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제 115026 호

KOREA DESIGN STATISTICAL DATA

BASED ON 2020 DATA

Ministry of Trade, Industry and Energy

KOREA INSTITUTE OF DESIGN PROMOTION

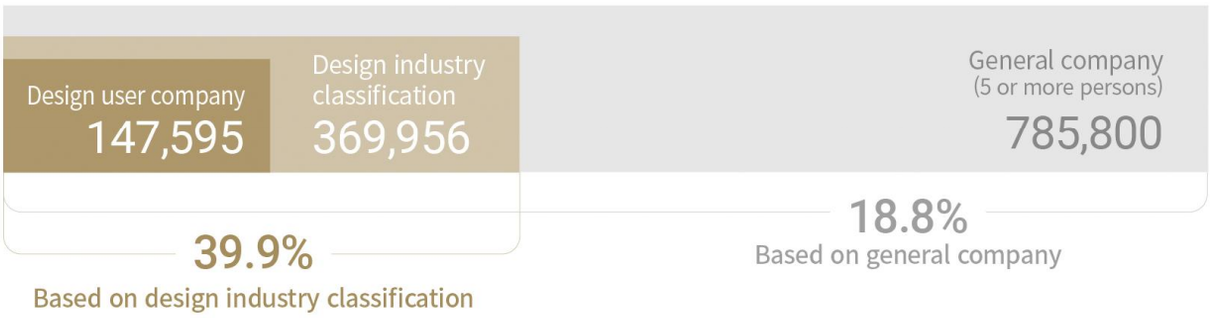
Notes for readers

- This report contains the results of the “2021 Korea Design Statistical Data”.
- The baseline for this survey is January 1, 2020 to December 31, 2020.
- Sampling frame is a sample survey of the companies that fall under the design industry classification of the 2019 National Survey.
  - Companies Utilizing Design: Companies applicable to the design industry that utilize design (Excluding companies specialized in design, public sector, and education sector)
  - Specialized design companies: Companies that fall under the professional design business from the standard industry categories
- Excluding companies classified as unincorporated organizations and national/local governments from the 2021 Survey.
  * Unincorporated organizations refer to groups or gatherings without legal personality, ie., alumni associations, donation groups, cultural organizations, labor organizations, and family associations.
- The primary subjects of this survey include companies utilizing design, specialized design companies central ministries and local governments.
  Companies utilizing design refer to a business with a **design department, has hired a designer,** or has experience in **outsourcing design services to specialized design companies and freelancers within the last two years** as of December 2020.
- The industry size presented in this survey is a result of parameter estimation.
- All figures in the statistics table are rounded up, so the sum of the details and the sum may not match.
- The sum of percentages of multiple response items in the statistics table included in the report exceeds 100.0%.
- The sign used in the statistics table is as follows: [0], [0.0]: less than unit
- If the contents of this report are to be reprinted or reversed, it should be written as "reprinted or reversed" on page ○ 2021 Korea Design Statistical Data.

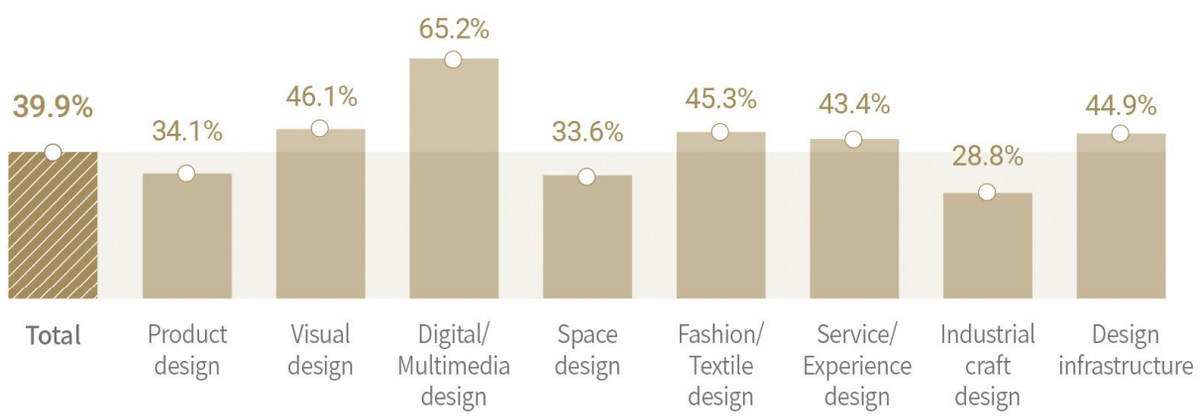
1. Design Utilization Rate

Design Utilization Rate

2019 37.1% ↗ 2020 **39.9%**

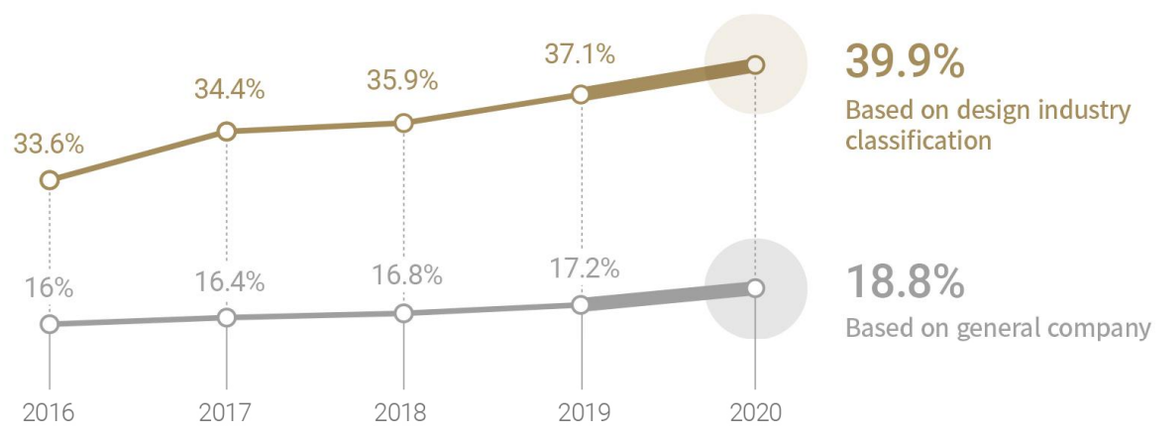


Design Utilization Rate in the Design Industry Classification



Design Utilization Rate

(Unit: %)



2. Size and Manpower of Design Industry

2020
19.4 trillion KRW
('19) 18.3

Size of Design Industry

(Unit: billion KRW)

Companies utilizing design
13,085.7 67.5%

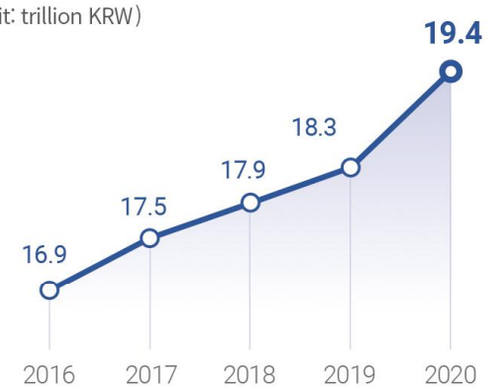
Specialized design companies
4,397.8 22.6%

Public Sector
250.1 1.3%

Freelancers
1,441.4 7.4%

Higher education
257.5 1.3%

Size of Design Industry
(Unit: trillion KRW)



2020
35.1 million people
('19) 335,903

Design Manpower

(Unit: person)

Companies utilizing design
268,176 76.4%

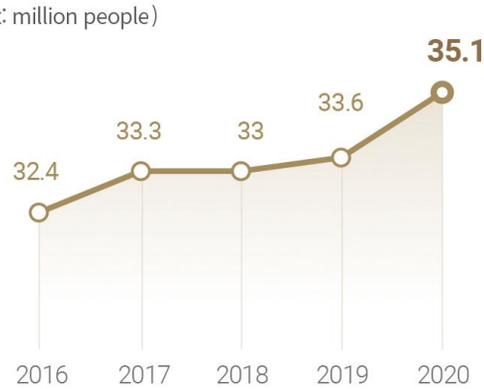
Specialized design companies
17,217 4.9%

Public Sector
588 0.2%

Freelancers
62,516 17.8%

Higher education
2,337 0.7%

Design Manpower
(Unit: million people)



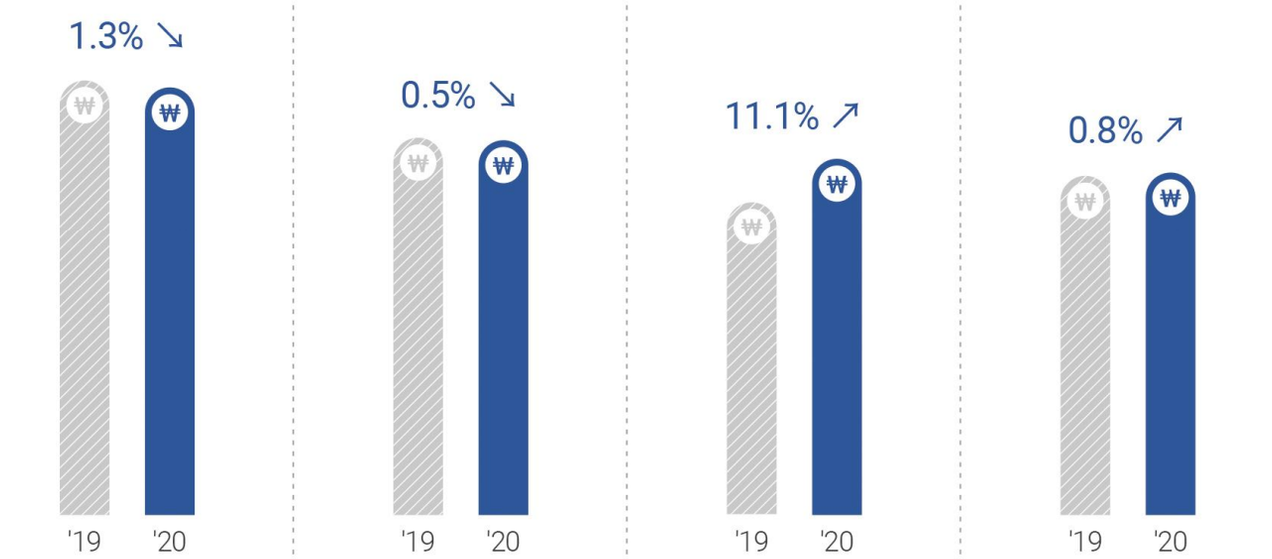
2-1. Companies Utilizing Design(By design type)

(Unit: billion KRW)

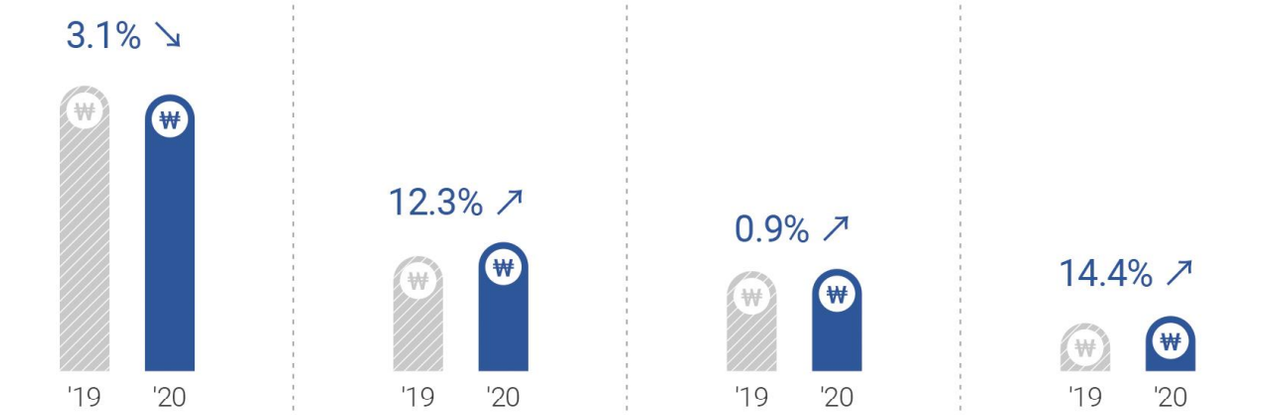
Size of Design Industry (By design type)

2019
12,808.3
(Avg. 90.22 million KRW)

2020
13,085.7
(Avg. 88.66 million KRW)



Product design	Design infrastructure	Space design	Service/Experience design
2,790.6	2,499.7	2,397.2	2,321.7



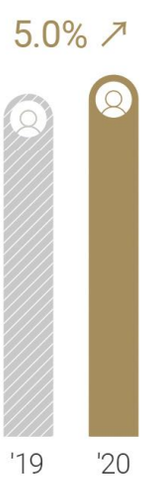
Visual design	Digital/Multimedia design	Fashion/Textile design	Industrial craft design
1,515	702.6	559	299.8

(Unit : person)

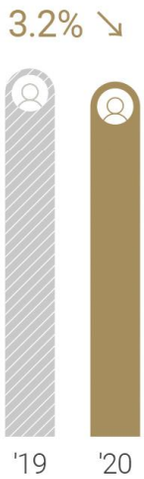
Design Manpower (By design type)

2019
266,075
(Avg. 1.87 person)

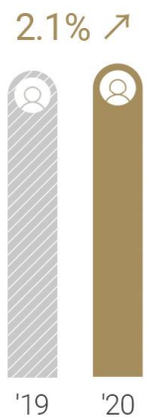
2020
268,176
(Avg. 1.82 person)



