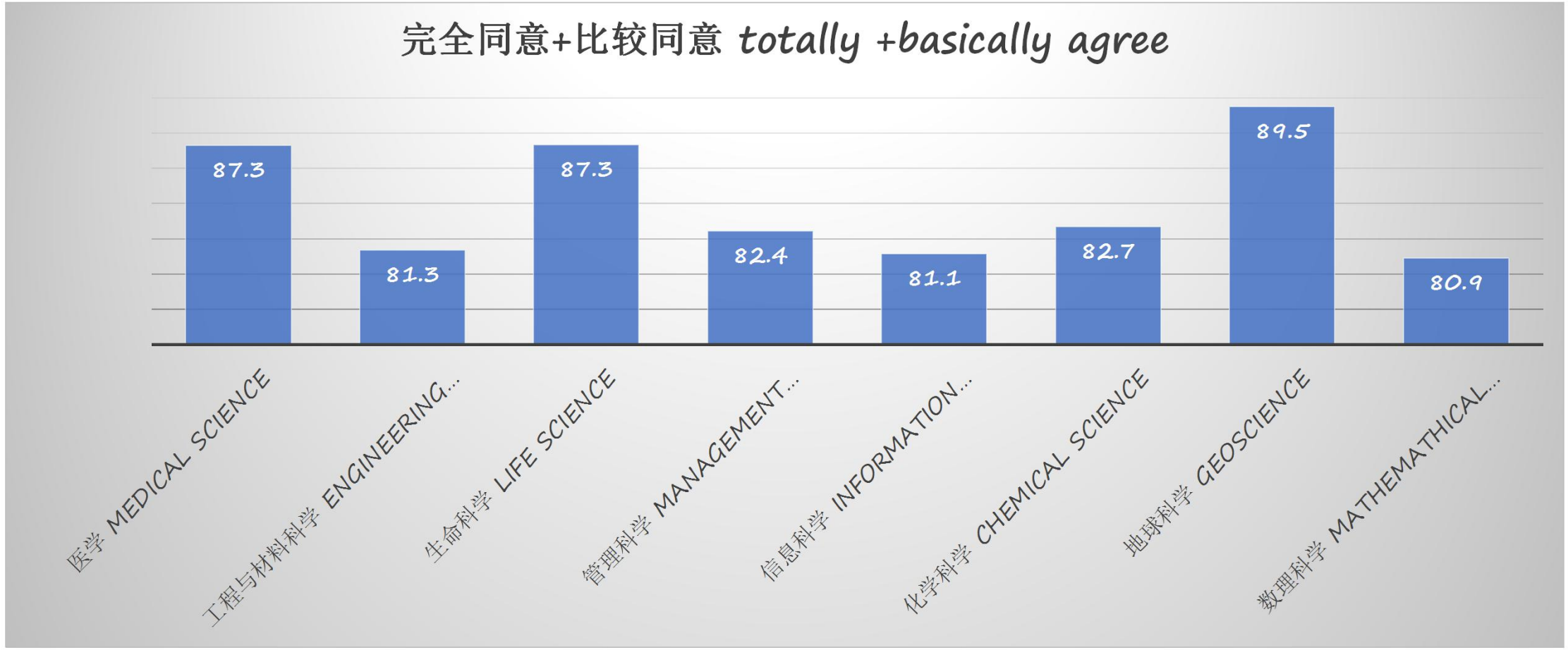
	应该做 Should	不应该做 Should not	不清楚 Not known	样本量 Frequency
做到信息公开透明，充分告知公众相关事项 To make the information public and transparent, and make the public fully informed by related situation	94.2%	1.9%	3.9%	5,684
通过调查研究，充分了解公众的需求和态度 To comprehensively understand the requirement and attitude of the public by survey research.	95.8%	1.7%	2.5%	5,684
通过咨询会、听证会等方式，与公众共同讨论相关事项 To discuss related things together with the public by ways of consultation and hearing.	92.3%	2.6%	5.0%	5,684
赋予公众参与最终决定的权力 To entitle the public the right to participate the final decision.	76.6%	10.1%	13.3%	5,683

科技工作者对参与公共讨论的态度

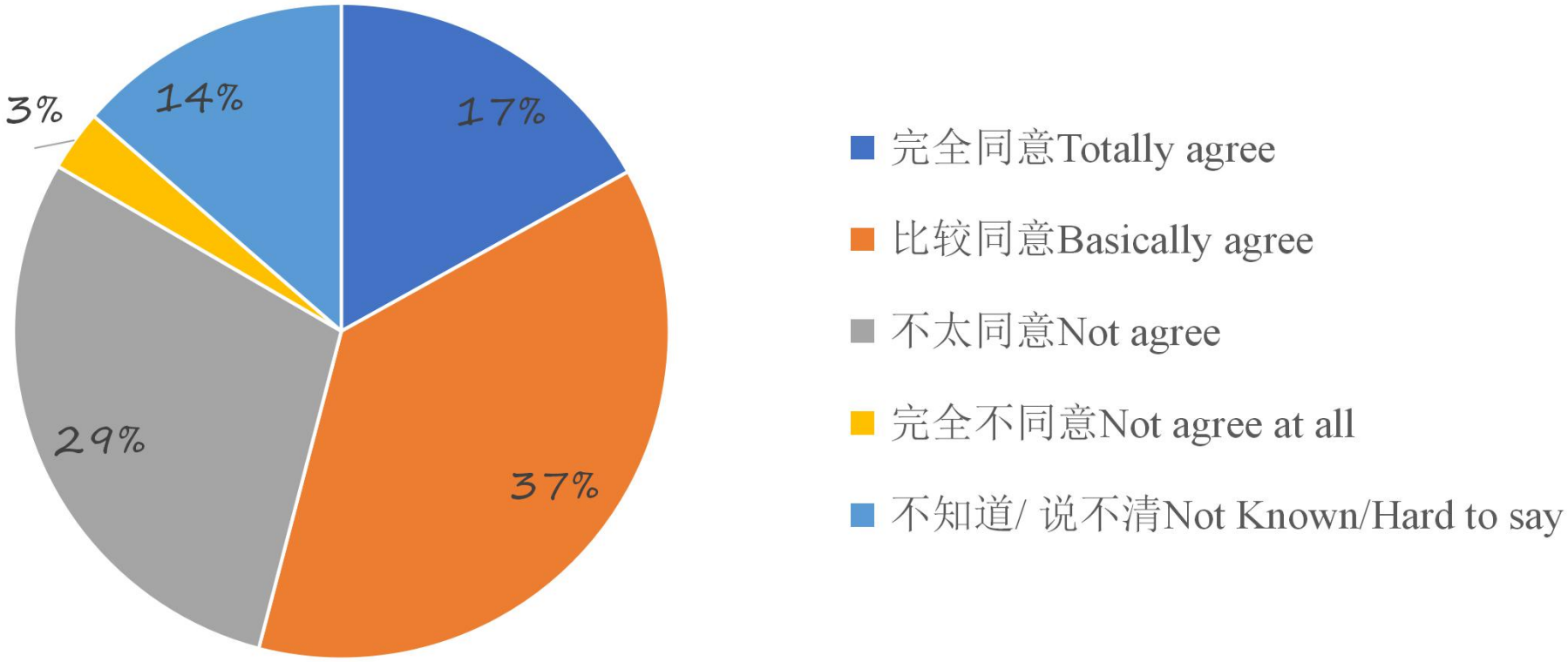
Scientists’ attitudes on engaging public debate

