

Questionnaires (translated)

Confidential

Fundamental Statistics

2023 Survey of Research and Development

Questionnaire A-I (for business enterprises)

As of June 1st, 2023

Statistics Bureau
Ministry of Internal Affairs and Communications

This survey is conducted under the auspices of the Statistics Act. This Act ensures confidentiality; you are therefore requested to furnish valid information.

Location and name of the business enterprise

[*] Enter the Corporate Number (13 digits)

--

Person representing the business enterprise	(Title) (Name)
Person responding to the questionnaire	(Section name) (Name)
Telephone	

- Please refer to the instruction when you fill in the questionnaire.
- Unit of this survey is business enterprise. Please report information of business enterprise, even if your business enterprise adopts consolidated accounts.
- Even if your business enterprise is not conducting R&D activities at all, you are kindly asked to answer the questions on pages 1 through 3 (i.e., from question [1] (present status of the business enterprise) through question [3] (yes/no of R&D activities)). If your company is conducting R&D activities (including the case of paying R&D expenses to outside), also answer question [4] (persons employed in R&D) on Page 3, and the rest of the questions through Page 8.
- Give information as of June 1st, 2023, about capital, as of March 31st, 2023, about employees, and for the year ending on the latest settling day prior to March 31st, 2023, about financial status.

[1] Fill in the present status of the business enterprise.

Capital (as of June 1st)
001 (million yen)

Description of business (2022 fiscal year)	Products or type of business (in decreasing order of sales)		
002	003	004	005

Total sales (2022 fiscal year)	Total number of persons employed (as of March 31st)
006 (million yen)	007 (persons)

[2] Yes or no of technology balance of payments (Fill in the circle for 'Yes' or 'No').

- "Technology balance of payments" means exchange of technology with abroad in relation to or in the form of patents, know-how and technical guidance.

008	Yes <input type="radio"/>	No <input type="radio"/>	If 'Yes', answer the following question.
-----	------------------------------	-----------------------------	--



Technology exports	Country or territory of destination or origin	Amount (10 thousand yen)	Affiliated companies
	009 Total	010	011

Technology imports	Country or territory of destination or origin	Amount (10 thousand yen)	Affiliated companies
	012 Total	013	014

[3] Yes/no of R&D activities

Research and Development

- In the case of companies: R&D refers to systematic studies and creative efforts in science and technology which are undertaken for the acquisition of new knowledge of materials, functions, natural phenomena, etc., and for the new application of the storage of knowledge.
- In the case of R&D activities at companies, development and technical improvements on the product or production process are also included in the category of R&D.

015
(Fill in the circle for the appropriate choice below)

1. Intramural R&D → to [4]~[12]
(Even if your company is not conducting R&D, if you have employees who are conducting R&D outside, include such employees. In this case, answer the questions from [7] through [12] on pages 5 and the rest.)

2. Extramural R&D only → to [11], [12]

3. Not conducting R&D → End of the questionnaire



- Fill in research laboratories, research divisions, sections, etc., of the company.

[4] Fill in number of persons employed in R&D (as of March 31st)

- Include transferees, etc., from outside and who are engaged in R&D at the company.

	Head-counts*5 (persons)				Ratio of persons engaged in R&D*5 (persons)	
		Female	Dispatched workers under the Worker Dispatching Act			
			Female	Female		
Total <small>(017, 020~022)(024, 027~029) (031, 034~036) (038, 041~043)</small>	016	023	030	037	—	
Researchers*1	017	024	031	038	—	
	Persons solely engaged in R&D	018	025	032	039	—
	Persons partly engaged in R&D	019	026	033	040	044
Assistant research workers*2	020	027	034	041	045	
Technicians*3	021	028	035	042	046	
Clerical and other supporting personnel*4	022	029	036	043	047	
Researchers who hold a Ph.D.	048	049				

*1. **Researchers:** Persons who hold a university degree (or persons who have equivalent or greater knowledge of specialty), who are engaged in research activities of their own chosen subject.

"Persons solely engaged in R&D" mean those engaged in R&D activities all the time.

"Persons partly engaged in R&D" mean those engaged in R&D activities, but not all the time.

*2. **Assistant research workers:** Persons who assist researchers and who are engaged in research activities under their direction.

*3. **Technicians:** Persons, other than researchers and assistant research workers, who are engaged in technical services related to research activities under the guidance and supervision of researchers and assistant research workers.