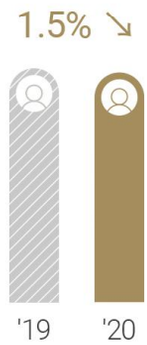
Space design
59,164



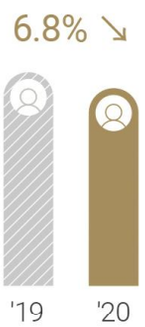
Design infrastructure
58,153



Service/Experience design
52,148



Product design
39,698



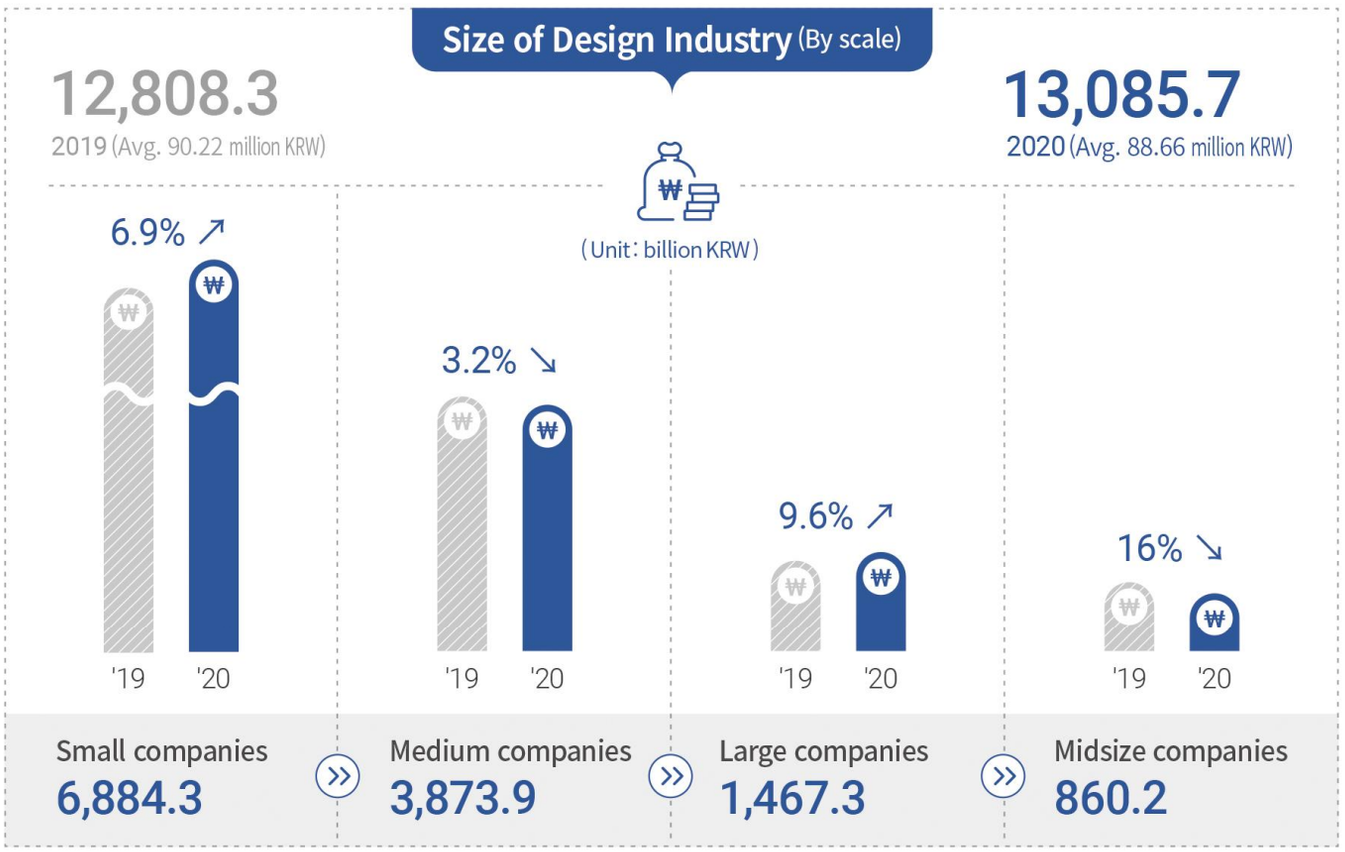
Visual design
22,296

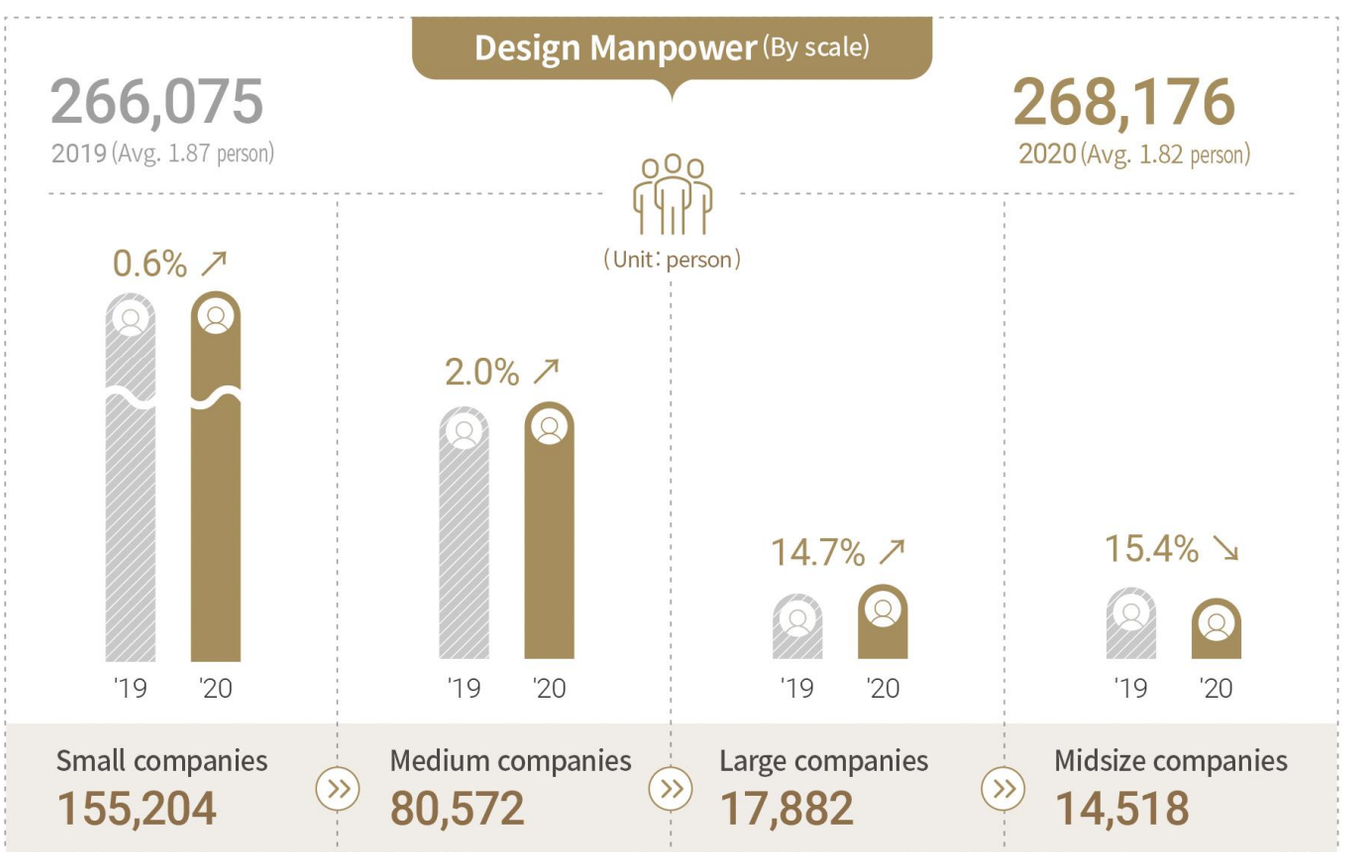
Digital/Multimedia design
16,183

Fashion/Textile design
12,786

Industrial craft design
7,748

2-1. Companies Utilizing Design(By scale)





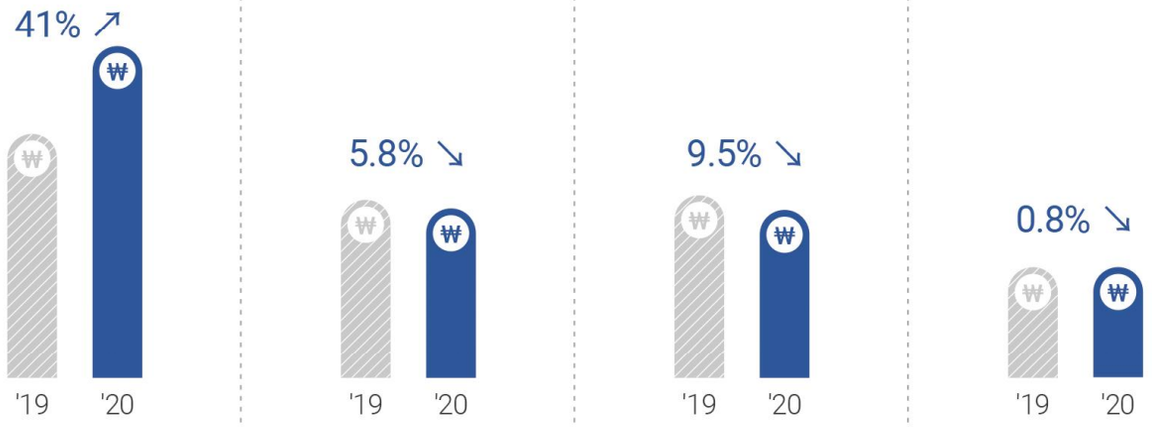
2-2. Specialized Design Companies

Size of Design Industry

3,962.8
2019 (Avg. 632.6 million KRW)

4,389.7
2020 (Avg. 607.2 million KRW)

(Unit: billion KRW)



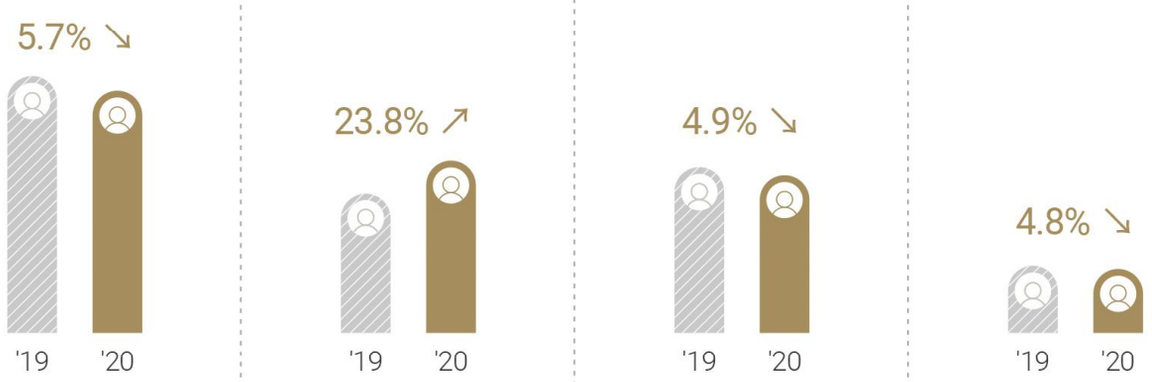
Interior design	Visual design	Product design	Other types of fashion/Textile design
2,009.2	928.3	919	533.2

Design Manpower

17,026
2019 (Avg. 2.72 person)

17,217
2020 (Avg. 2.38 person)

(Unit: person)



Visual design	Interior design	Product design	Other types of fashion/Textile design
6,555	4,663	4,268	1,731

2-3. Public Sector

(Unit: billion KRW)

2020
250.1
('19) 230.9

(Unit: person)

2020
588
('19) 621

Central Governments

18 Ministry

Ministry of Strategy and Finance; Ministry of Education; Ministry of Foreign Affairs; Ministry of Unification; Ministry of Science and ICT; Ministry of Justice; Ministry of the Interior and Safety; Ministry of Culture, Sports, and Tourism; Ministry of Agriculture, Food and Rural Affairs; Ministry of Trade, Industry and Energy; Ministry of Environment; Ministry of Gender Equality and Family; Ministry of Land, Infrastructure and Transport; Ministry of Oceans and Fisheries; Ministry of National Defense; Ministry of Health and Welfare; Ministry of Employment and Labor; Ministry of SMEs and Startups

5 Agency

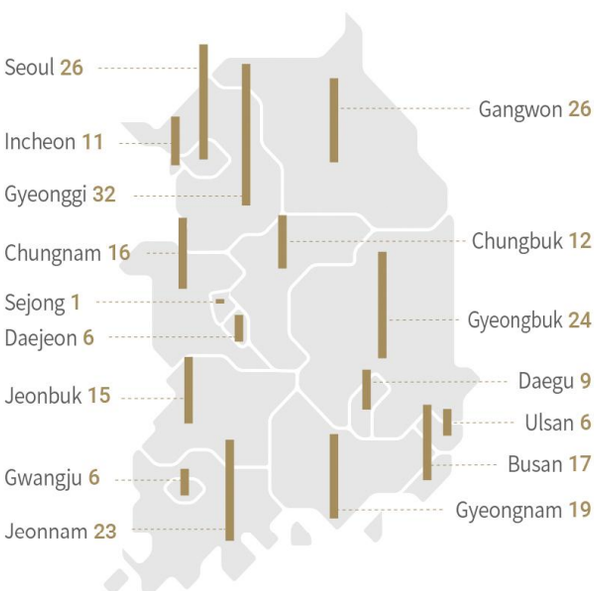
Ministry of Strategy and Finance; Ministry of Education; Ministry Ministry of Patriots and Veterans Affairs; Ministry of Government Legislation; Ministry of Personnel Management; Ministry of Food and Drug Safety; Presidential Security Service Republic Korea

18 Office

National Tax Service; Korea Customs Service; Public Procurement Service; Statistics Korea; Military Manpower Administration; National Fire Agency; Defense Acquisition Program Administraion; the National Police Agency; Rural Development Administration; Korea Forest Service; Korea Meteorological Administration; Korea Coast Guard; National Agency for Administrative City Construction; Prosecution Service; Cultural Heritage Administration; Korean Intellectual Property Office; Sae-mangeum Development and Investment Agency; Korea Disease Control and Prevention Agency

31 completed | 41

Local Governments



238 completed | 243

Total budget in design department of central government
2020
81.1
('19) 66.6

Total budget in design department of local government
2020
169
('19) 1,643

Total number of employees in design department of central government
2020
25
('19) 46

Total number of employees in design department of local government
2020
563
('19) 575

2-4. Freelancer

Size of Freelance Designer Industry

Number of freelance designers

62,516

Average monthly wage for freelance designers

1.92 million KRW

By using the result of regional employment survey

12 months

(Unit: billion KRW)

Size of Freelance Designer Industry in 2020

1,441.4

('19) 1,040.8

Number of Freelance Designers

Estimated no. of employees in Specialized design companies & designers in companies utilizing design

296,951

Designers who are individual proprietors without employees / Total no. of designers

21.1%

No. of designers who are individual proprietors with no employees

48,674 (21.1%)

Other designers full-time employees,
temporary employees, daily employed and individual proprietors with employees, unpaid family workers

182,527 (78.9%)

(Unit: person)

Number of Freelance Designers in 2020

62,516

('19) 49,847

2-5. Education Sector

Size of Education Sector

(Unit: billion KRW)

Annual salary of professors of design department

'19 224.9
'20 **231.5**

+ 2.9%

Research funds for design department

'19 23.3
'20 **25.9**

+ 11.6%

2020 Education Sector
Size of Design Industry

257.5

('19) 248.2

Manpower of Education Sector

(Unit: person)

No. of design faculty

Size of manpower is obtained by adding up the numbers of professors, associate professors, assistant professors, and full-time lecture in design-related departments of junior colleges and four-year universities/colleges.

Four-year Colleges

'19 1,588
'20 **1,576**

Universities Junior Colleges

'19 746
'20 **761**

'19 2,333
'20 **2,337**

+ 4

2020 Education Sector
Design Manpower

2,337

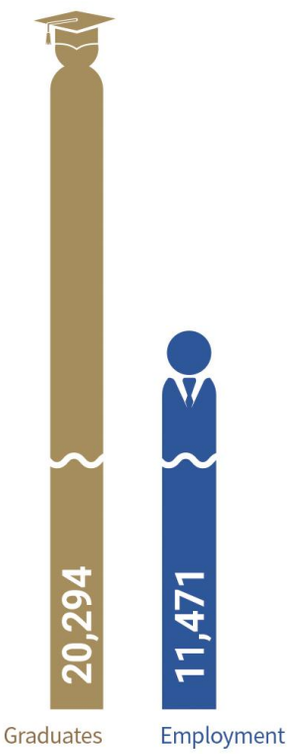
('19) 2,333

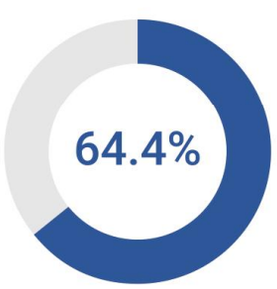
3. Employment Rate of Design Department

2020 Graduates **21,112**

2020 Employment **11,791**

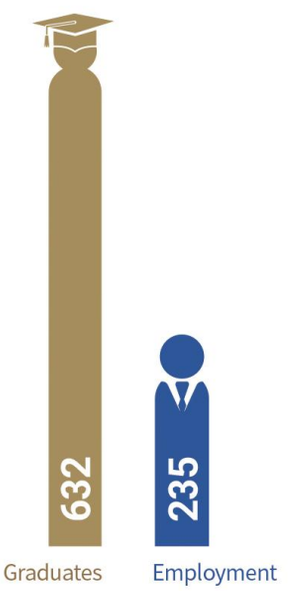
Bachelor's degree

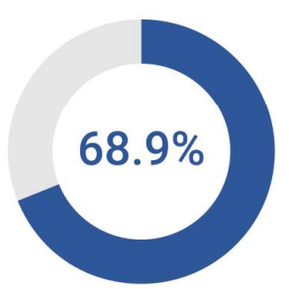




Bachelor's degree employment rate

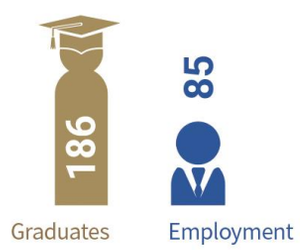
Master's degree

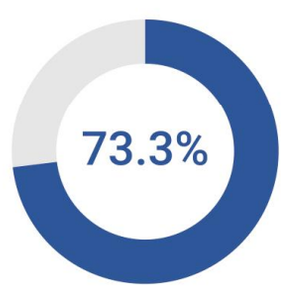




Master's degree employment rate

Doctor's degree





Doctor's degree employment rate

2019 66.2% ↘ 2020 **64.5%**

* Graduates are divided into employment and non-employment and the non-employment is divided into advanced, enlisted, unable to work, excluder, foreign students, etc.