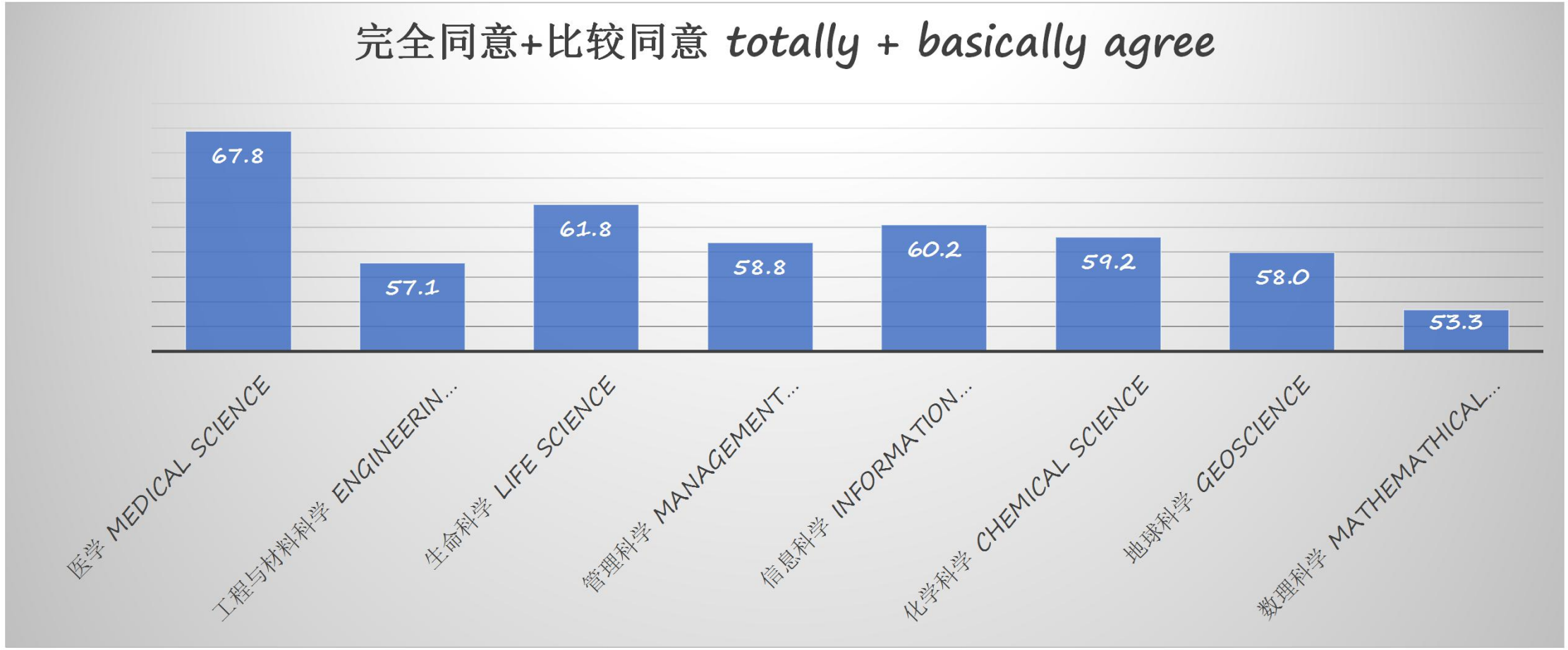
科学家应该发挥专业优势，积极参与社会热点事件的讨论
Scientists should make use of their professional advantages and actively participated in debates on issues of public concern