*4. **Clerical and other supporting personnel:** Persons other than the above but who are engaged in clerical work, accounting, etc., related to the research activities as defined in this Questionnaire. As for the persons engaged in the administration of such activities, those having research experiences are categorized as "researchers" (as defined in *1), and those not having research experiences, as "clerical and other supporting personnel" (i.e., this category).

*5. For "Head-counts", enter the number of persons engaged in R&D. For "Ratio of persons engaged in R&D", enter the figure obtained by multiplying "Head-counts" by the hourly ratio of those who engaged in R&D. Please enter the number of dispatched workers based on the Worker Dispatching Act among those engaged in research-related work.

- [5] Enter the number of researchers who joined or left the business enterprise
- Cover the period from April 1 of last year to March 31 of this year.
 - "The number of researchers who joined the business enterprise" means "researchers" as defined in question [4] (persons employed in R&D) who joined from outside the business enterprise.
 - Enter the number of newly hired researchers who were assigned to a department which conducts research on natural sciences and engineering, according to the contents of their research.
 - Enter the number of researchers who joined from outside your company by their previous job according to the table of "classification of organizations" provided in the instruction
 - "The number of researchers who left the business enterprise" means "researchers" as defined in question [4] and who left the business enterprise.
 - Include transferees.

- [6] Fill in the number of researchers by specialty (as of March 31st)
- As for the breakdown by field of specialty, write the number of "researchers" as defined in question [4] (persons employed in R&D, boxes 017 and 024) by field of specialty.

	Total (persons)	Female (persons)
Newly hired	050	068
Natural sciences and engineering	051	069
Physical science	052	070
Engineering and technology	053	071
Agricultural science	054	072
Medical sciences	055	073
Medical science	056	074
Dentistry	057	075
Pharmacy	058	076
Joined from:	059	077
Other companies	060	—
Affiliated companies	061	—
Non-profit institutions	062	—
Public organizations	063	—
Universities and colleges	064	—
Others	065	—
Number of researchers who left the business enterprise	066	078
Affiliated companies	067	—
Newly hired researchers who hold a Ph.D.	079	081
Researchers who joined from outside and hold a Ph.D.	080	082

		Total (084~104) (106~126)	Total (persons)	Female (persons)	
			083	105	
Physical science	Mathematics	084	084	106	
	Information science	085	085	107	
	physics	086	086	108	
	Chemistry	087	087	109	
	Biology	088	088	110	
	Geology	089	089	111	
	Others	090	090	112	
	Engineering and technology	Machinery, ship engineering and aeronautics	091	091	113
		Electricity and communications	092	092	114
		Civil engineering and architecture	093	093	115
Material		094	094	116	
Textile technology		095	095	117	
Others		096	096	118	
Agricultural science	Agricultural and forestry	097	097	119	
	Veterinary science and animal husbandry	098	098	120	
	Fishery	099	099	121	
	Others	100	100	122	
Medical sciences	Medical science and dentistry	101	101	123	
	Pharmacy	102	102	124	
	Others	103	103	125	
Social sciences and humanities		104	126		

As for research expenses, even if an expense is not booked as research expense, enter such expenses separately from the booked research expenses.
 Incomes and expenditures in kind: include the relevant expenses as R&D expenses in market price.

[7] Enter the intramural expenditure on R&D.

- Enter expenditures on R&D used in the company during the one year period, including those financed by outside funds. If it is difficult to calculate the R&D expenses by dividing them into those spent by the R&D and other divisions, enter them separately.

Total	(10 thousand yen)
(128~130, 135,137,138)	127
Labour costs*1	128
Materials*2	129
Expenditure on tangible fixed assets*3	130
Land	131
Buildings, etc.	132
Machinery, utensils, equipment, etc.	133
Other tangible fixed assets	134
Expenditure on intangible fixed assets*4	135
Software	136
Lease fees*5	137
Other expenses*6	138
Cost related to dispatched workers	139
Depreciation of tangible fixed assets*7	140

*1. **Labour costs:** The following expenses that became necessary for R&D purposes and paid to persons engaged in R&D during the one year period: the total amount of salaries, etc. (basic salaries, allowances, bonuses, etc., paid regularly or as extras), retirement allowances, social insurance premiums paid on behalf of the insured, and others. The "salaries, etc." are before subtracting the income tax, local taxes, insurance premiums, etc. That is, it is not "take-home pay".

If employees are working extramurally, also include their salaries, etc.

*2. **Materials:** Expenses on main raw materials, processed materials, auxiliary materials, parts and so on needed for R&D.

*3. **Expenditure on tangible fixed assets:** "Tangible fixed assets" here mean all such assets required for R&D.