* When calculating the employment rate, we use the graduates excluding advanced, enlisted, unable to work, excluder, foreign students, etc.

4. Amount of Design Export·Import

Design Export

No. of specialized design companies **7,229**

× Ratio of export companies **5.00%**

× (Average sales **607.2** million KRW × Ratio of overseas sales **46.6%**)

(Unit: billion KRW)

2020 Export **102.1**

('19) 598

Design Import

No. of companies utilizing design **147,595**

× Ratio of import companies **0.37%**

× (Average design investment **88.7** million KRW × Ratio of import companies **31.6%**)

(Unit: billion KRW)

2020 Import **15.2**

('19) 150

Amount of Design Export·Import

(Unit: billion KRW)

5. Economic Value of Design

Economic Value of Design

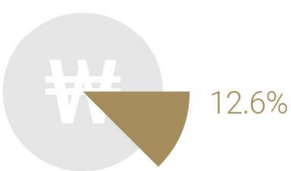
(Unit: trillion KRW)

2020

113.4 trillion KRW ('19) 128.3

Economic Value of Design = Sales from industries that belong to the special design classification X Added value ratio X Contribution rate of design

14.3
Product design



4.3
Visual design

2.8
Digital/Multimedia design

13.1
Space design

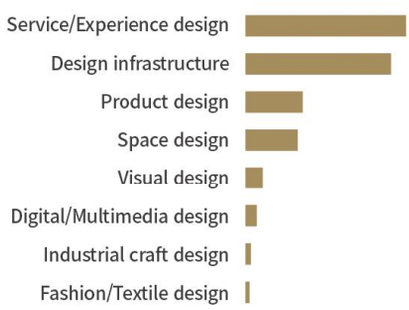
1.1
Fashion/Textile design

40.1
Service/Experience design

1.4
Industrial craft design

36.5
Design infrastructure

Ranking of Design Economic Value



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PART 1 Outline of Survey

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PART 1
Outline of Survey

01 Survey Design

1) Purpose of Survey

- The purpose of this survey is to build objective and reliable data that can serve as a basis for evaluation of the current status of the design industry, thereby responding to the demands of the users of the statistics, and to use the data as basic reference materials in the development of design policies and strategies by government, industries and academic circles.

2) Basis of Survey

- Clause 3, Article 20, Enforcement Decree of the Industrial Design Promotion Act
- Official statistics according to Article 18 of the Statistics Act (No. 115026)

3) History of Survey

- 1997 : Design Census conducted, The 1st Design Industry Statistical Survey conducted
- 2002 : The 2nd Design Census conducted
- 2005 : 2005 Design Industry Status Survey conducted,
  Survey conducted biennially after being renamed
- 2007 : 2007 Korea Design Statistical Data conducted,
  Title changed, Officially approved by Statistics Korea
- 2009 : 2009 Korea Design Statistical Data conducted
- 2011 : 2011 Korea Design Statistical Data conducted
- 2013 : 2013 Korea Design Statistical Data conducted,
  Survey cycle changed (biennial→annual)
  Established the Special Design Classification (8 sections)
- 2014 : 2014 Korea Design Statistical Data conducted
- 2015 : 2015 Korea Design Statistical Data conducted
- 2016 : 2016 Korea Design Statistical Data conducted
- 2017 : 2017 Korea Design Statistical Data conducted
- 2018 : 2018 Korea Design Statistical Data conducted
- 2019 : 2019 Korea Design Statistical Data conducted
- 2020 : 2020 Korea Design Statistical Data conducted
- 2021 : 2021 Korea Design Statistical Data conducted

4) Period of Survey

- Fieldwork period

Company in general and utilizing design	:	2021. 10. 12. ~ 2021. 12. 22.
Specialized design companies	:	2021. 10. 05. ~ 2021. 12. 22.
Public sector	:	2021. 09. 28. ~ 2021. 12. 22.

- Survey reference period : 2020. 01. 01. ~ 2020. 12. 31.

5) Subject and Range of Survey

Survey	Literature Survey
• Utilization or non-utilization of design by companies in general • Companies utilizing design • Specialized design companies • Central and Local governments	• Status of Freelancers • Status of Design-related Educational Institutions • Estimation of Economic value of Design Value-added rate by Special Design Classification

6) Survey Items

Classification	Contents	
Utilization/ non-utilization of design by companies	• Design department as of December 2020 • The number of hired designers as of December 2020 • The number of outsourcing design services provided by specialized design companies/freelancers within 2 years	
Survey of actual conditions of companies that utilize design	• General status of company • Investment performance of design • Status of design and level of contribution • Government policies and support • Questions related to COVID-19	• Status of design utilization • Level of design utilization • Status of design manpower • Status of design education
Survey of actual conditions of specialized design companies	• General status of company • Business performance of design • Status of design education • Questions related to COVID-19	• Focusing area of design and Status of design staff • International exchanges of design • Government policies and support
Survey of actual conditions of central / local governments	• Status of design utilization • Design education	• Status of request orders for design project

7) Population and Sample Size

Classification	Population Size	Sample Size	Sampling Fraction(%)
Survey of Utilization of design by companies in general (a)	369,956	20,476	5.5%
Survey of Actual conditions	147,595	1,871	1.3%
Specialized design companies (b)	7,229	627	8.7%
Central and Local governments (c)	284	269	94.7%
Total (a+b+c)	377,469	21,372	5.7%

8) Outline of Sample design by Survey subjects

- Survey method : Visiting and e-mail/fax/phone

※ Due to Covid-19, the proportion of visiting surveys decreased compared to the previous year.

<table>
<tr><th>Classification</th><th>Sampling Method</th><th>Target Sample Size</th><th>Actual Sample Size</th></tr>
<tr><td rowspan="2">Companies Utilizing Design</td><td>• Two-phase sampling
• [1st Phase]
Survey of utilization/ non-utilization of design
- Stratified sampling/ square root transformation proportional distribution
• [2nd Phase]
Survey of actual conditions of companies that utilize design
- Stratified sampling/ square root transformation proportional distribution</td><td>• [1st Phase]
Survey of utilization/ non-utilization of design
- 20,000 Companies
• [2nd Phase]
Survey of actual conditions of companies that utilize design
- 1,800 Companies</td><td>• [1st Phase]
urvey of utilization/ non-utilization of design
- Completed 20,476 Companies
• [2nd Phase]
Survey of actual conditions of companies that utilize design
- Completed 1,871 Companies</td></tr>
<tr><td colspan="3">• Survey Subjects : Company representatives, department Chiefs of above staffs / Staffs in charge of design</td></tr>
<tr><td rowspan="2">Specialized Design Companies</td><td>• Stratified sampling
• square root transformation proportional distribution</td><td>• 600 Companies</td><td>• Completed 627 companies</td></tr>
<tr><td colspan="3">• Survey Subjects : Company representatives, department Chiefs or above staffs in charge of design</td></tr>
<tr><td rowspan="2">Public Sector</td><td rowspan="2">• Public officials in charge of design</td><td>• Central Department (18 ministries 5 agencies and 18 offices)
- 41 institutions
• Local government (City/ autonomous districts)
- 243 institutions</td><td>• Central Department (18 ministries 5 agencies and 18 offices)
- Completed 31 institutions
• Local government (City/ autonomous districts)
- Completed 238 institutions</td></tr>
<tr><td colspan="3">• Public officials in charge of design</td></tr>
</table>

02 Concept and Keyword

1) Company in general

- Company with 5 or more employees which fall under Special Design Classification in 2019 Census on Establishments.

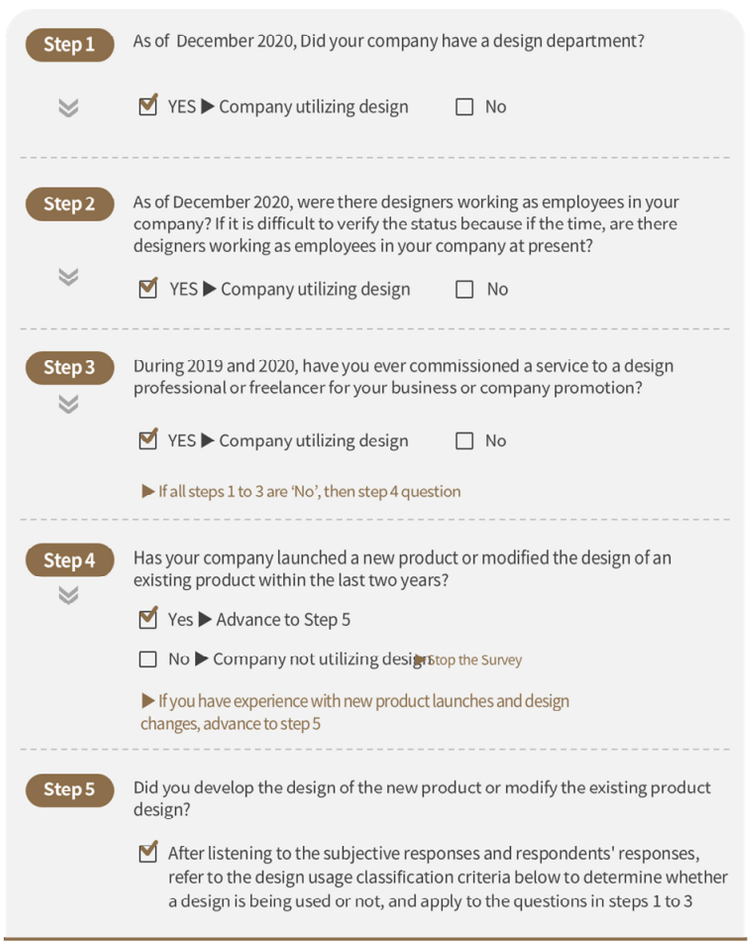
  *For population data, data from 2020, the same as the base year of the survey, should be used, but the most recent data (2019) among the nationwide business survey data released by the National Statistical Office was used.

2) Company utilizing design

- Company estimated to be utilizing design in the design utilization survey within companies in general.

2-1) Confirmation step of company utilizing design

- The design utilization of general design companies is classified by its 'design department', 'Designer hiring', and 'outsourcing design services provided by specialized design companies or freelancer'. The confirmation process is as follows;



3) Designer

- Among those employed as designers, those with design-related degrees or certificates, or those with two or more years of experience in design who do not hold design-related degrees or certificates.

4) Specialized design company

- Company which fall under specialized design industry in 2018 Census on Establishments.
- Specialized design companies consist of 1 group, 1 class, and 4 subclasses based on KSIC-10.

[Section] M. Professional, scientific and technical activities
└ [Division] 73. Other professional, scientific and technical services
└ [Group] 732. Specialized design
└ [Class] Specialized design
└ [Subclass] 73201. Interior design services (Special Design Classification = 4-10-1),
73202. Products design services (Special Design Classification = 1-7-1)
73203. Graphic design services (Special Design Classification = 2-5-6),
72309. Other specialized design services (Special Design Classification = 5-5-1)

5) Korean Standard Industrial Classification[1)]

- Korean Standard Industrial Classification(KSIC) was developed to secure the accuracy and comparability of industry-related data, based on the International Standard Industrial Classification (ISIC) adopted by the United Nations(UN).
- KSIC consists of 21 sections, 77 divisions, 232 groups, 495 classes and 1,196 subclasses.

6) Special Design Classification

- Special Design Classification was established to calculate design promotion strategies and industry size and statistics by classifying industry types expected to utilize design and industry types of specialized design companies among the Korean Standard Industrial Classification.
- Special Design classification consist of 8 sections, 42 divisions, 154 groups.
- Special Design Classification was established in 2013 and used for survey design and result calculation.

1) Statistics Korea. (2017). Korean Standard Industrial Classification, refer to pp.3-11.

7) Company types

- Individual proprietorship
  - Businesses run by individuals and not by corporate bodies; businesses jointly run by different individuals are also included in this category.
  - Authorized agents, special agencies, franchise stores, etc. run independently under the responsibility of private business owners based on sales contracts concerning products, services, etc. with relevant companies.
- Incorporated companies
  - Profit-making corporations established according to the regulations of a commercial law: includes incorporated companies, limited companies, joint stock companies, unlimited partnership companies and foreign companies.
  - Foreign companies are those with branch offices, sales offices, etc. established in Korea with head offices in a foreign country (e.g. the US).
- Non-business corporations
  - These are corporations established based on the regulations of civil law or special laws and include foundations, incorporated associations, incorporated educational institutions, medical corporations, social welfare corporations, public corporations, etc.

8) Industry Types

- Unit Business (one business, one office)
  - Individual office-with no head office, branch office, business office, sales office, etc. in another location
- Head offices, main stores (one business, multiple offices)
  - Businesses that supervise the overall business activities of one or more branch offices, business offices or sales offices under the same management
  - Businesses in which overall management operations such as planning, accounting, finance, purchase, advertisement, legal affairs, etc. are carried out
- Branch offices, business offices, sales offices (one business, multiple offices)
  - Branch offices, business offices, sales offices, etc. that receive directions on overall operations from a separate head office

9) Employees

- Full-time Employees
  - Those who have concluded employment contracts for one year or longer with the business or those, although without an employment contract for a certain period, who are subjected to the company's personnel management rules or receive various benefits including bonuses from the company
- Temporary or Daily employed Workers
  - Workers with less than one year of employment under contract who receive wages from the company

10) Business Results

- Sales : Total earnings from business activities carried out for the year 2020
- Personnel expenses : benefits and charges paid to employees including wages, welfare benefits, retirement allowances, etc. for the year 2020
- R&D costs : Research costs, development costs, ordinary R&D costs
- Business profits : Profits obtained by subtracting operation costs from total sales

11) Classification of Business Scale

- Classification of medium and small companies is made based on Article 2 of the Framework Act on Small and Medium Enterprises.
- Medium-sized companies are identified through questionnaires at the step of design utilization survey.
- Companies other than Small or Medium companies are classified as Large company.

Industry	Medium Company	Small Company
Manufacturing		
Other machinery and equipment manufacturing	120~1,000 billion KRW	less than 120 billion KRW
Manufacture of metalworking products; Excluding machinery and furniture	120~1,000 billion KRW	less than 120 billion KRW
Food manufacturing	120~1,000 billion KRW	less than 120 billion KRW
Automobile and trailer manufacturing	120~1,000 billion KRW	less than 120 billion KRW
Manufacture of electronic components, computers, video, sound and communication equipment	120~1,000 billion KRW	less than 120 billion KRW
Manufacture of coke, briquette and oil refining products	120~1,000 billion KRW	less than 120 billion KRW
Chemical and chemical products manufacturing; Excluding medicines	120~1,000 billion KRW	less than 120 billion KRW
Manufacture of primary metal	120~1,500 billion KRW	less than 120 billion KRW
Furniture manufacturing	120~1,500 billion KRW	less than 120 billion KRW
Manufacture of leather, bags and footwear	120~1,500 billion KRW	less than 120 billion KRW
Manufacture of apparel, clothing accessories and fur products	120~1,500 billion KRW	less than 120 billion KRW
Electrical equipment manufacturing	120~1,500 billion KRW	less than 120 billion KRW
Manufacture of non-metallic mineral products	120~800 billion KRW	less than 120 billion KRW
Beverage industry	120~800 billion KRW	less than 120 billion KRW
Manufacture of medical materials and pharmaceuticals	120~800 billion KRW	less than 120 billion KRW
Manufacture of rubber and plastic products	80~1,000 billion KRW	less than 80 billion KRW
Other transportation equipment manufacturing	80~1,000 billion KRW	less than 80 billion KRW
Tobacco industry	80~1,000 billion KRW	less than 80 billion KRW
Manufacture of wood and wood products; Furniture exclusion	80~1,000 billion KRW	less than 80 billion KRW
Textile products manufacturing; Except clothing	80~1,000 billion KRW	less than 80 billion KRW
Manufacture of pulp, paper and paper products	80~1,500 billion KRW	less than 80 billion KRW
Other product manufacturing	80~800 billion KRW	less than 80 billion KRW
Medical, precision, optical equipment and watch manufacturing	80~800 billion KRW	less than 80 billion KRW
Printing and Recording Media Reproduction	80~800 billion KRW	less than 80 billion KRW
Non manufacturing		
Electricity, gas, steam, and water services	120~1,000 billion KRW	less than 120 billion KRW
Construction	80~1,000 billion KRW	less than 80 billion KRW
Mining	80~1,000 billion KRW	less than 80 billion KRW
Agriculture, forestry and fishing	80~1,000 billion KRW	less than 80 billion KRW
Transportation	80~800 billion KRW	less than 80 billion KRW
Sewage and waste disposal, raw material recycling	80~800 billion KRW	less than 30 billion KRW
Financial service and insurance activities	80~400 billion KRW	less than 80 billion KRW
Wholesale and retail sale	50~1,000 billion KRW	less than 50 billion KRW
Publishing, video, broadcast communications and information services	50~800 billion KRW	less than 50 billion KRW
Real estate activities and renting and leasing	30~400 billion KRW	less than 30 billion KRW
Business facilities and management and business support services	30~600 billion KRW	less than 30 billion KRW
Arts, sports and recreation related services	30~600 billion KRW	less than 30 billion KRW
Professional, scientific and technical services	30~600 billion KRW	less than 30 billion KRW
Health and social work services	10~600 billion KRW	less than 10 billion KRW
Membership organizations, repair and other personal services	10~600 billion KRW	less than 10 billion KRW
Education services	10~400 billion KRW	less than 10 billion KRW
Accommodation and restaurant business	10~400 billion KRW	less than 10 billion KRW
Public administration, defense and social security administration	50~299 employees	less than 49 employees

※ The public administrations, national defenses, and social security administrations are classified by the number of employees in a conventional manner, because there is no criteria for classification of these kinds of things.