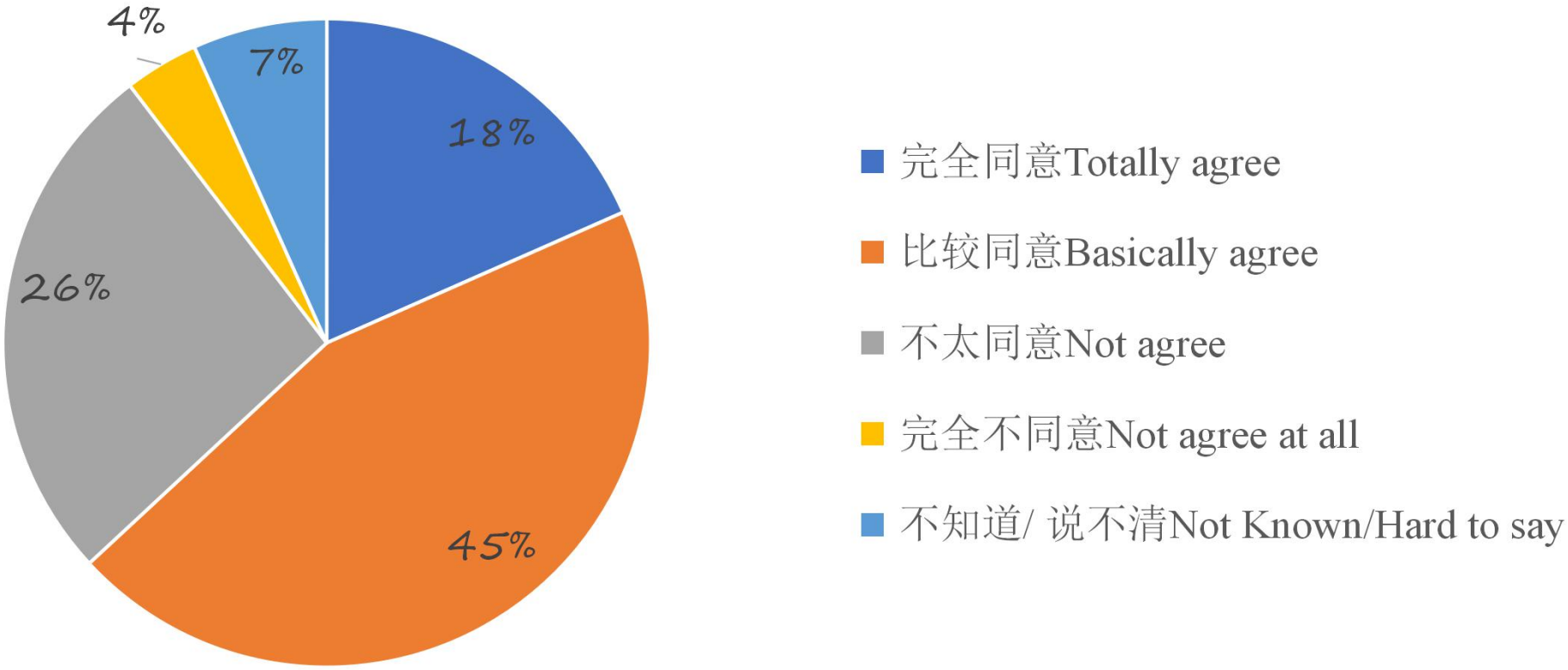

完全同意+比较同意 totally +basically agree
87.3
81.3
87.3
82.4
81.1
82.7
89.5
80.9
医学 MEDICAL SCIENCE
工程与材料科学 ENGINEERING...
生命科学 LIFE SCIENCE
管理科学 MANAGEMENT...
信息科学 INFORMATION...
化学科学 CHEMICAL SCIENCE
地球科学 GEOSCIENCE
数理科学 MATHEMATHICAL...

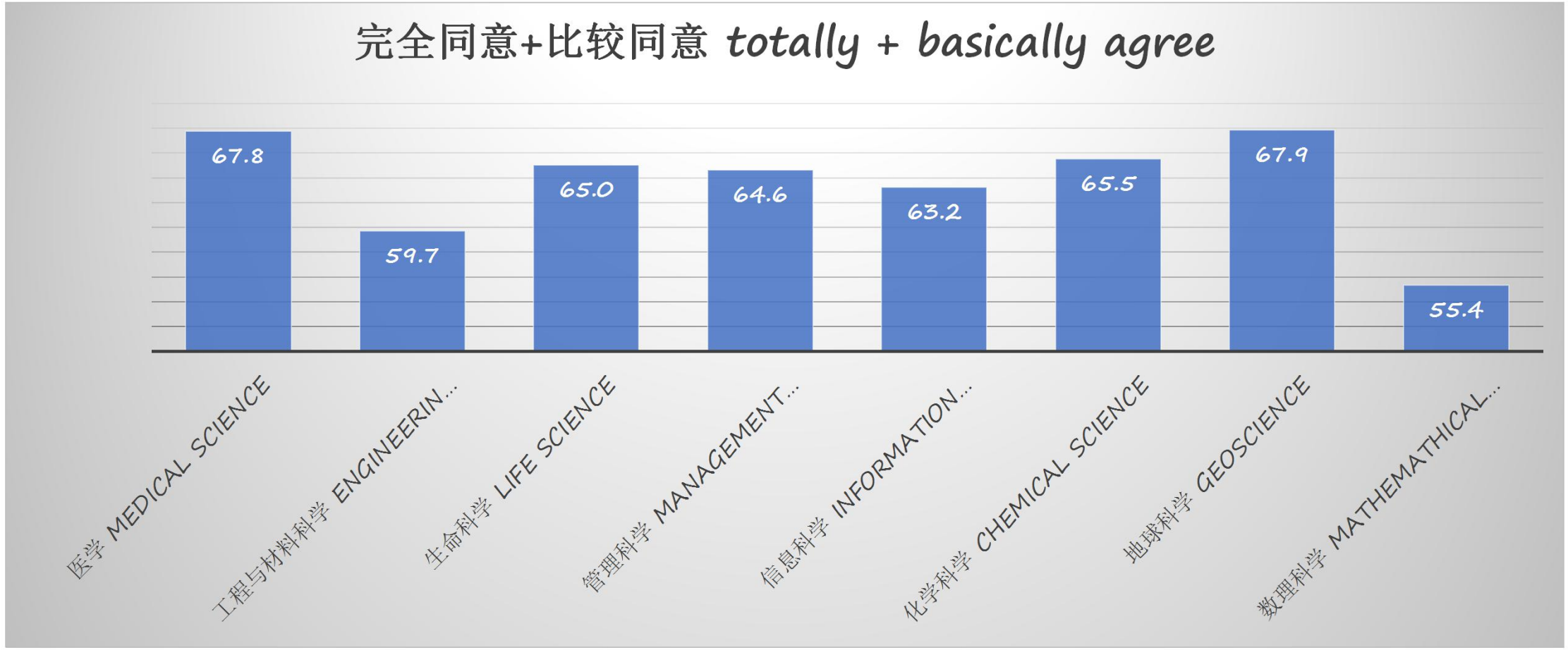
我国媒体在有关科技的报道中经常出现歪曲和误导
Media reports of science and technology in China often appear distorting and misleading