- **Buildings, etc.:** Buildings, etc., including ancillary structures, construction, ships, aircraft

- **Machinery, utensils, equipment, etc.:** Machinery, equipments and fixtures which are durable for one year or more and valued at 100,000 yen or more.

- **Other tangible fixed assets:** Suspense account of construction, animals and plants which are treated as fixed assets.

*4 **Expenditure on intangible fixed assets:** "Intangible fixed assets" here mean all such assets required for R&D.

- **Software:** Within expenditure on intangible fixed assets, the amount paid for software which is used for one year or more and purchased at 100,000 yen or more.

*5. **Lease fees:** The amount paid based on lease contracts for R&D purposes, but excluding land and buildings rent, short-term leases, charters, etc.

*6. **Other expenses:** Expenses for books and other publications, electricity, fuel and water, expendables and supplies, etc.

- **Cost related to dispatched workers :** Expenses related to persons engaged in research-related work who are dispatched by staffing agencies under the Worker Dispatching Act.

*7. **Depreciation of tangible fixed assets:** Depreciation of tangible fixed assets used for R&D purposes, such as buildings, structures, ships, machinery and vehicles.

[8] Enter the total R&D expenditures by type of R&D in the fields of physical sciences, engineering and technology, agricultural sciences, and medical sciences.

- Of the "Total" in question [7] (intramural expenditure on R&D), categorize and enter the R&D expenditures related to the fields of natural sciences and engineering namely physical sciences, engineering and technology, agricultural sciences, and medical sciences. The expenditures should be categorized by research theme. If this is not possible, either use the categories provided in the table below, or categorize by researcher or research unit.

Total (142~144)	(10 thousand yen)
Basic research*1	141
Applied research*2	142
Development*3	143
	144

*1. **Basic research:** This refers to theoretical or experimental research undertaken for the formulation of hypothesis and theories, or for the acquisition of new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view.

*2. **Applied research:** This refers to research undertaken in order to determine possible uses with a specific, practical objective or to explore a new form of application different from the existing one.

*3. **Development:** This refers to research directed to producing new products, services, systems, equipment, materials and processes, etc. or to improving the existing ones, drawing on knowledge gained from basic and applied research and/or practical experience and producing additional knowledge.

[9] Enter the expenditure (disbursement) on R&D by product and service field.

- Enter by breaking down the "Total" in question [7] (intramural expenditure on R&D) by product and service fields.
If the expenditure cannot be categorized into a specific product or service field, enter the amounts by obtaining ratios based on the respective number of researchers.

Total (146~179)	(10 thousand yen)		
	145		
Agricultural, forestry and fisheries products	146	Fabricated metal products	163
Mining	147	General machinery	164
Building construction and civil engineering	148	Household electric appliances	165
Food products	149	Other electric equipment (excluding 165)	166
Textile mill products	150	Information and communication electronics equipment and electronic parts	167
Pulp and paper products	151	Motor vehicles	168
Printing and publishing	152	Aircraft	169
Chemical fertilizers, and inorganic and organic chemical products	153	Railways and rolling stock	170
Chemical fibers	154	Other transportation equipment	171
Oil and paints	155	Precision instruments	172
Drugs and medicines	156	Other manufacturing products	173
Other chemical products	157	Electricity and gas	174
Petroleum and coal	158	Software and information technology	175
Rubber products	159	Others (Write down the product or service)	176
Ceramic and stone & clay products	160		177
Iron and steel	161		178
Non-ferrous metals	162		179

[10] Enter the expenditure on R&D by selected objective.

- If your company is conducting any R&D in the following fields, enter the respective disbursements among the "Total" in question [7] (intramural expenditure on R&D). If there is overlap among the eight fields listed below, please enter the research expenses in each field and fill in the "overlap with the other seven fields" column.
In the case previously stated, any overlap through these fields is acceptable.

Fields	Expenditures on R&D	Overlap	Fields	Expenditures on R&D	Overlap
Field of life sciences	180	188 ○	Field of nanotechnology	184	192 ○
Field of information technology	181	189 ○	Field of energy	185	193 ○
Field of environmental science and technology	182	190 ○	Field of space exploration	186	194 ○
Field of materials	183	191 ○	Field of oceanology	187	195 ○

- If your company is conducting any R&D in the following fields, enter the respective disbursements among the "Total" in question [7] (intramural expenditure on R&D)
 If there is overlap between the three fields listed below, please enter the research expenses in each field and fill in the "overlap with the other two fields" column.
 ※These are positioned within the government as fundamental technologies that should be strategically addressed.