12) Design related Investments and Business Expenses

- Personnel expenses for designers
  - Personnel expenses for designers employed for the year 2020
- Design service charges
  - Service charges for specialized design companies, freelancers etc. for the year 2020

  ※ Service charges of specialized design companies and other service charges separated.
- Design machines/devices and software
  - Expenses for purchase and management of equipment, devices, computer systems and application software for design R&D for the year 2020
- Land/building for design
  - R&D Expenses spent on purchase, major repair, etc. of land and buildings for design R&D for the year 2020
- Other design-related operation costs
  - Other costs for design research such as those spent on materials, printed matters, purchase of fixtures, education and training, business trips, etc. for the year 2020

13) Application for / registration of industrial property rights

- application : Submission of documents required under relevant laws to a government agency for the purpose of registration of industrial property rights
- Registration : Administrative measures by an administrative agency evaluating submitted application materials based on formal and actual conditions required by relevant laws, and authorization of rights when the requirements are satisfied

03 Characteristics of Respondents

1) Companies in general

Classification		Survey Sample	
		Number of cases	%
Total		**20,476**	**100.0**
Region	**Seoul**	5,241	25.6
	Incheon/Gyeonggi/Gangwon	6,728	32.9
	Busan/Ulsan/Gyeongnam	2,855	13.9
	Daegu/Gyeongbuk	1,856	9.1
	Gwangju/Jeolla/Jeju	1,707	8.3
	Daejeon/Sejong/Chungcheong	2,089	10.2
Industry Type	**Product design**	4,629	22.6
	Visual design	2,136	10.4
	Digital/multimedia design	802	3.9
	Space design	4,725	23.1
	Fashion/textile design	1,268	6.2
	Service/experience design	2,223	10.9
	Industrial craft design	1,584	7.7
	Design infrastructure (design-based technology)	3,109	15.2
Business Scale	**Small companies**	13,145	64.2
	Medium companies	5,643	27.6
	Midsize companies	618	3.0
	Large companies	1,070	5.2

2) Company utilizing design

Classification		Survey Sample	
		Number of cases	%
Total		**1,871**	**100.0**
Region	**Seoul**	803	42.9
	Incheon/Gyeonggi/Gangwon	576	30.8
	Busan/Ulsan/Gyeongnam	160	8.6
	Daegu/Gyeongbuk	106	5.7
	Gwangju/Jeolla/Jeju	77	4.1
	Daejeon/Sejong/Chungcheong	149	8.0
Industry Type	**Product design**	406	21.7
	Visual design	255	13.6
	Digital/multimedia design	149	8.0
	Space design	373	19.9
	Fashion/textile design	187	10.0
	Service/experience design	206	11.0
	Industrial craft design	56	3.0
	Design infrastructure (design-based technology)	239	12.8
Business Scale	**Small companies**	1,150	61.5
	Medium companies	608	32.5
	Midsize companies	64	3.4
	Large companies	49	2.6
Employment	**Designer employment**	1,318	70.4
	Designer non-employment	553	29.6
Outsourcing	**Design outsourcing**	748	40.0
	Design non-outsourcing	1,123	60.0

3) Specialized design companies

Classification		Survey Sample	
		Number of cases	%
Total		**627**	**100.0**
Region	**Seoul**	360	57.4
	Incheon/Gyeonggi/Gangwon	84	13.4
	Busan/Ulsan/Gyeongnam	65	10.4
	Daegu/Gyeongbuk	33	5.3
	Gwangju/Jeolla/Jeju	50	8.0
	Daejeon/Sejong/Chungcheong	35	5.6
Industry type	**Product design**	158	25.2
	Visual design	197	31.4
	Interior design	164	26.2
	Other types of fashion/ textile design	108	17.2
Scale of employees	**1 person**	106	16.9
	2-4 persons	206	32.9
	5~9 persons	161	25.7
	10~19 persons	96	15.3
	20 or more persons	58	9.3
Type	**Individual proprietorship**	304	48.5
	Incorporated company	320	51.0
	Non-business corporation	3	0.5

4) Central government agencies

- 31 agencies completed, out of 41 agencies

Number of cases	
Ministry	· 14 ministries / 18 ministries - Response: Ministry of Strategy and Finance; Ministry of Education; Ministry of Foreign Affairs; Ministry of Unification; Ministry of Science and ICT; Ministry of Justice; Ministry of the Interior and Safety; Ministry of Culture, Sports, and Tourism; Ministry of Agriculture, Food and Rural Affairs; Ministry of Trade, Industry and Energy; Ministry of Environment; Ministry of Gender Equality and Family; Ministry of Land, Infrastructure and Transport; Ministry of Oceans and Fisheries - Non-response: Ministry of National Defense; Ministry of Health and Welfare; Ministry of Employment and Labor; Ministry of SMEs and Startups
Agency	· 4 agencies / 5 agencies - Response: Ministry of Patriots and Veterans Affairs; Ministry of Government Legislation; Ministry of Personnel Management; Ministry of Food and Drug Safety - Non-response: Presidential Security Service Republic Korea
Office	· 14 officies / 18 officies - Response: National Tax Service; Korea Customs Service; Public Procurement Service; Statistics Korea; Military Manpower Administration; National Fire Agency; Defense Acquisition Program Administraion; the National Police Agency; Rural Development Administration; Korea Forest Service; Korea Meteorological Administration; Korea Coast Guard; National Agency for Administrative City Construction - Non-response: Prosecution Service; Cultural Heritage Administration; Korean Intellectual Property Office; Sae-mangeum Development and Investment Agency; Korea Disease Control and Prevention Agency

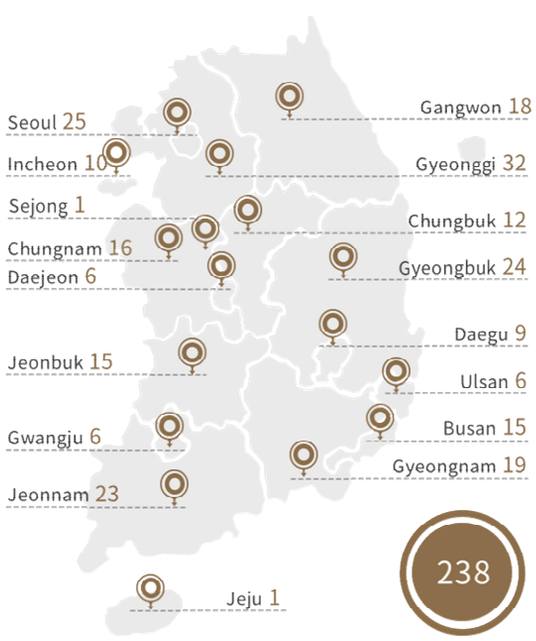
5) Local governments

- 238 local government agencies completed, out of 243[2)]

[Local Government Completed Survey by Region]

Completed Survey / Total local Government

City/Province		City/Country/District			Total
		City	Country	District	
Seoul	1/1			24/25	**25/26**
Busan	1/1		1/1	13/15	**15/17**
Daegu	1/1		1/1	7/7	**9/9**
Incheon	1/1		2/2	7/8	**10/11**
Gwangju	1/1			5/5	**6/6**
Daejeon	1/1			5/5	**6/6**
Ulsan	1/1		1/1	4/4	**6/6**
Sejong	1/1				**1/1**
Gyeonggi	1/1	28/28	3/3		**32/32**
Gangwon	1/1	7/7	10/11		**18/19**
Chungbuk	1/1	3/3	8/8		**12/12**
Chungnam	1/1	8/8	7/7		**16/16**
Jeonbuk	1/1	6/6	8/8		**15/15**
Jeonnam	1/1	5/5	17/17		**23/23**
Gyeongbuk	1/1	10/10	13/13		**24/24**
Gyeongnam	1/1	8/8	10/10		**19/19**
Jeju	1/1				**1/1**
Total	**17/17**	**75/75**	**81/82**	**65/69**	**238/243**



2) Seoul Gwangjin-gu, Busan Dong-gu, Busan Seo-gu, Gangwon Yanggu-gun, Incheon Michuhol-gu, Jeollabuk-do, Jeollanam-do Unanswered

04 Sample Design

1) Utilization or non-utilization of design by companies in general (1st Survey)

(1) Definition of population

- Among the 2019 nationwide business survey, companies with 5 or more employees that fall under the design industry classification are defined as the survey population for the design utilization survey.
- Design industry classification (1-7-1 product design, 2-5-6 visual design, 4-10-1 interior design, 5-5-1 fashion, other types of fashion/textile design), central government and Local governments (part of 8-3-2) and universities (part of 8-3-3) were excluded from the survey of general companies because they overlapped with other survey subjects.
- From this year, non-incorporated organizations and businesses classified as national/local governments are excluded from the design. Non-incorporated organizations are groups or gatherings without legal personality, such as alumni associations, support groups, cultural organizations, labor organizations, and family associations. It was included in the population until the previous year's survey, but it was excluded from this year as a type that did not fall under the category of companies utilizing design.
  In addition, the number of unincorporated organizations and national/local governments is 30,371(7.6%) of the total (400,327).

(2) Characteristics of population

- The total number of companies surveyed is 369,956.
  Product design 55,456 (15.0%), visual design 21,841 (5.9%), digital/multimedia design 7,540 (2.0%), spatial design 90,915 (24.6%), fashion/textile design 12,476 (3.4%), service/experience design (58)) 15.7%), industrial craft design 19,829 (5.4%), design infrastructure (design-based technology) 103,802 (28.1%).

▾ **Population size by industry type and scale of employees of general companies** (Unit : Number)

Industry type	Scale of employees						
	5-9 persons	10-19 persons	20-49 persons	50-99 persons	100~299 persons	300 or more persons	Total
Total	**208,387**	**88,085**	**50,013**	**13,935**	**7,429**	**2,107**	**369,956**
Product design	28,548	11,839	9,914	3,072	1,660	423	55,456
Visual design	13,141	4,123	3,046	922	516	93	21,841
Digital/multimedia design	3,841	1,874	1,206	363	205	51	7,540
Space design	50,663	24,033	11,360	2,702	1,610	547	90,915
Fashion/textile design	8,776	2,210	1,113	265	100	12	12,476
Service/experience design	27,439	17,134	8,895	2,747	1,504	378	58,097
Industrial craft design	12,824	4,045	2,375	400	168	17	19,829
Design infrastructure (design-based technology)	63,155	22,827	12,104	3,464	1,666	586	103,802

▼ **Population size by industry type and Scale of employees of general companies** (Unit : Number)

classification code (sections-divisions-groups)	Groups	Scale of employees						
		5-9 persons	10-19 persons	20-49 persons	50-99 persons	100-299 persons	300 or more persons	Total
Total		**208,387**	**88,085**	**50,013**	**13,935**	**7,429**	**2,107**	**369,956**
1-1-1	medical device design	1,250	362	280	97	54	6	2,049
1-1-2	computer and monitor design	113	41	36	9	5	0	204
1-1-3	computer peripheral design	122	63	45	8	8	1	247
1-1-4	Wired and wireless communication devices and communication equipment design	630	288	230	79	41	13	1,281
1-1-5	video equipment design	166	59	52	15	12	2	306
1-1-6	sound equipment design	158	71	74	21	13	8	345
1-1-7	Broadcast equipment/device design	266	150	99	27	12	7	561
1-1-8	Home appliances and kitchen appliances design	1,572	680	526	159	72	21	3,030
1-1-9	office equipment design	117	59	44	14	6	1	241
1-1-10	lighting equipment design	754	268	163	39	11	0	1,235
1-1-11	Design of electric equipment and special purpose lighting	3,462	1,228	944	234	128	29	6,025
1-2-1	tool design	865	360	268	58	25	9	1,585
1-2-2	musical instrument design	47	17	11	3	1	0	79
1-2-3	Measurement, test, control and other precision instrument design	1,619	593	413	119	44	8	2,796
1-2-4	Design related to semiconductor and electronic component manufacturings	2,315	958	847	293	208	97	4,718
1-2-5	robot design	170	77	58	20	9	1	335
1-2-6	watch design	28	9	7	2	0	0	46
1-3-1	Glasses and Optics Design	229	93	69	33	26	4	454
1-3-2	Plaything design	140	38	11	5	3	0	197
1-3-3	Sports/Leisure Goods Design	163	56	29	5	3	0	256
1-3-4	Office/Painting Supplies Design	63	22	24	6	3	0	118
1-3-5	hygiene product design	141	55	35	8	11	1	251
1-3-6	container design	39	19	26	6	4	0	94
1-3-7	household goods design	998	326	210	39	6	0	1,579
1-3-8	Paper and cardboard product design	1,530	707	502	116	46	5	2,906
1-3-9	Chemical, rubber and plastic product design	4,598	2,316	1,963	497	274	42	9,690
1-4-1	car design	1,945	1,062	1,366	552	308	72	5,305
1-4-2	Yacht/Ship Design	664	264	337	249	132	3	1,649
1-4-3	train design	3	0	2	0	1	1	7
1-4-4	Aviation/Space Design	36	9	7	4	0	2	58
1-4-5	bike design	60	13	7	3	0	0	83
1-4-6	Other transport design	375	232	222	52	14	5	900
1-5-1	living furniture design	312	72	54	7	2	0	447
1-5-2	kitchen furniture design	890	174	109	15	6	1	1,195
1-5-3	medical furniture design	42	15	14	5	0	0	76
1-5-4	Other Furniture Designs	2,287	698	431	59	27	4	3,506
1-6-1	Manufacturing company headquarters design	379	385	399	214	145	80	1,602

▾ Population size by industry type and Scale of employees of general companies

(Unit : Number)

classification code (sections-divisions-groups)	Groups	Scale of employees						
		5-9 persons	10-19 persons	20-49 persons	50-99 persons	100-299 persons	300 or more persons	Total
2-1-1	general book editorial design	1,646	535	312	54	31	10	2,588
2-1-2	Newspaper/magazine editorial design	455	202	133	49	33	14	886
2-1-3	Other Print Editing Designs	590	104	47	9	5	1	756
2-2-1	Livestock and aquatic products processed food package graphic design	2,064	907	734	205	89	10	4,009
2-2-2	Agricultural products processed food package graphic design	1,485	431	288	80	17	1	2,302
2-2-3	Dairy and ice cream package graphic design	45	12	43	19	25	3	147
2-2-4	Tteok, bread, confectionery, noodle package graphic design	1,297	351	287	82	52	16	2,085
2-2-5	Other food package graphic design	1,666	544	484	154	73	8	2,929
2-2-6	drink package graphic design	133	46	55	31	27	5	297
2-2-7	pharmaceutical package graphic design	248	114	159	98	95	18	732
2-3-1	chemical product package graphic design	678	250	232	93	53	7	1,313
2-3-2	Media product package graphic design	50	18	6	5	3	0	82
2-4-1	Newspaper, magazine and other printed advertisement design	544	135	42	6	3	0	730
2-4-2	Outdoor Print Advertisement Design	966	129	74	8	2	0	1,179
2-5-1	illustration	15	19	15	9	1	0	59
2-5-2	identity design	502	116	60	9	2	0	689
2-5-3	character design	508	159	54	8	4	0	733
2-5-4	Typography	185	40	16	3	1	0	245
2-5-5	photo design	64	11	5	0	0	0	80
3-1-1	Advertising film and video design	238	115	43	9	3	0	408
3-1-2	General film and video design	712	260	269	80	13	1	1,335
3-1-3	Broadcast program video design	177	81	60	16	10	1	345
3-1-4	animation design	88	66	48	13	9	1	225
3-1-5	spatial image design	176	54	14	3	3	0	250
3-2-1	website design	731	416	244	65	37	4	1,497
3-2-2	online advertising design	1,023	478	227	60	27	9	1,824
3-3-1	Online/Mobile Game Design	246	151	106	43	46	24	616
3-3-2	Other game design	58	41	36	4	8	1	148
3-5-1	Digital DB source design	219	111	96	36	33	7	502
3-5-2	Other digital/multimedia design	173	101	63	34	16	3	390