完全同意+比较同意 totally + basically agree
67.8
57.1
61.8
58.8
60.2
59.2
58.0
53.3
医学 MEDICAL SCIENCE
工程与材料科学 ENGINEERIN...
生命科学 LIFE SCIENCE
管理科学 MANAGEMENT...
信息科学 INFORMATION...
化学科学 CHEMICAL SCIENCE
地球科学 GEOSCIENCE
数理科学 MATHEMATHICAL...

当前我国公众科学素质不高，社会心态浮躁，这使得科学家参加公共问题的讨论有很大风险
At present, the scientific literacy of the public in China is low, and the social mood is blundering, which brings big risks for scientists to participate the discussion of public issues




完全同意+比较同意 totally + basically agree
67.8
59.7
65.0
64.6
63.2
65.5
67.9
55.4
医学 MEDICAL SCIENCE
工程与材料科学 ENGINEERIN...
生命科学 LIFE SCIENCE
管理科学 MANAGEMENT...
信息科学 INFORMATION...
化学科学 CHEMICAL SCIENCE
地球科学 GEOSCIENCE
数理科学 MATHEMATHICAL...

科技工作者在公众参与科学中的行为表现

Scientists’ behaviors in PPS

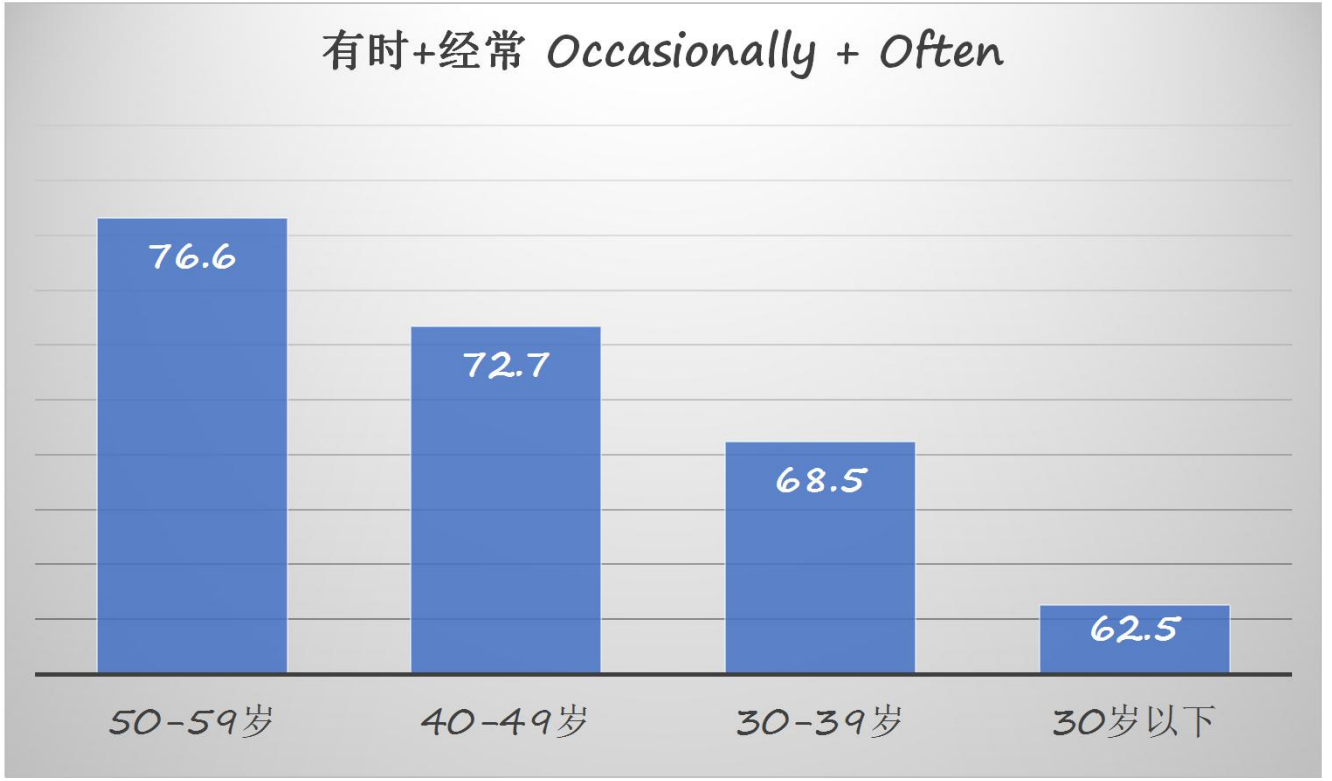
去年，您有没有做过以下活动：
Did you participate in the following activities in the past year?