Fields	Expenditures on R&D	Overlap	Fields	Expenditures on R&D	Overlap
Field of artificial intelligence	196	199 ○	Field of quantum technology	198	201 ○
Field of biotechnology	197	200 ○			

[Expenditures on R&D by selected objective]

*1.**Field of life sciences:** This refers to research on improvement and development of living by clarifying life related phenomena and various functions of organisms, and by applying the results to a variety of disciplines including medical, agricultural, industrial, environmental protection, energy development and so on.

*2.**Field of information technology (IT):** In addition to R&D on hardware and software, that for the upgrading of networks and the development of high-speed computing technologies that enable high-speed processing, analysis and storage of massive quantities of information.

*3.**Field of environmental science and technology:** This refers to research concerning the infection of polluted natural environments, life cycle and property, protection of natural environments from pollution and destruction, achievement of non-polluted environments, etc.

*4.**Field of materials:** This means researches on 1) investigation and control of the structure, etc., of substances on the level of atoms and molecules which become the bases of IT, medical sciences, etc., and 2) development of the materials for the high value added energy and environment-related substances that can meet the needs to save energy and natural resources and recycle natural and other resources.

*5.**Field of nanotechnology:** R&D for the achievement of functions utilizing nanosize material/substance characteristics.

*6.**Field of energy:** This refers to research relating to exploration, production, conversion, transportation, consumption, safety etc., in relation to the development and reasonable use of energy resources.

*7.**Field of space exploration:** This includes research on rockets and artificial satellites and also research on tracing or communication stations.

*8.**Field of oceanology:** This means oceanic research and technical development relating to culture of bio-resources, development of mineral resources, research on ocean space, utilization of seawater, etc.

*9. **Field of artificial intelligence:** This refers to a wide range of research related to AI science and technology, including fundamental research necessary to construct artificial intelligence, research and development of AI systemization technology and related device technology necessary for social implementation, research and development of AI implementation technology in various industries and economic activity fields, and AI-related ethics and legal systems.

*10. **Field of biotechnology:** This refers to research on the application of science and technology to living organisms and parts, products and models thereof in order to modify biological or non-biological materials in order to produce knowledge, goods and services.

*11. **Field of quantum technology:** This refers to a wide range of research related to quantum technology, including fundamental research on quantum science and its applied technology, research and development for practical application and commercialization, and research and development of peripheral technologies to support this research.

NOTE: If you have selected item 2 (extramural R&D only) in question [3] (yes/no of R&D activities), answer the following questions [11] and [12].

[11] Enter the R&D funds received from outside.

- Enter the total of all funds on R&D received from others, whatever the type of finance such as trust money, subsidies, allocations, etc. Record intramural expenditures, that is, all funds used for the performance of R&D within your business enterprise in the right columns.

Total (203~209,211~213,215~218) (220~226,228~230,232~235)		R&D funds received (Total)	
		(10 thousand yen)	Intramural expenditure of R&D funds received
		202	219
Public organizations	From government	203	220
	From local government	204	221
	From national and public universities and colleges	205	222
	From national and public research institutions and independent administrative institutions	206	223
	From public corporations and enterprises, which are based on self-supporting accounting systems	207	224
	From others	208	225
From other companies		209	226
	Affiliated companies	210	227
From private universities and colleges		211	228
From non-profit institutions		212	229
The rest of the world	From other companies	213	230
	Affiliated companies	214	231
	From universities and colleges	215	232
	From government agency	216	233
	From non-profit organization	217	234
	From others	218	235

[12] Enter the R&D funds paid outside.

- Enter all funds on R&D paid outside for the performance of R&D, whatever the type of payment (trust, dues, etc.). Record those paid from own funds in the right columns.

Total (237~241,243~245,247~250) (252~256,258~260,262~265)		R&D funds received (Total) (10 thousand yen)	
		Extramural expenditure of R&D funds (self-financed)	
		236	251
Public organizations	To national and public universities and colleges	237	252
	To national and public research institutions and independent administrative institutions	238	253
	To public corporations and enterprises, which are based on self-supporting accounting systems	239	254
	To others	240	255
To other companies		241	256
	Affiliated companies	242	257
To private universities and colleges		243	258
To non-profit institutions		244	259
The rest of the world	To other companies	245	260
		Affiliated companies	246
	To universities and colleges	247	262
	To government agency	248	263
	To non-profit organization	249	264
	To others	250	265

Remarks column	(In addition to changing the location and name of the business enterprise, description of business, etc., enter any special notes relevant to what you have filled in.)
----------------	---