▼ Population size by industry type and Scale of employees of general companies (Unit : Number)

classification code (sections-divisions-groups)	Groups	Scale of employees						
		5-9 persons	10-19 persons	20-49 persons	50-99 persons	100-299 persons	300 or more persons	Total
Total		**208,387**	**88,085**	**50,013**	**13,935**	**7,429**	**2,107**	**369,956**
4-1-1	interior design	10,181	2,383	669	146	163	39	13,581
4-1-2	architectural design	3,057	1,128	665	203	100	43	5,196
4-1-3	interior design	74	34	7	2	1	0	118
4-2-1	interior coordination	109	44	21	7	3	1	185
4-2-2	interior lighting design	4,826	2,565	1,070	231	127	15	8,834
4-3-1	exhibition design	542	247	91	23	13	1	917
4-3-2	stage design	690	368	310	91	30	7	1,496
4-4-1	wood material design	389	119	86	12	6	0	612
4-4-2	plastic material design	951	374	268	39	12	1	1,645
4-4-3	metal design	2,543	843	534	80	21	3	4,024
4-4-4	Other Material Design	2,693	1,069	441	71	24	5	4,303
4-5-1	environmental design	331	90	51	7	1	0	480
4-5-2	scenery design	318	155	44	7	1	2	527
4-5-3	art decoration design	187	87	27	5	3	1	310
4-6-1	landscape design	1,271	692	245	49	20	3	2,280
4-6-2	Playground/Park Design	45	19	11	1	0	0	76
4-7-1	Residential Building Remodeling Design	2,351	1,464	720	192	98	41	4,866
4-7-2	Commercial and other architectural remodeling design	1,514	1,587	849	201	89	19	4,259
4-8-1	building construction design	4,089	2,554	963	246	153	94	8,099
4-8-2	building equipment design	5,760	2,819	1,024	171	108	43	9,925
4-8-3	Building maintenance service design	1,929	1,175	1,020	406	345	150	5,025
4-9-1	road and bridge design	2,105	1,106	693	137	73	18	4,132
4-9-2	Civil Environment Design	4,295	2,869	1,396	354	216	60	9,190
4-9-3	civil geological environment design	413	242	155	21	3	1	835
5-1-1	menswear design	289	82	38	13	11	2	435
5-1-2	womenswear design	1,377	190	100	23	18	3	1,711
5-1-3	baby clothes design	154	41	19	5	3	0	222
5-1-4	fur design	94	19	11	2	0	0	126
5-1-5	traditional clothing design	54	9	3	0	0	0	66
5-2-1	sportswear design	1,607	369	103	14	5	1	2,099
5-2-2	Work wear, casual wear design	620	217	124	25	12	2	1,000
5-2-3	Technical wear, outerwear design	251	30	5	6	0	0	292
5-2-4	innerwear design	743	207	80	22	8	3	1,063
5-3-1	interior textile design	598	143	78	26	4	0	849
5-3-2	fabric design	77	36	22	3	0	0	138
5-3-3	knitting design	740	190	59	9	1	0	999
5-3-4	print design	470	196	207	72	18	0	963
5-3-5	Other Fabric Design	254	134	85	19	7	0	499
5-4-1	fashion accessory design	140	37	12	1	1	0	191
5-4-2	shoe design	325	131	80	15	7	0	558
5-4-3	bag design	518	77	34	5	2	1	637
5-4-4	Other miscellaneous goods design	465	102	53	5	3	0	628

▾ Population size by industry type and Scale of employees of general companies

(Unit : Number)

classification code (sections-divisions-groups)	Groups	Scale of employees						
		5-9 persons	10-19 persons	20-49 persons	50-99 persons	100-299 persons	300 or more persons	Total
Total		**208,387**	**88,085**	**50,013**	**13,935**	**7,429**	**2,107**	**369,956**
6-1-1	health care service design	2,853	2,442	2,592	839	345	54	9,125
6-1-2	Leisure/leisure service design	2,239	773	522	134	78	13	3,759
6-1-3	Education service design	443	209	98	32	14	8	804
6-1-4	Community service design	308	172	123	33	17	2	655
6-1-5	Public Administration Service Design	17,832	11,102	3,765	1,024	642	186	34,551
6-2-1	Human interaction design	543	357	266	122	66	35	1,389
6-2-2	System/application software design	2,585	1,626	1,111	361	214	46	5,943
6-2-3	Digital publication design	201	85	59	30	20	9	404
6-2-4	User Interface (UI) Design	79	50	22	15	12	2	180
6-2-5	Other interactive media design	356	318	337	157	96	23	1,287
7-1-1	metal forging design	269	92	93	20	13	2	489
7-1-2	metal press design	1,102	386	295	66	21	3	1,873
7-1-3	metal casting design	220	121	151	40	16	1	549
7-1-4	Non-ferrous metal casting design	245	78	63	15	6	0	407
7-1-5	Commercial Jewelry Design	89	18	11	0	0	0	118
7-1-6	precious metal design	221	66	41	7	5	1	341
7-1-7	metal surface decoration design	7,753	2,253	1,187	149	57	6	11,405
7-2-1	ceramic design	121	17	19	2	2	0	161
7-2-2	architectural ceramic design	47	16	28	8	5	0	104
7-3-1	embroidery design	453	149	57	2	1	0	662
7-3-2	knot design	206	70	46	11	2	0	335
7-3-3	dye design	54	42	30	3	1	0	130
7-3-4	weave design	677	326	149	27	16	0	1,195
7-4-1	Large tree design	160	47	15	4	0	0	226
7-4-2	Small tree design	241	48	16	2	0	0	307
7-5-1	Mother-of-pearl and lacquer craft design	145	74	56	28	18	4	325
7-5-2	glass craft design	21	8	2	1	0	0	32
7-5-3	leather craft design	119	44	23	10	5	0	201
7-5-4	Paper craft design	170	108	64	2	0	0	344
7-5-5	masonry design	511	82	29	3	0	0	625
8-1-1	Manufacture of design mock-ups	2,932	883	532	101	31	2	4,481
8-1-2	Computer Applied Modeling (CAD/CAM)	11	7	7	3	5	0	33
8-2-1	design planning	1,539	590	316	67	41	4	2,557
8-2-2	Design Research and Publishing	2,694	1,174	726	242	162	66	5,064
8-3-1	legal services	1,684	674	283	64	26	9	2,740
8-3-2	administrative service	96	59	54	19	9	5	242
8-3-3	education service	16,535	4,810	3,227	1,467	835	354	27,228
8-3-4	Design Marketing and Distribution	35,007	13,675	6,428	1,327	460	115	57,012
8-3-5	design agency	2,458	799	373	101	57	4	3,792
8-3-6	Other Industrial Company Headquarters	199	156	158	73	40	27	653

(3) Sample size

- The sample size is affected by the sampling method, the characteristics of the population, and the stratification method, but it is calculated according to the level of control over the target error of the average estimate for each statistical analysis unit through simple random sampling.

$$n = \frac{N(zs)^2}{Nd^2 + (zs)^2}$$ (N : Population size, s : Standard deviation of the variable of interest, z : Confidence coefficient below 95% confidence level)

- The overall sample size of general company survey on utilization or non-utilization of design was set to the relative sample error of the large category industry was less than 3%, and it was decided to be about 20,000 (about 5.4% of the population size) considering the cost and time of the survey.
- the expected sampling error for the estimation of the population ratio is about ±0.67%p (p=0.5) under the 95% confidence level, assuming simple random sampling.
- Since this survey will use a stratified sampling method that considers the industry and the number of workers, the actual sampling error is expected to be slightly smaller than this, and the sampling error is judged to be sufficiently acceptable in terms of general standards.

(4) Stratifying Population and Distributing Samples

▪ **Stratification: Industry and employee size are considered as stratification variables to enhance the characteristics of the survey content and representability of the population.**

- Business field: 150 design industry classification
  (Among the design industry classification, 4 specialized design companies are excluded as duplicates)
- Scale of employees: 5-9, 10-19, 20-49, 50-99, 100-299, 300 or more

▪ **Sampling process of the survey (1st survey) on design utilization by general companies**

Step 1) Allocating a full investigation

: Before distributing samples according to stratification variables,
a full investigation is conducted on businesses that meet the following three conditions.

1) Population size of 50 or less by industry
2) No more than 5 surveyed populations by industry and employee size
3) 300 employees or more

Step 2) Proportional distribution of variance (Square root of population)

: Simple proportional distribution by industry type (sub-categorizing design industry classification) and Scale of employees causes a problem that too small sample size may be assigned to some industries and Scale of employees. Therefore, it was proportionally distributed to improve this drawback.

▾ **Sample distribution by industry type and scale of employee** (Unit: number)

Classification		Scale of employee						
		5-9 persons	10-19 persons	20-49 persons	50-99 persons	100-299 persons	300 or more	Total
Total		**5,231**	**4,782**	**4,437**	**2,588**	**1,819**	**1,619**	**20,476**
Industry type	**Product design**	1,043	1,068	1,057	669	446	346	4,629
	Visual design	590	464	498	285	221	78	2,136
	Digital/Multimedia design	195	179	184	127	83	34	802
	Space design	1,232	1,177	1,000	529	392	395	4,725
	Fashion/Textile design	376	334	307	165	75	11	1,268
	Service/Experience design	533	485	418	284	235	268	2,223
	Industrial craft design	454	405	414	183	112	16	1,584
	Design infrastructure (design-based technology)	808	670	559	346	255	471	3,109

(5) Parameter Estimation

- Estimating population of companies utilizing design and utilization ratio
  Calculating the estimate and standard error of general company parameters by taking into account the extraction rate by industry and employee scale
  - Survey on design utilization (1st survey)
    N : Number of total survey population,
    N_{ij} : ith industry type, Survey population size in the jth scale
    n'_{ij} : ith industry type, Survey population size in the jth scale
    $m_{ij} = \sum_k x_{ijk}$: ith industry type, Number of design companies in the sample of the jth scale
    (But $x_{ijk} = 1$: for companies utilizing design, $x_{ijk} = 0$: for companies utilizing design)

- Number of companies utilizing design
  - By tier : $\widehat{M}_{ij} = N_{ij} \times \frac{m_{ij}}{n'_{ij}}$
  - All : $\widehat{M} = \sum_i \sum_j \widehat{M}_{ij} = \sum_i \sum_j \sum_k w'_{ijk} x_{ijk}$

- Proportion of companies utilizing design
  - By tier : $\widehat{r_{ij}} = \widehat{M}_{ij} / N_{ij}$
  - All : $\hat{r} = \widehat{M} / N$

2) Survey on Companies Utilizing Design (2nd Survey)

(1) Definition of Population

- The survey population refers to a business that is estimated to be a company utilizing design among general companies with 5 or more people that fall under the design industry classification.

(2) Characteristics of Population

- There are 147,595 survey population in total.
  By industry: 18,928 (12.8%) product design, 10,061 (6.8%) visual design, 4,916 (3.3%) digital/multimedia design, 30,535 (20.7%) space design, 5,653 (3.8%) fashion/textile design, 25,227 (17.1%) service/experience design, 5,713 (3.9%) industrial craft design, 46,562(31.5%) design infrastructure.

▾ **Population size subject to the survey on companies utilizing design by industry type and scale of employees**

(Unit: Number)

Industry type	Scale of employees						
	5-9 persons	10-19 persons	20-49 persons	50-99 persons	100-299 persons	300 or more	Total
Total	**76,961**	**37,502**	**21,191**	**7,004**	**3,929**	**1,008**	**147,595**
Product design	9,239	4,458	3,116	1,207	718	190	18,928
Visual design	5,902	1,957	1,385	503	261	52	10,061
Digital/Multimedia design	2,122	1,460	825	291	179	38	4,916
Space design	16,242	8,181	3,999	1,194	702	217	30,535
Fashion/Textile design	3,745	1,126	539	167	63	12	5,653
Service/Experience design	10,357	7,787	4,424	1,563	886	211	25,227
Industrial craft design	3,621	1,178	702	140	65	7	5,713
Design infrastructure (design-based technology)	25,732	11,356	6,201	1,938	1,054	280	46,562

▾ Population of companies utilizing design by industry type

(Unit: Number)

classification code (sections-divisions-groups)	Group	Number	classification code (sections-divisions-groups)	Group	Number
Total		**147,595**	**Total**		**147,595**
1-1-1	Medical device design	858	**1-3-3**	Sports / Leisure item design	124
1-1-2	Computer and monitor design	68	**1-3-4**	Office / Painting supplies design	61
1-1-3	Computer peripherals design	125	**1-3-5**	Hygiene product design	93
1-1-4	Wired and wireless communication devices and communication equipment design	479	**1-3-6**	Container design	58
1-1-5	Imaging device design	112	**1-3-7**	Household goods design	913
1-1-6	Audio equipment design	153	**1-3-8**	Paper and cardboard product design	1,157
1-1-7	Broadcast equipment/device design	258	**1-3-9**	Chemical, rubber and plastic product design	2,629
1-1-8	Home appliances and kitchen appliances design	1,097	**1-4-1**	Vehicle design	1,398
1-1-9	Office equipment design	104	**1-4-2**	Yacht/Ship design	459
1-1-10	Lighting equipment design	568	**1-4-3**	Train design	2
1-1-11	Electrical equipment and special purpose lighting design	1,625	**1-4-4**	Aviation/space ship design	25
1-2-1	Tool design	564	**1-4-5**	Motorcycle design	34
1-2-2	Instrument design	37	**1-4-6**	Other transport equipment design	362
1-2-3	Measurement, test, control and other precision instrument design	906	**1-5-1**	Living furniture design	221
1-2-4	Design related to semiconductor and electronic component manufacturing	1,058	**1-5-2**	Kitchen furniture design	476
1-2-5	Robot design	190	**1-5-3**	Medical furniture design	42
1-2-6	Clock design	31	**1-5-4**	Other furniture design	1,245
1-3-1	Glasses and optics design	210	**1-6-1**	<anufacturing company headquarters design	1,046
1-3-2	Toy design	140			
2-1-1	General book editorial design	1,271	**2-3-1**	Chemical product package graphic design	693
2-1-2	Newspaper/magazine editorial design	668	**2-3-2**	Media product package graphic design	70
2-1-3	Other print editorial design	511	**2-4-1**	Newspaper, magazine and other printed advertisement design	569
2-2-1	Livestock and aquatic products processed food package graphic design	1,778	**2-4-2**	Outdoor print advertisement design	848
2-2-2	Agricultural products processed food package graphic design	680	**2-5-1**	Illustration	29
2-2-3	Dairy products and ice cream package graphic design	92	**2-5-2**	Identity design	237
2-2-4	Rice cake, bread, confectionery, noodle package graphic design	713	**2-5-3**	Character design	429
2-2-5	Other food package graphic design	833	**2-5-4**	Typography	159
2-2-6	Beverage package graphic design	153	**2-5-5**	Photograph design	51
2-2-7	Drug package graphic design	277			
3-1-1	Advertising film and video design	323	**3-2-1**	Website design	1,006
3-1-2	General film and video design	741	**3-2-2**	Online advertisement design	1,260
3-1-3	Broadcast program video design	144	**3-3-1**	Online/Mobile game design	460
3-1-4	Animation design	166	**3-3-2**	Other game design	118
3-1-5	Space image design	168	**3-5-1**	Digital DB source design	316
			3-5-2	Other digital/multimedia design	215