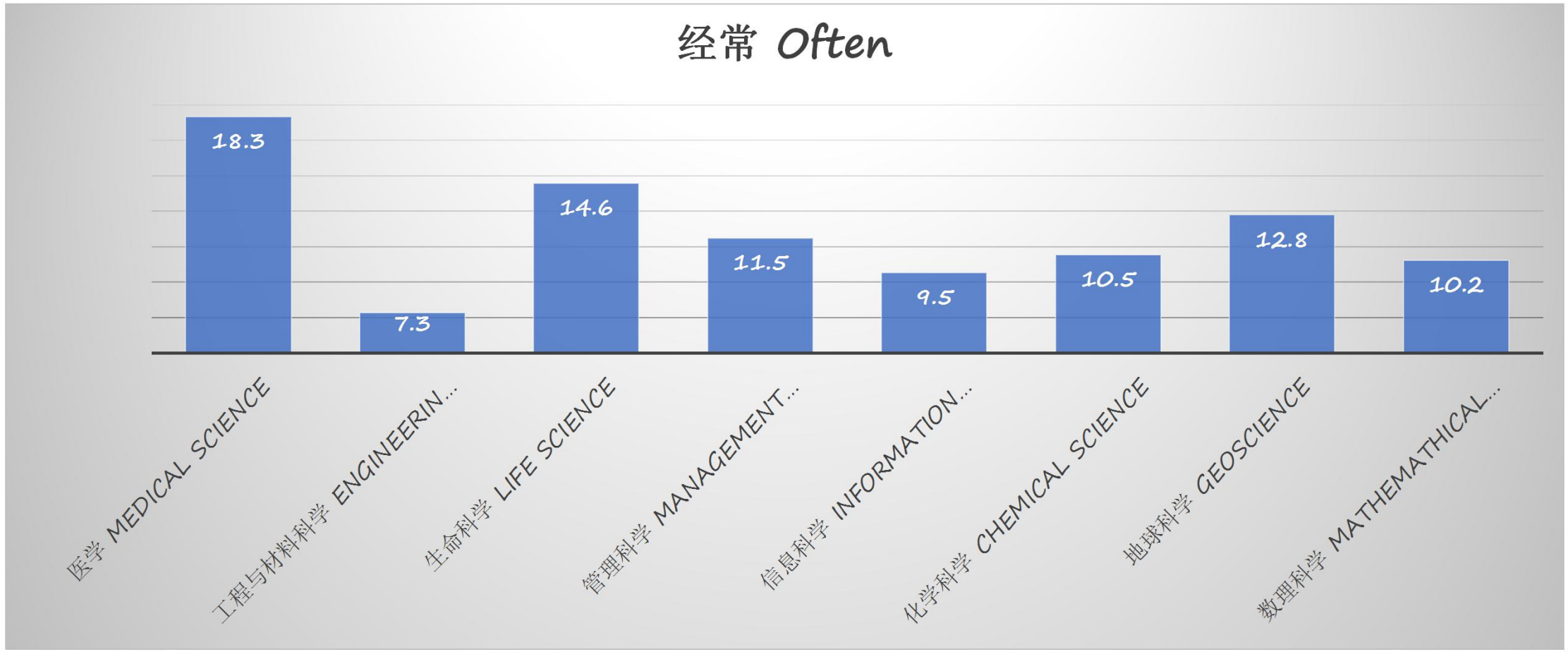
		没有	有时	经常
是否参加活动	科普	30.4	56.7	12.9
	政府咨询活动	61.4	33.7	4.9
	互联网上发表观点	58.4	37.2	4.3

	NO	**Occasionally**	**Often**
Science popularization	30.4%	56.7%	12.9%
Governmental consultation	61.4%	33.7%	4.9%
To express opinion on hot issues regarding S&T on the internet	58.4%	37.2%	4.3%

科学普及

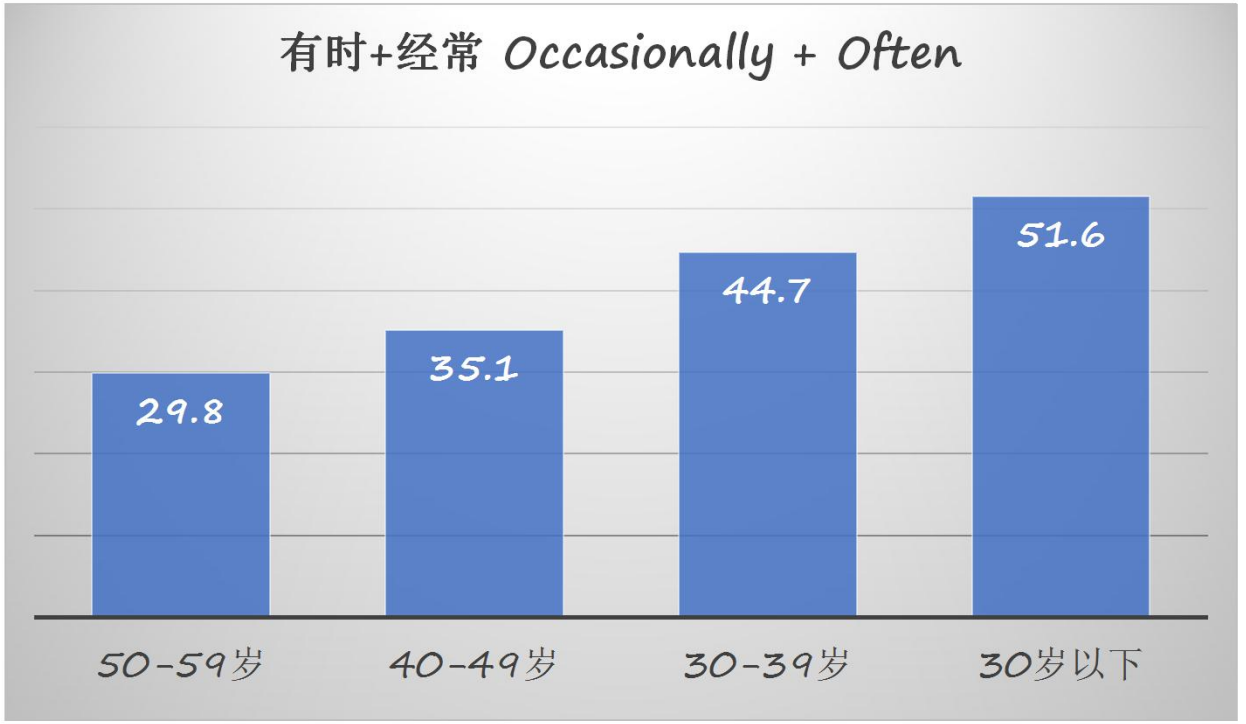
science popularization (69.6%)