▾ Population of companies utilizing design by industry type

(Unit: Number)

classification code (sections-divisions-groups)	Group	Number	classification code (sections-divisions-groups)	Group	Number
Total		**147,595**	**Total**		**147,595**
4-1-1	Interior design	4,699	**4-5-1**	Environment design	263
4-1-2	Architectural design	2,150	**4-5-2**	Landscape design	221
4-1-3	Indoor landscape design	35	**4-5-3**	Art decoration design	184
4-2-1	Interior coordination	120	**4-6-1**	Landscape design	1,040
4-2-2	Indoor lighting design	2,475	**4-6-2**	Playground/park design	47
4-3-1	Exhibition design	636	**4-7-1**	Residential building remodeling design	1,872
4-3-2	Stage design	711	**4-7-2**	Commercial and other architectural remodeling design	1,256
4-4-1	Wood material design	195	**4-8-1**	Building construction design	2,698
4-4-2	Plastic material design	510	**4-8-2**	Building equipment design	2,843
4-4-3	Metal design	916	**4-8-3**	Building maintenance service design	1,814
4-4-4	Other material design	1,476	**4-9-1**	Road and bridge design	1,175
			4-9-2	Civil environment design	2,936
			4-9-3	Civil geological environment design	263
5-1-1	Menswear design	171	**5-3-1**	Interior textile design	270
5-1-2	Womenswear design	852	**5-3-2**	Fabric design	85
5-1-3	Children’s wear design	117	**5-3-3**	Knitting design	348
5-1-4	Fur design	80	**5-3-4**	Printing design	424
5-1-5	Traditional clothing design	43	**5-3-5**	Other fabric design	198
5-2-1	Sportswear design	944	**5-4-1**	Fashion accessory design	59
5-2-2	Work wear, casual wear design	529	**5-4-2**	Shoes design	198
5-2-3	Technical wear, outerwear design	107	**5-4-3**	Bag design	229
5-2-4	Innerwear design	633	**5-4-4**	Other accessory design	366
6-1-1	Health care service design	4,365	**6-2-1**	Human interaction design	755
6-1-2	Leisure service design	1,633	**6-2-2**	System/application software design	3,305
6-1-3	Education service design	484	**6-2-3**	Digital publication design	313
6-1-4	Community service design	252	**6-2-4**	User interface (UI) design	89
6-1-5	Public administration service design	13,239	**6-2-5**	Other interactive media design	791
7-1-1	Metal forging design	154	**7-3-1**	Embroidery design	251
7-1-2	Metal pressure design	533	**7-3-2**	Knot design	115
7-1-3	Metal casting design	165	**7-3-3**	Dyeing design	56
7-1-4	Non-ferrous metal casting design	93	**7-3-4**	Weave design	380
7-1-5	Commercial jewelry design	32	**7-4-1**	Large tree design	88
7-1-6	Precious metal design	141	**7-4-2**	Small tree design	94
7-1-7	Metal surface decoration design	2,967	**7-5-1**	Mother-of-pearl and lacquer craft design	108
7-2-1	Ceramic design	118	**7-5-2**	Glass craft design	10
7-2-2	Architectural ceramics design	37	**7-5-3**	Leather craft design	85
			7-5-4	Paper craft design	132
			7-5-5	Stonework design	154

▾ **Population of companies utilizing design by industry type** (Unit: Number)

classification code (sections-divisions-groups)	Group	Number	classification code (sections-divisions-groups)	Group	Number
Total		**147,595**	**Total**		**147,595**
8-1-1	Design mock-up and model making	1,081	**8-3-1**	Legal service	903
8-1-2	Computer applied modeling (CAD/CAM)	24	**8-3-2**	Administrative service	124
8-2-1	Design planning	1,150	**8-3-3**	Education service	12,905
8-2-2	Studying and publishing design	2,179	**8-3-4**	Design marketing and distribution	26,202
			8-3-5	Design-related organizations	1,618
			8-3-6	Other Industrial Company Headquarters	376

(3) Sample Size

- The 2nd survey was conducted with the goal of examining about 1,800 samples of companies identified as companies utilizing design in the 1st survey.

(4) Stratifying Population and Distributing Samples

- Sampling method : The first sample was collected and investigated to identify design utilizing ; two-phase sampling is used to investigate variables of interest by sampling some of the first samples as second samples. The goal is to use the research cost and time efficiently since there is no prior information on whether the design will be used.

  Step 1) Distributing samples for companies with 300 or more employees first
  : All collected data are used for businesses with 300 or more employees by conducting a full investigation. When designing a sample, priority is given to the size of the sample recovered from the previous year's census.

  Step 2) Proportional distribution
  : Simple proportional distribution by industry type (sub-categorizing design industry classification) and worker size causes a problem that too small sample size may be assigned to some industries and worker sizes. Therefore, it was proportionally distributed to improve this drawback.

※ In principle, the distribution of samples for the 2nd survey is carried out after completing the 1st survey taking into account the population distribution of companies utilizing design in the current year, but it was designed on the basis of the survey results on use in the previous year considering the task period and survey cost. The survey was conducted directly on the companies utilizing design found in the first survey of the current year.

(5) Parameter Estimation

- Estimating industry and personnel size of companies utilizing design

  y_{ijk} : ith industry type, Observed values for the kth sample general company on the jth scale

  i : Industry number$(i=1,2,\cdots,I)$. but, $I=8$.

  j : Scale number$(j=1,2,\cdots,J)$. but, $J=6$.

  k : No. of sample companies within the region/type/scale $(k=1,2,\cdots,n_{ij})$

n_{ij} : ith industry type, Sample size of the second survey on the jth scale

$n = \sum_{i=1}^{I}\sum_{j=1}^{J} n_{ij}$: Overall sample size of the second survey

$\overline{y_{ij}} = \sum_{k=1}^{n_{ij}} y_{ijk}/n_{ij}$: ith industry type, sample mean of the jth scale

$\hat{\tau_{ij}} = \widehat{M_{ij}}\,\overline{y_{ij}}$: ith industry type, sum of samples on the jth scale

$s_{ij}^2 = \sum_{k=1}^{n_{ij}} (y_{ijk} - \overline{y_{ij}})^2/(n_{ij}-1)$: ith industry type, sample variance of the jth scale

$\hat{p_{ij}}$: ith industry type, proportion of samples on the jth scale

- Sum of population ratio τ, population mean μ, estimate of population ratio p
  - $\bar{\tau} = \sum_{i=1}^{I}\sum_{j=1}^{J} \widehat{M_{ij}}\,\overline{y_{ij}} = \sum_{i=1}^{I}\sum_{j=1}^{J}\sum_{k=1}^{n_{ij}} w_{ijk} y_{ijk}$
  - $\hat{\mu} = \sum_{i=1}^{I}\sum_{j=1}^{J} \frac{\widehat{M_{ij}}}{\widehat{M}}\overline{y_{ij}}$
  - $\hat{p} = \sum_{i=1}^{I}\sum_{j=1}^{J} \frac{\widehat{M_{ij}}}{\widehat{M}}\hat{p_{ij}}$

- Estimate for variance
  - $\widehat{Var}(\hat{\tau_{ij}}) = \widehat{M_{ij}^2}\left(1 - \frac{n_{ij}}{m_{ij}}\right)\frac{s_{ij}^2}{n_{ij}} + N_{ij}^2\left(1 - \frac{n'_{ij}}{N_{ij}}\right)\frac{s'^2_{ij}}{n'_{ij}}$

    but, $s_{ij}^2 = \frac{1}{n_{ij}-1}\sum_{k}(y_{ijk} - \overline{y_{ij}})^2$, $s'^2_{ij} = \frac{1}{N_{ij}-1}\left\{(\widehat{M_{ij}}-1)s_{ij}^2 + \frac{N_{ij} - \widehat{M_{ij}}}{N_{ij}}\widehat{M_{ij}}\overline{y_{ij}^2}\right\}$
  - $\widehat{Var}(\hat{\tau}) = \sum_{i=1}^{I}\sum_{j=1}^{J} \widehat{Var}(\hat{\tau_{ij}})$

- Weighting

  - The post-stratification method was applied for weights in the survey, 1 companies sampled by comparing the population size of N_{ij} and n_{ij} the number of companies sampled, represents $\frac{N_{ij}}{n_{ij}}$ of the population.

$$W_{ijk} = \frac{N_{ij}}{n_{ij}},\ (i\text{=industry type},\ j\text{=Employee scale})$$

3) Survey on specialized design companies

(1) Definition of Population

- Of the 2019 nationwide business surveys,
  companies classified as specialized design companies were defined as the survey population.
  - Product design (KSIC 5 units = 73202 / Design industry (small) classification = 1-7-1)
  - Visual design (KSIC 5 units = 73203 / Design industry (small) classification = 2-5-6)
  - Interior design (KSIC 5 units =73201 / Design industry (small) classification=4-10-1)
  - Fashion, textiles and other professional design (KSIC 5 units=73209 / Design industry (small) classification=5-5-1)

(2) Characteristics of Population

- The total number of specialized design companies was 7,229 (6,264 in the previous year).
- Design classification: 1,581 product design (1-7-1), 2,627 visual design (2-5-6), 2,115 interior design (4-10-1), and 906 fashion, textiles and other professional design (5-5-1). Employee number: Those with 4 or less workers showed the highest proportion with 5,815, followed by 986 for 5-9, 324 for 10-19, 83 with 20 to 49, and 21 with 50 or more.

▼ **Population of specialized design companies by industry type and scale of employee**

(Unit: Number)

Industry type		Scale of employees					
		4 or less persons	5-9 persons	10-19 persons	20-49 persons	50 or more persons	Total
Total		**5,815**	**986**	**324**	**83**	**21**	**7,229**
1-7-1	Product design	1,206	256	94	22	3	1,581
2-5-6	Visual design	2,092	367	127	34	7	2,627
4-10-1	Interior design	1,757	258	72	23	5	2,115
5-5-1	Fashion, textiles and other design	760	105	31	4	6	906

(3) Sample Size

- The sample size is affected by the sampling method, the characteristics of the population, and the stratification method, but with random sampling, the following formula is used to control the target error d of the average estimate for each statistical analysis unit.

$$n = \frac{N\,(z\,s)^2}{N\,d^2 + (z\,s)^2}$$

- N represents population size, s is the standard deviation of the variable of interest, and z is the confidence coefficient (Under 95% confidence level z=1.96). The total target sample size for this survey was about 600 (about 8.3% of the population size) considering the population size and cost. The expected sampling error for estimating the population ratio is about ±3.83%p (but, assuming p=0.5) under the 95% confidence level using a random sampling method.
  The actual sampling error is expected to be slightly smaller than this, using the stratified sampling method considering the industry type and the scale of employees in this survey. Based on the general standard, the sampling error is sufficiently acceptable.

(4) Stratifying Population and Distributing Samples

- Stratification: Industry and employee size are considered as stratification variables to enhance the characteristics of the survey content and representability of the population.

  - Industry: 4 sub-categories of the design industry
  - Employee scale 4 or less, 5 to 9, 10 to 19, 20 to 49, 50 or more

Step 1) Allocating a full investigation
: Allocating priority distribution to businesses with 50 or more employees in each industry

Step 2) Proportional distribution of variance (Square root of population)
: Simple proportional distribution by industry type (sub-categorizing design industry classification) and employee scale causes a problem that too small sample size may be assigned to some industries and worker sizes. Therefore, it was proportionally distributed to improve this drawback.

Step 3) Proportional distribution by region (*Applies to plan from 2020)
: Additional samples are allocated in a proportional distribution by region regardless of the industry type and the employee scale.

▾ **Sample distribution by industry type and scale of specialized design companies** (Unit: Number)

Industry type		Scale of employee					
		4 or less persons	5-9 persons	10-19 persons	20-49 persons	50 or more persons	Total
Total		**329**	**135**	**77**	**38**	**21**	**600**
1-7-1	Product design	76	35	21	10	3	145
2-5-6	Visual design	100	42	25	13	7	187
4-10-1	Interior design	92	35	19	11	5	162
5-5-1	Fashion, textiles and other design	61	23	12	4	6	106

▾ **Sample distribution by region for specialized design companies** (Unit: Number)

Division	Seoul/ Gyeonggi/ Incheon	Busan/Ulsan/ Gyeongnam	Daegu/ Gyeongbuk	Gwangju/ Jeolla	Daejeon/ Chungcheong	Gangwon/ Jeju	Total
Population	4,954	698	404	519	433	221	7,229
Sample distribution	**411**	**58**	**34**	**43**	**36**	**18**	**600**

(5) Parameter Estimation

- Parameter estimation of specialized design companies
  Estimated values and standard errors for parameters of specialized design companies are calculated taking into account the sampling rate by industry and employee scale.
  y_{ijk} : Observed value (response to each question)
  i : Industry type number $(i=1, 2, \cdots, I)$. but,$I=4$.
  j : Scale number $(j=1, 2, \cdots, J)$. but,$J=5$.
  k : No. of sample specialized design company within industry type/scale $(k=1, 2, \cdots, n_{hij})$
  (In other words, y_{ijk} is the observed value of the kth sample specialized design company of the ith industry type and jth scale.)
  n_{ij} : Sample size of the ith industry type and jth scale
  N_{ij} : Population size of the ith industry type and jth scale

$n=\sum_{i=1}^{I}\sum_{j=1}^{J} n_{ij}$: Overall sample size, $N=\sum_{i=1}^{I}\sum_{j=1}^{J} N_{ij}$: Overall population size

$\overline{y_{ij}}=\sum_{k=1}^{n_{ij}} y_{ijk}/n_{ij}$: Sample mean of the ith industry type and jth scale

$\widehat{\tau_{ij}}=N_{ij}\overline{y_{ij}}$: Sample sum of the ith industry type and jth scale

$s_{ij}^2=\sum_{k=1}^{n_{ij}}(y_{ijk}=\overline{y_{ij}})^2/(n_{ij}-1)$: Sample distribution of the ith industry type and jth scale

$\widehat{p_{ij}}$: Sample proportion of the ith industry type and jth scale

- Estimate and variance of the population proportion sum τ
  - $\hat{\tau}=\sum_{i=1}^{I}\sum_{j=1}^{J} N_{ij}\overline{y_{ij}}$
  - $\widehat{Var}(\hat{\tau})=\sum_{i=1}^{I}\sum_{j=1}^{J} N_{ij}^2\left(\frac{N_{ij}-n_{ij}}{N_{ij}}\right)\frac{s_{ij}^2}{n_{ij}}$

- Estimate and variance of the population mean μ
  - $\hat{\mu}=\sum_{i=1}^{I}\sum_{j=1}^{J} \frac{N_{ij}}{N}\overline{y_{ij}}$
  - $\widehat{Var}(\hat{\mu})=\sum_{i=1}^{I}\sum_{j=1}^{J}\left(\frac{N_{ij}}{N}\right)^2\left(\frac{N_{ij}-n_{ij}}{N_{ij}}\right)\frac{s_{ij}^2}{n_{ij}}$

- Estimate and variance of the population proportion p
  - $\hat{p}=\sum_{i=1}^{I}\sum_{j=1}^{J} \frac{N_{ij}}{N}\overline{y_{ij}}$ - $\widehat{Var}(\hat{p})=\sum_{i=1}^{I}\sum_{j=1}^{J}\left(\frac{N_{ij}}{N}\right)^2\left(\frac{N_{ij}-n_{ij}}{N_{ij}}\right)\frac{\widehat{p_{ij}}(1-\widehat{p_{ij}})}{n_{ij}-1}$

05 Relative Standard Error of Main Items

[Scope of disclosure of major items]

- The results of the survey are announced by dividing them into industry type, scale, region. When publishing, the relative standard errors for key variables are presented.
- The main items of this survey are as follows:
  - Survey on the use of general companies (1st survey): the Design Utilization Rate
  - Survey of companies utilizing design (2nd survey): Design investment, number of designers
  - Survey of specialized design companies: Sales, number of employees, number of designers

▼ **Relative standard error* of the Design Utilization Rate (1st survey)**

Classification		Mean	Sample error	Confidence interval			Relative standard error
All		**0.39**	**±0.00**	**0.39**	**~**	**0.40**	**0.84%p**
Industry type	Product design	0.34	±0.01	0.33	~	0.34	1.98%p
	Visual design	0.45	±0.01	0.44	~	0.46	2.27%p
	Digital/Multimedia design	0.65	±0.02	0.63	~	0.67	2.45%p
	Space design	0.33	±0.01	0.32	~	0.34	2.02%p
	Fashion/textile design	0.45	±0.01	0.43	~	0.46	2.97%p
	Service/experience design	0.43	±0.01	0.42	~	0.44	2.38%p
	Industrial craft design	0.28	±0.01	0.27	~	0.29	3.87%p
	Design infrastructure (design-based technology)	0.45	±0.01	0.44	~	0.46	1.96%p
Region	Seoul	0.53	±0.01	0.52	~	0.53	1.27%p
	Incheon/Gyeonggi/Gangwon	0.37	±0.01	0.37	~	0.38	1.54%p
	Busan/Ulsan/Gyeongnam	0.31	±0.01	0.31	~	0.32	2.69%p
	Daegu/Gyeongbuk	0.35	±0.01	0.34	~	0.36	3.08%p
	Gwangju/Jeolla/Jeju	0.35	±0.01	0.34	~	0.36	3.22%p
	Daejeon/Sejong/Chungcheong	0.36	±0.01	0.35	~	0.37	2.84%p
Scale	Major enterprise	0.54	±0.01	0.53	~	0.56	2.22%p
	Mid-sized enterprise	0.48	±0.02	0.46	~	0.50	4.06%p
	medium enterprise	0.47	±0.01	0.47	~	0.48	1.34%p
	Small-sized enterprise	0.37	±0.00	0.37	~	0.38	1.10%p

* Calculates the mean and deviation by converting the design utilization to ‘1’ and non-use of design to ‘0’

▼ Relative standard error of design investment by companies utilizing design (2nd survey) (Unit : KRW million)

Division		Mean	Sample error	Confidence interval			Relative standard error
All		**88.66**	**±19.42**	**69.24**	**~**	**108.08**	**21.91%p**
Industry type	Product design	147.43	±113.53	33.90	~	260.96	77.00%p
	Visual design	150.58	±14.84	135.74	~	165.41	9.85%p
	Digital/Multimedia design	142.94	±17.85	125.09	~	160.79	12.49%p
	Space design	78.51	±7.48	71.03	~	85.99	9.53%p
	Fashion/textile design	98.90	±16.29	82.61	~	115.18	16.47%p
	Service/experience design	92.03	±11.58	80.45	~	103.62	12.59%p
	Industrial craft design	52.47	±8.32	44.15	~	60.79	15.85%p
	Design infrastructure (design-based technology)	53.69	±12.07	41.62	~	65.75	22.48%p
Region	Seoul	106.83	±28.95	77.88	~	135.79	27.10%p
	Incheon/Gyeonggi/Gangwon	82.57	±47.73	34.84	~	130.30	57.80%p
	Busan/Ulsan/Gyeongnam	62.63	±9.36	53.28	~	71.99	14.94%p
	Daegu/Gyeongbuk	65.36	±10.01	55.34	~	75.37	15.32%p
	Gwangju/Jeolla/Jeju	68.30	±12.01	56.29	~	80.31	17.58%p
	Daejeon/Sejong/Chungcheong	51.56	±6.96	44.61	~	58.52	13.49%p
Scale	Major enterprise	1,531.07	±1,417.51	113.56	~	2,948.58	92.58%p
	Mid-sized enterprise	570.65	±126.87	443.78	~	697.52	22.23%p
	medium enterprise	120.92	±8.42	112.50	~	129.34	6.96%p
	Small-sized enterprise	60.87	±2.43	58.45	~	63.30	3.99%p
Recruitment of designers	Recruitment of designers	137.46	±29.20	108.26	~	166.66	21.24%p
	Non-recruitment of designers	8.01	±1.58	6.43	~	9.59	19.74%p
Design outsourcing service	Outsourcing service available	47.93	±44.52	3.40	~	92.45	92.90%p
	Outsourcing service not available	123.20	±6.43	116.76	~	129.63	5.22%p

▼ **Relative standard error of number of designers by companies utilizing design (2nd survey)** (Unit : persons)

Division		Mean	Sample error	Confidence interval			Relative standard error
All		**1.82**	**±0.24**	**1.57**	**~**	**2.06**	**13.40%p**
Industry type	Product design	2.10	±1.40	0.70	~	3.50	66.77%p
	Visual design	2.22	±0.14	2.08	~	2.36	6.35%p
	Digital/Multimedia design	3.29	±0.39	2.90	~	3.68	11.85%p
	Space design	1.94	±0.16	1.78	~	2.10	8.15%p
	Fashion/textile design	2.26	±0.30	1.96	~	2.56	13.17%p
	Service/experience design	2.07	±0.28	1.78	~	2.35	13.72%p
	Industrial craft design	1.36	±0.18	1.17	~	1.54	13.45%p
	Design infrastructure (design-based technology)	1.25	±0.12	1.13	~	1.37	9.64%p
Region	Seoul	2.24	±0.34	1.89	~	2.58	15.37%p
	Incheon/Gyeonggi/Gangwon	1.56	±0.62	0.94	~	2.18	39.67%p
	Busan/Ulsan/Gyeongnam	1.18	±0.15	1.03	~	1.33	12.68%p
	Daegu/Gyeongbuk	1.46	±0.19	1.27	~	1.64	12.78%p
	Gwangju/Jeolla/Jeju	1.72	±0.21	1.51	~	1.92	12.04%p
	Daejeon/Sejong/Chungcheong	1.08	±0.11	0.97	~	1.20	10.62%p
Size	Major enterprise	18.66	±17.48	1.18	~	36.14	93.68%p
	Mid-sized enterprise	9.63	±1.62	8.01	~	11.25	16.84%p
	medium enterprise	2.52	±0.17	2.35	~	2.68	6.58%p
	Small-sized enterprise	1.37	±0.05	1.33	~	1.42	3.35%p
Design outsourcing service	Outsourcing service available	0.66	±0.55	0.11	~	1.21	83.31%p
	Outsourcing service not available	2.80	±0.10	2.70	~	2.89	3.48%p

▼ **Relative standard error of sales of specialized design companies** (Unit : KRW million)

Division		Mean	Sample error	Confidence interval			Relative standard error
All		**607.24**	**±66.37**	**540.87**	**~**	**673.61**	**10.93%p**
Industry type	Product design	581.26	±166.51	414.75	~	747.77	28.65%p
	Visual design	353.38	±38.94	314.45	~	392.32	11.02%p
	Interior design	949.98	±165.68	784.30	~	1,115.66	17.44%p
	Other fashion textiles design	588.52	±152.95	435.56	~	741.47	25.99%p
Region	Seoul	644.11	±74.37	569.74	~	718.48	11.55%p
	Incheon/Gyeonggi/Gangwon	784.94	±351.16	433.78	~	1,136.11	44.74%p
	Busan/Ulsan/Gyeongnam	533.89	±93.45	440.43	~	627.34	17.50%p
	Daegu/Gyeongbuk	418.32	±129.94	288.38	~	548.25	31.06%p
	Gwangju/Jeolla/Jeju	434.07	±74.48	359.59	~	508.55	17.16%p
	Daejeon/Sejong/Chungcheong	392.27	±71.74	320.53	~	464.01	18.29%
Size	1 person	146.11	±20.79	125.32	~	166.90	14.23%p
	2~4 persons	515.37	±97.53	417.84	~	612.89	18.92%p
	5~9 persons	895.99	±64.74	831.26	~	960.73	7.23%p
	10~14 persons	1,668.49	±159.96	1,508.53	~	1,828.45	9.59%p
	15 or more persons	4,365.33	±566.26	3,799.07	~	4,931.59	12.97%p
Sales composition	Sales in design 50%↑	595.63	±69.16	526.47	~	664.79	11.61%p
	Other sales 50%↑	657.55	±168.87	488.68	~	826.42	25.68%p
	Half and half	323.20	±357.13	-33.93	~	680.33	110.50%p

▼ **Relative standard error of number of employees of specialized design companies** (Unit : persons)

Division		Mean	Sample error	Confidence interval			Relative standard error
All		**3.98**	**±0.56**	**3.42**	**~**	**4.55**	**14.18%p**
Industry type	Product design	4.24	±0.48	3.76	~	4.72	11.34%p
	Visual design	3.73	±0.37	3.36	~	4.10	9.83%p
	Interior design	4.27	±1.92	2.36	~	6.19	44.87%p
	Other fashion textiles design	3.57	±0.74	2.83	~	4.31	20.75%p
Region	Seoul	4.45	±0.99	3.46	~	5.44	22.32%p
	Incheon/Gyeonggi/Gangwon	3.03	±0.46	2.57	~	3.48	15.10%p
	Busan/Ulsan/Gyeongnam	3.78	±0.41	3.37	~	4.19	10.84%p
	Daegu/Gyeongbuk	4.29	±0.94	3.34	~	5.23	21.99%p
	Gwangju/Jeolla/Jeju	3.76	±0.68	3.09	~	4.44	17.99%p
	Daejeon/Sejong/Chungcheong	2.79	±0.44	2.36	~	3.23	15.60%p
Size	1 person	1.00	±0.00	1.00	~	1.00	0.00%p
	2~4 persons	2.86	±0.06	2.81	~	2.92	1.92%p
	5~9 persons	6.24	±0.08	6.16	~	6.32	1.30%p
	10~14 persons	11.77	±0.14	11.63	~	11.91	1.22%p
	15 or more persons	35.79	±6.97	28.82	~	42.77	19.49%p
Sales composition	Sales in design 50%↑	3.62	±0.24	3.38	~	3.86	6.67%p
	Other sales 50%↑	5.13	±2.15	2.98	~	7.28	41.85%p
	Half and half	4.19	±1.27	2.93	~	5.46	30.21%p

▼ Relative standard error of number of designers of specialized design companies (Unit : persons)

Division		Mean	Sample error	Confidence interval			Relative standard error
All		**2.38**	**±0.10**	**2.29**	**~**	**2.48**	**4.06%p**
Industry type	Product design	2.70	±0.19	2.51	~	2.89	7.04%p
	Visual design	2.50	±0.20	2.29	~	2.70	8.07%p
	Interior design	2.20	±0.15	2.05	~	2.36	6.93%p
	Other fashion textiles design	1.91	±0.20	1.71	~	2.11	10.44%p
Region	Seoul	2.52	±0.14	2.37	~	2.66	5.76%p
	Incheon/Gyeonggi/Gangwon	1.87	±0.15	1.72	~	2.02	7.86%p
	Busan/Ulsan/Gyeongnam	2.40	±0.24	2.16	~	2.64	9.85%p
	Daegu/Gyeongbuk	2.91	±0.53	2.38	~	3.45	18.36%p
	Gwangju/Jeolla/Jeju	2.46	±0.31	2.15	~	2.77	12.58%p
	Daejeon/Sejong/Chungcheong	1.98	±0.27	1.70	~	2.25	13.82%p
Size	1 person	1.00	±0.00	1.00	~	1.00	0.00%p
	2~4 persons	2.01	±0.06	1.94	~	2.07	3.17%p
	5~9 persons	3.90	±0.12	3.78	~	4.03	3.18%p
	10~14 persons	6.61	±0.34	6.27	~	6.95	5.17%p
	15 or more persons	10.89	±0.68	10.21	~	11.57	6.23%p
Sales composition	Sales in design 50%↑	2.47	±0.12	2.35	~	2.59	4.94%p
	Other sales 50%↑	2.08	±0.13	1.95	~	2.22	6.32%p
	Half and half	2.83	±0.86	1.97	~	3.69	30.46%p

▪ Standard relative sampling error of the sample survey by Statistics Canada

- 0.00% ~ 4.99% : Excellent
- 5.00% ~ 9.99% : Very Good
- 10.00% ~ 14.99% : Good - 15.00% ~ 24.99% : Acceptable
- 25.00% ~ 34.99% : Use with Caution
- 35.00% or more: Too Unreliable to Publish

PART 2
Key Findings of the Survey

01 Size of Design Industry

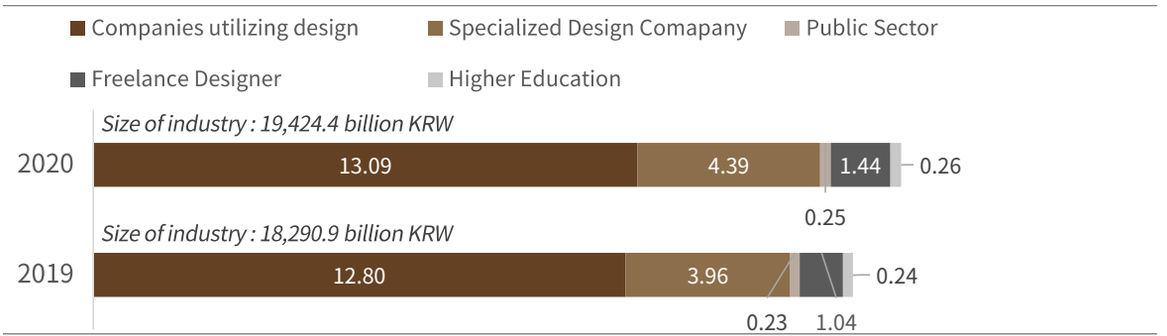
1) Size and manpower of design industry

- Size of design industry in 2020: 19,424.4 billion KRW

  The size is estimated by adding up the amount of design investments by companies utilizing design (13,857 billion KRW[3]), sales by specialized design companies (4,389.7 billion KRW[4]), budget for design departments in the public sector (250.1 billion KRW), size of freelancers industry (1,441.4 billion KRW) and higher education (257.5 billion KRW)

  * Design investment amount excluding service cost (638.7 billion won) for design companies.

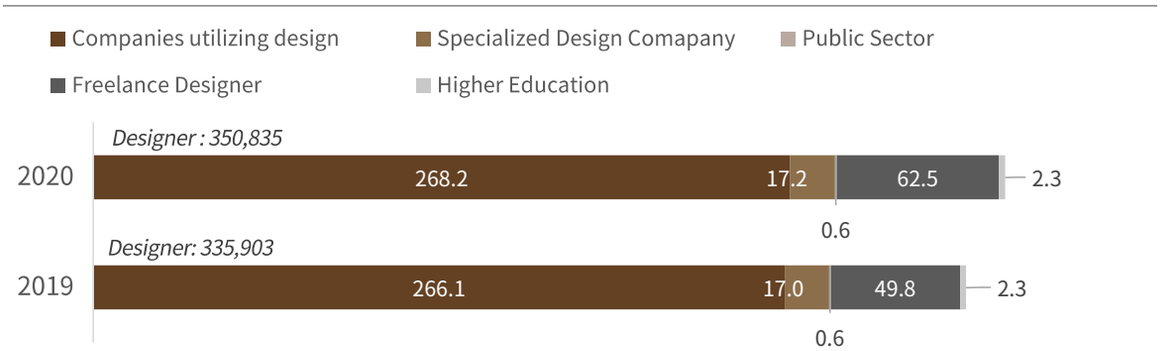
Size of design industry (Unit : Trillion KRW)



- Design manpower: 350,835

  The amount was estimated by adding up the number of designers at companies that utilize design (268,176), employees at specialized design companies (17,217), employees at design departments in the public sector (588), the number of freelancers (62,516) and professors at design-related university (2,337).