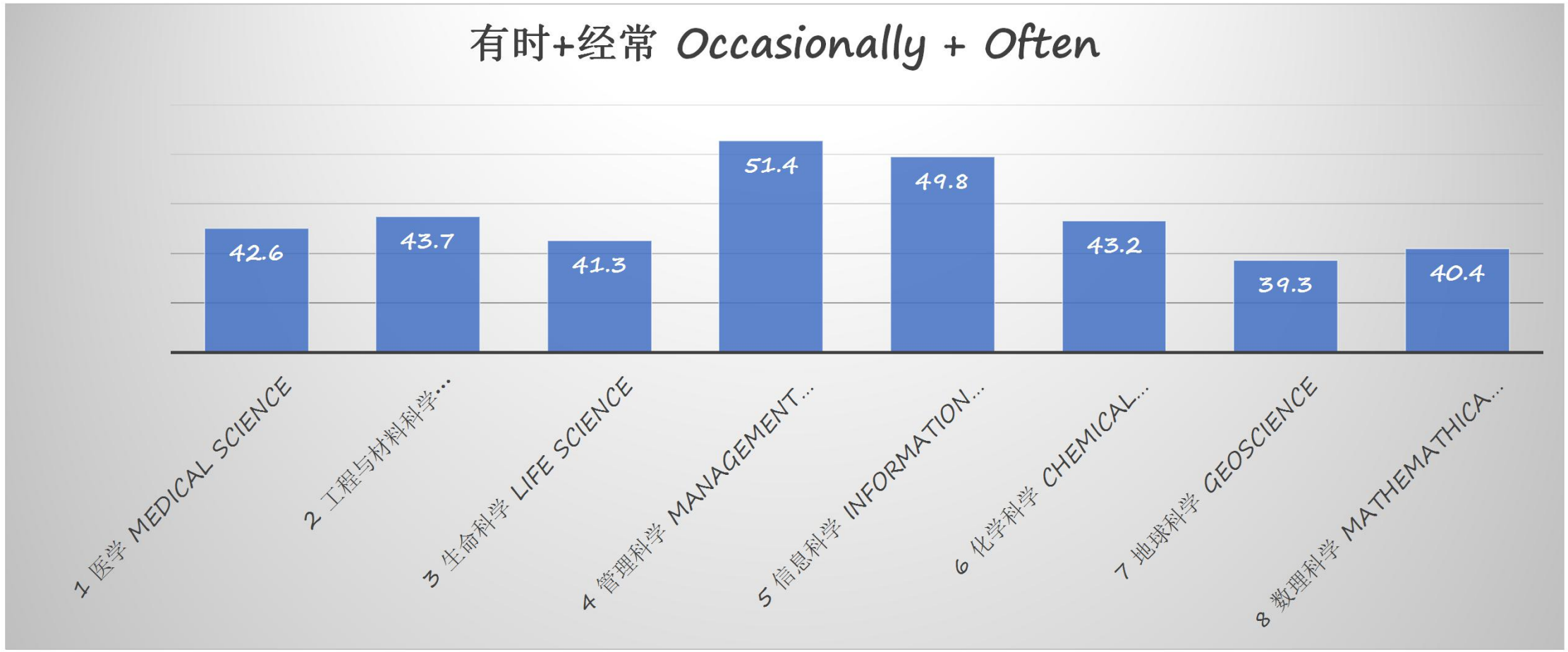



经常 Often
18.3
7.3
14.6
11.5
9.5
10.5
12.8
10.2
医学 MEDICAL SCIENCE
工程与材料科学 ENGINEERIN...
生命科学 LIFE SCIENCE
管理科学 MANAGEMENT...
信息科学 INFORMATION...
化学科学 CHEMICAL SCIENCE
地球科学 GEOSCIENCE
数理科学 MATHEMATHICAL...

参与科技热点问题讨论

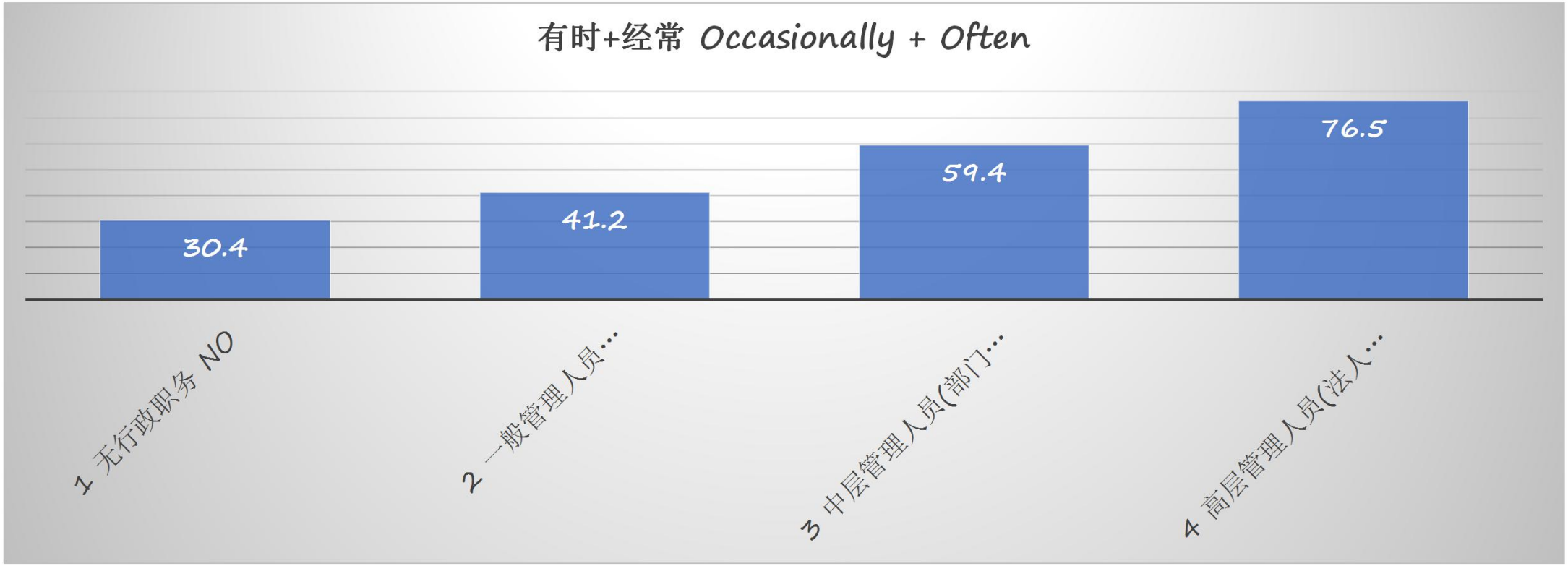
Participating public debate regarding S&T (41.5%)

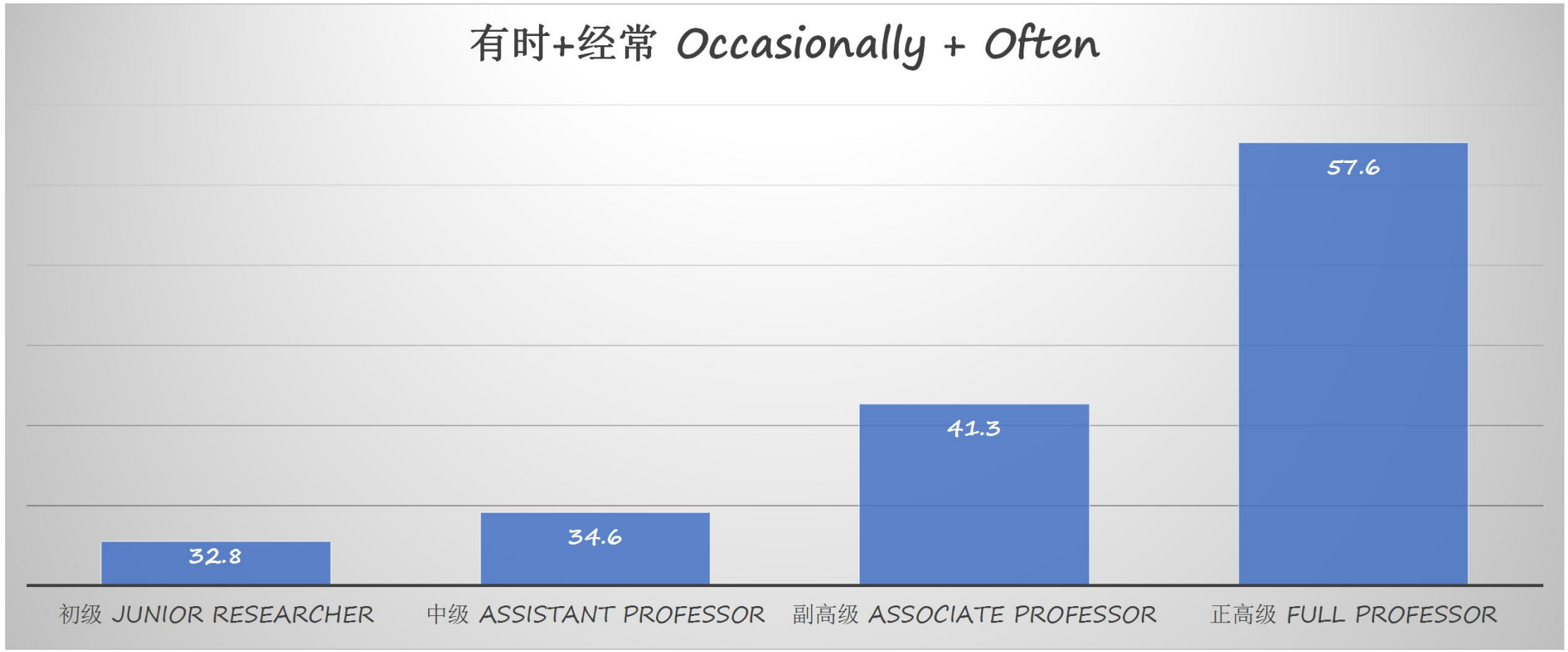


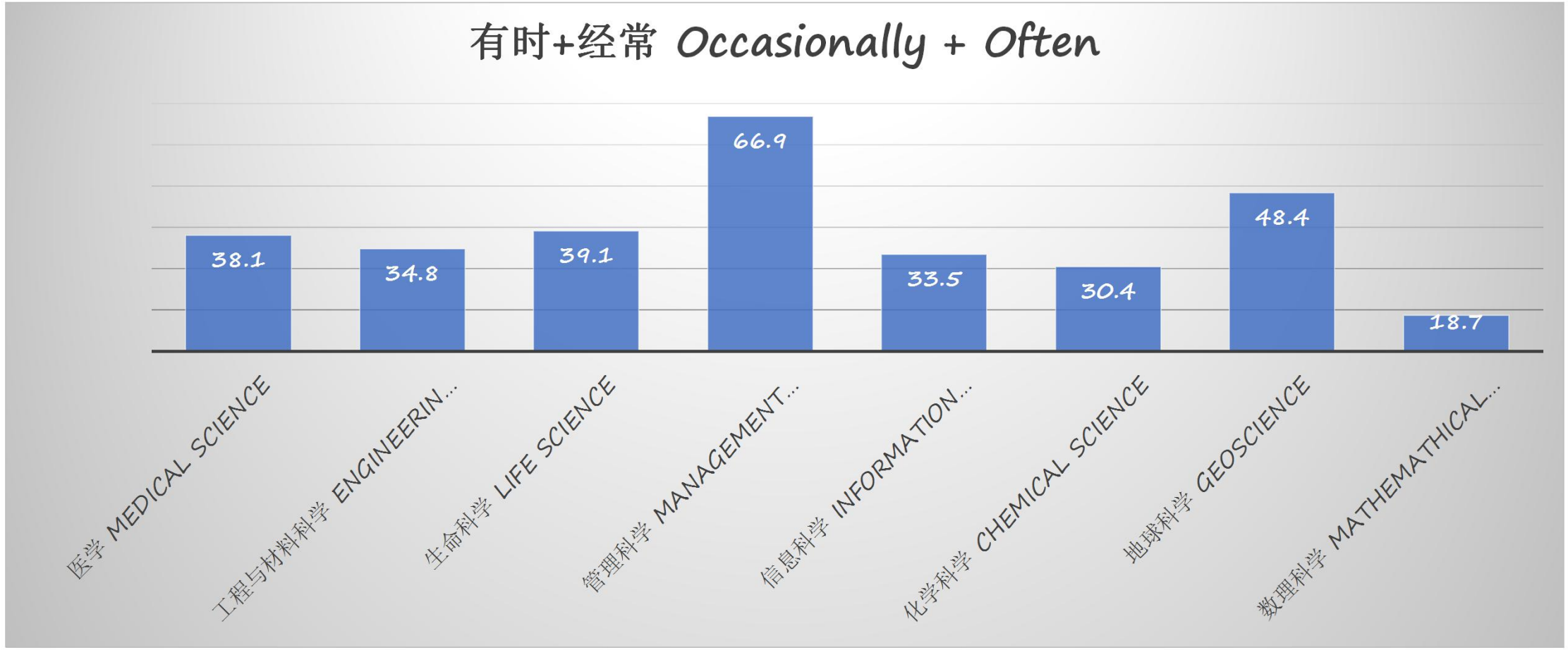

有时+经常 Occasionally + Often
42.6
43.7
41.3
51.4
49.8
43.2
39.3
40.4
1 医学 MEDICAL SCIENCE
2 工程与材料科学...
3 生命科学 LIFE SCIENCE
4 管理科学 MANAGEMENT...
5 信息科学 INFORMATION...
6 化学科学 CHEMICAL...
7 地球科学 GEOSCIENCE
8 数理科学 MATHEMATHICA...

参与决策咨询

S&T Policy consultation (38.3%)




有时+经常 Occasionally + Often
32.8
34.6
41.3
57.6
初级 JUNIOR RESEARCHER
中级 ASSISTANT PROFESSOR
副高级 ASSOCIATE PROFESSOR
正高级 FULL PROFESSOR


有时+经常 Occasionally + Often
38.1
34.8
39.1
66.9
33.5
30.4
48.4
18.7
医学 MEDICAL SCIENCE
工程与材料科学 ENGINEERIN...
生命科学 LIFE SCIENCE
管理科学 MANAGEMENT...
信息科学 INFORMATION...
化学科学 CHEMICAL SCIENCE
地球科学 GEOSCIENCE
数理科学 MATHEMATHICAL...

分析和讨论

Analysis and discussion

科技工作者的参与态度和参与行为之间的关联
Correlation between attitude and behavior

去年，（有时+经常）做过（Occasionally + Often）in the past year		科普science popularization	参加政府咨询活动governmental consultation	在互联网上表达对科技热点问题的看法To express opinion on hot issues regarding S&T on the internet
科学家应该发挥专业优势，积极参与社会热点事件的讨论Scientists should make use of their professional advantages and actively participated in debates on issues of public concern	同意（完全同意+基本统一）Agree (totally + basically)	70.7%	38.9%	42.8%
	不同意（不太同意+完全不同意）Disagree (not + not at all)	68.0%	39.7%	38.6%

科技工作者的参与态度和参与行为之间的关联
Correlation between attitude and behavior

	E1_3 是否同意下列关于科学技术的说法：科学家应该发挥专业优势，积极参与社会热点事件的讨论	E5_1 去年有没有做过下列活动： 科普
Pearson 相关性	1	-.080**
显著性（双侧）		.000
N	11533	11473
	E1_3 是否同意下列关于科学技术的说法：科学家应该发挥专业优势，积极参与社会热点事件的讨论	E5_2 去年有没有做过下列活动： 参加政府咨询活动
Pearson 相关性	1	-.040**
显著性（双侧）		.000
N	11533	11468
	E1_3 是否同意下列关于科学技术的说法：科学家应该发挥专业优势，积极参与社会热点事件的讨论	E5_3 去年有没有做过下列活动：在互联网上表达对科技热点问题的看法
Pearson 相关性	1	-.069**
显著性（双侧）		.000
N	11533	11469

E1_3：1 完全同意；2 基本同意；3 不太同意；4 完全不同意

E5：1 没有；2 有时；3 经常

社会心态浮躁与参与态度和行为之间的关联
Correlation between perception of social mood and attitude/behavior

		科学家应该发挥专业优势，积极参与社会热点事件的讨论（完全同意+基本同意）科学家应该发挥专业优势，积极参与社会热点事件的讨论Scientists should make use of their professional advantages and actively participated in debates on issues of public concern (totally + basically) agree	在互联网上表达对科技热点问题的看法（有时+经常）To express opinion on hot issues regarding S&T on the internet（Occasionally + Often）
当前我国公众科学素质不高，社会心态浮躁，这使得科学家参加公共问题的讨论有很大风险At present, the scientific literacy of the public in China is low, and the social mood is blundering, which brings big risks for scientists to participate the discussion of public issues	同意（完全同意+基本统一）Agree (totally + basically)	87.0%	44.1%
	不同意（不太同意+完全不同意）Disagree (not + not at all)	81.0%	41.4%
非控制		83%	41.5%

致谢
Acknowledgement

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谢谢！

Thanks!