Manpower of design industry (Unit : Thousand people)



3) Size of Companies in general : No. of companies utilizing design (Estimates) × Avg. of amount of design investments (Survey Results, Exclude Excludes service fee for specialized design company)

4) Size of specialized design companies industry : Average amount of specialized design companies' sale (Sample Survey Results) × Number of Populations (Designers specialized in 2018 Census on Establishment)

▾ Size and manpower of design industry

(Unit : Million KRW, Persons)

Classification		2019		2020		YoY	
		Size of design industry	Design Manpower	Size of design industry	Design Manpower	Size of design industry	Design Manpower
Survey of Actual conditions	Companies utilizing design	12,808,262	266,075	13,085,678	268,176	2.2%	0.8%
	Specialized design companies	3,962,759	17,026 *(25,284)	4,389,712	17,217 *(28,775)	10.8%	1.1%
	Public Sector	230,881 **(35,144)	621	250,095 **(24,723)	588	8.3%	-5.3%
Subtotal		**17,001,902** **(16,806,165)	**283,722** *(291,980)	**17,725,484** **(17,500,112)	**285,982** *(297,540)	4.3%	0.8%
Literature	Freelancers	1,040,812	49,847	1,441,433	62,516	38.5%	25.4%
	Higher education	248,212	2,333	257,455	2,337	3.7%	0.2%
Subtotal		**1,289,024**	**52,180**	**1,698,888**	**64,853**	3.1%	3.8%
Total		18,290,926 **(18,095,189)	335,903 *(344,161)	19,424,373 **(19,199,001)	350,835 *(362,393)	6.2%	4.4%

* The number of employees in specialized design companies including those who are not designers

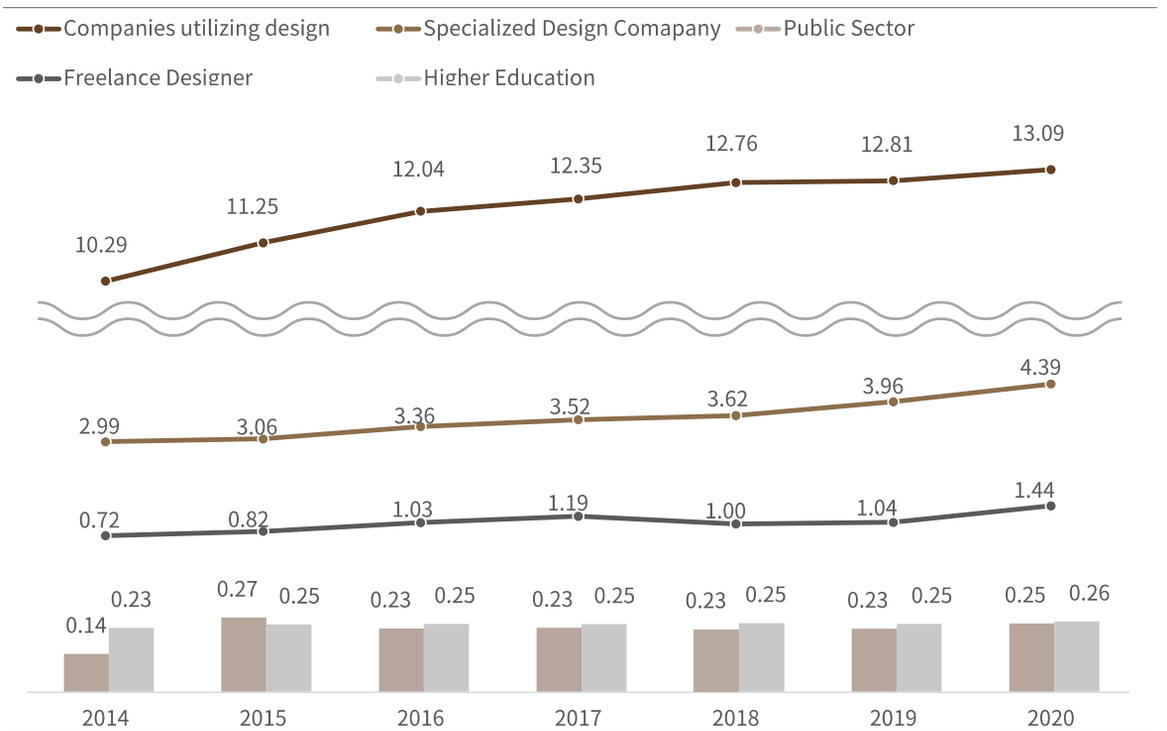
** Size of industry estimated by deducting service charges of public sector

2) Changes in the Size of Design Industry

- The size of the design industry is continuously increasing, and the total industry size in 2020 is estimated at 13.09 trillion KRW.

  Of the total size, the industry size of companies utilizing design accounts for the largest share of the industry with more than 70% annually, but the freelance industry is estimated to have grown the most(1.04 trillion KRW → 1.44 trillion KRW) compared to 2019.

▾ Changes in size of design industry from 2012 to 2019 (Unit : Trillion KRW)



▾ Changes in size of design industry (Unit : Million KRW))

Classification	2014	2015	2016	2017	2018	2019	2020
Companies utilizing design	10,292,018	11,252,597	12,041,094	12,348,980	12,758,020	12,808,262	**13,085,687**
Specialized Design companies	2,990,423	3,059,925	3,357,819	3,524,707	3,624,542	3,962,759	**4,389,712**
Public Sector	138,281 *(17,782)	271,727 *(36,709)	232,050 *(43,120)	234,287 *(42,944)	229,214 *(31,988)	230,881 *(35,144)	**250,095** *(24,723)
Subtotal	**13,420,722** *(13,300,223)	**14,584,249** *(14,349,231)	**15,630,964** *(15,442,034)	**16,107,975** *(15,916,632)	**16,611,776** *(16,414,550)	**17,001,902** *(16,806,165)	**17,725,484** *(17,500,112)
Freelances	715,641	820,990	1,034,235	1,189,519	999,053	1,040,812	1,441,433
Higher Education	233,758	246,359	248,517	247,577	251,733	248,212	257,455
Total	**14,370,121** *(14,249,622)	**15,651,598** *(15,416,580)	**16,913,716** *(16,724,786)	**17,545,071** *(17,353,728)	**17,862,562** *(17,665,336)	**18,290,926** *(18,095,189)	**19,424,373** *(19,199,001)

* Size of public sector industry excluding design service costs ordered by design specialists, etc.

02 Design Industry Size by Survey Target

1) Size and Manpower of Companies utilizing design

(1) Design Utilization Rate

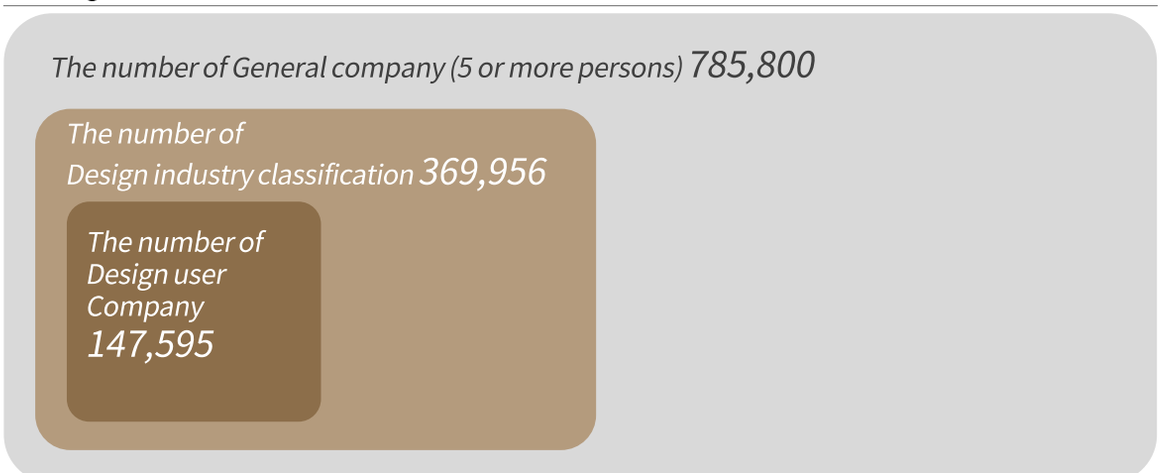
- (Based on companies with 5 or more employees)
  out of 785,000 companies with 5 or more employees, the number of companies utilizing design is 147,595 and the design utilization rate is 18.8%.
- (Based on Special Design Classification) The design utilization rate of 369,956 companies that fall under Special Design Classification is 39.9%.

▾ **Changes in the percentage of companies utilizing design**

Classification	2019		2020	
	Company with five or more employees	Company with five or more employees under Special Design Classification	Company with five or more employees	Company with five or more employees under Special Design Classification
Design Utilization Rate	17.2%	37.1%	**18.8%**	**39.9%**

* Calculation of design utilization rate excludes specialized design companies.

▾ **Design Utilization Rate**



- The findings suggest that of companies utilizing design 22.9% are companies with design department, 50.6% are companies employing designers, and 54.3% are design outsourcing companies.

▾ **Design utilization rate and designer recruitment rate (survey results of using general companies)[5)]**

Companies Utilizing Design	Companies with design department	Companies employing designers	Companies outsourcing design service
147,595	33,745(22.9%)	74,656 (50.6%)	80,106 (54.3%)

▾ **Design Utilization Rate of companies with 5 or more employees** (Unit : Number)

Classification		No. of companies		Design Utilization Rate
		Company with five or more employees*	Company utilizing design	
KSIC	Agriculture, forestry and fishing	1,992	252	12.7%
	Mining	555	-	0.0%
	Manufacturing	161,922	40,748	25.2%
	Electricity, gas, steam, and water services	920	-	0.0%
	sewage and waste disposal, raw material recycling	4,454	-	0.0%
	Construction	72,345	20,056	27.7%
	Wholesale and retail sale	135,683	27,159	20.0%
	Transportation	23,610	2,036	8.6%
	Accommodation and restaurant business	116,198	66	0.1%
	Publishing, video, broadcast communications and information services	16,116	9,990	62.0%
	Financial service and insurance activities	28,623	7,177	25.1%
	Real estate activities and renting and leasing	13,860	2,716	19.6%
	Professional, scientific and technical services	39,675	11,076	27.9%
	Business facilities and management and business support services	22,223	6,423	28.9%
	Public administration, defense and social security administration	285	88	30.9%
	Education services	35,759	12,000	33.6%
	Health and social work services	73,485	4,159	5.7%
	Arts, sports and recreation related services	13,927	1,512	10.9%
	Membership organizations, repair and other personal services	24,168	2,135	8.8%
Scale	Small companies	639,723	112,519	17.6%
	Medium companies	139,676	33,517	24.0%
	Large companies	6,401	1,558	24.3%
Total		**785,800**	**147,595**	**18.8%**

5) In the 2nd survey, sampling is conducted based on the industry type and size, not the standard for design utilization of the 1st survey. Therefore, the results of the design utilization criteria such as design department, designer employment, and design outsourcing service order in the survey for using general companies (1st survey) are different from those of the survey on companies utilizing design(2nd survey).

▾ **Design utilization rate in the special design classification** (Unit : Number)

Classification		No. of companies		Design Utilization Rate
		Company with 5 or more employees under Special design classification	Companies utilizing design	
Type	Product design	55,456	18,928	34.1%
	Visual design	21,841	10,061	46.1%
	Digital/multimedia design	7,540	4,916	65.2%
	Space design	90,915	30,535	33.6%
	Fashion/textile design	12,476	5,653	45.3%
	Service/experience design	58,097	25,227	43.4%
	Industrial craft design	19,829	5,713	28.8%
	Design infrastructure (design-based technology)	103,802	46,562	44.9%
Scale	Small companies	296,795	112,465	37.9%
	Medium companies	61,702	29,471	47.8%
	Midsize companies	8,598	4,101	47.7%
	Large companies	2,861	1,588	54.5%
Total		**369,956**	**147,595**	**39.9%**

(2) Size of design industry of companies utilizing design

- Average amount of design investment by companies that utilize design is estimated at 88.66 million KRW and the industry size is estimated at 13,857 billion KRW.
- Regarding industry size, Product design (2,790.6 billion KRW) is the highest, followed by Design infrastructure (2,499.7 billion KRW), Service/ experience design (2,321.7 billion KRW), Space design (2,397.2 billion KRW).
- The average amount of design investment by industry type is the highest in Visual design with 150.58 million KRW, followed by Product design(147.43 million KRW), Digital/multimedia design (142.94 million KRW).
- By size, the average amount of design investment in Small companies is 60.87 million KRW, Medium companies is 120.92 million KRW, in Midsize companies is 570.65 million KRW, in large companies is 1,531.07 million KRW, which means that the larger size, the higher average amount of design investment

▾ **Size of design industry of companies utilizing design** (Unit : Number, Million KRW)

Classification		2019			2020			YoY
		No. of companies utilizing design	Average amount of design investment	Industry Size	No. of companies utilizing design	Average amount of design investment	Industry Size	
Type	Product design	17,069	165.72	2,828,726	18,928	147.43	2,790,575	-1.3%
	Visual design	9,963	156.98	1,563,918	10,061	150.58	1,515,006	-3.1%
	Digital/multimedia design	4,470	139.91	625,449	4,916	142.94	702,634	12.3%
	Space design	25,704	83.94	2,157,702	30,535	78.51	2,397,195	11.1%
	Fashion/textile design	5,055	109.57	553,914	5,653	98.90	559,047	0.9%
	Service/experience design	29,372	78.41	2,303,196	25,227	92.03	2,321,731	0.8%
	Industrial craft design	5,038	52.00	261,956	5,713	52.47	299,751	14.4%
	Design infrastructure	45,300	55.48	2,513,401	46,562	53.69	2,499,739	-0.5%
Scale	Small companies	111,256	57.90	6,441,470	113,093	60.87	6,884,256	6.9%
	Medium companies	28,203	141.94	4,003,179	32,036	120.92	3,873,884	-3.2%
	Midsize companies	1,451	705.91	1,024,305	1,507	570.65	860,249	-16.0%
	Large companies	1,062	1,260.89	1,339,308	958	1,531.07	1,467,289	9.6%
Total		**141,971**	**90.22**	**12,808,262**	**147,595**	**88.66**	**13,085,678**	**2.2%**

(3) Design manpower in companies utilizing design

▪ The average number of designers in companies utilizing design is 1.82, and the number of manpower is estimated to be 268,176. The average number of designers in companies that hire designers is 2.92.

- The number of manpower in design industry by industry type is highest in Space design (59,164), followed by Design infrastructure(58,153).
- By size, the average number of manpower is highest in Large companies(18.66), followed by Small companies(1.37). (As for the average design manpower by size, large companies had the highest with 18.66 and small companies with 1.37)

▾ **Design manpower in companies utilizing design** (Unit : Persons)

Classification		2019			2020			YoY
		Avg. no. of designers in companies employing designers	Avg. no. of designers in companies utilizing design	Manpower	Avg. no. of designers in companies employing designers	Avg. no. of designers in companies utilizing design	Manpower	
Type	Product design	3.23	2.62	40,311	3.47	2.10	39,698	-1.5%
	Visual design	2.94	2.52	23,932	2.82	2.22	22,296	-6.8%
	Digital/multimedia design	3.31	2.69	13,753	3.57	3.29	16,183	17.7%
	Space design	3.22	2.30	56,359	2.85	1.94	59,164	5.0%
	Fashion/textile design	2.92	2.46	12,958	2.51	2.26	12,786	-1.3%
	Service/experience design	2.46	1.88	51,097	3.88	2.07	52,148	2.1%
	Industrial craft design	1.79	1.48	7,591	1.87	1.36	7,748	2.1%
	Design infrastructure	1.67	1.40	60,075	2.36	1.25	58,153	-3.2%
Scale	Small companies	1.83	1.39	154,320	2.22	1.37	155,204	0.6%
	Medium companies	3.63	2.80	79,006	3.93	2.52	80,572	2.0%
	Midsize companies	15.72	11.82	17,152	12.59	9.63	14,518	-15.4%
	Large companies	33.86	14.68	15,596	55.84	18.66	17,882	14.7%
Total		**2.47**	**1.87**	**266,075**	**2.92**	**1.82**	**268,176**	**0.8%**

2) Size and Manpower of Specialized Design Companies

(1) Size of Specialized Design Companies

- The size of the specialized design companies is estimated to be 4,389.7 billion KRW, which shows an increase 10.8% from 2019.

  Meanwhile, the number of specialized design companies is 7,229, which shows an increase 15.4% from 2019 (6,264). By industry type, the number of interior design companies increased significantly(1,613 → 2,115).

- Examining the size of specialized design industry by industry type, Interior design is the highest with 2,009.2 billion KRW.

▾ **Size of specialized design industry** (Unit : Number, Million KRW)

Classification		2019			2020			YoY
		No. of companies	Average sales	Size of industry	No. of companies	Average sales	Size of industry	
Type	Product design	1,437	706.52	1,015,276	1,581	581.26	918,971	-9.5%
	Visual design	2,346	419.97	985,244	2,627	353.38	928,340	-5.8%
	Interior design	1,613	883.14	1,424,502	2,115	949.98	2,009,206	41.0%
	Other types of fashion/ textile design	868	619.51	537,737	906	588.52	533,195	-0.8%
Total		**6,264**	**632.62**	**3,962,759**	**7,229**	**607.24**	**4,389,712**	**10.8%**

(2) Design manpower in specialized design companies

- Average number of employees in specialized design companies is 2.38 and the overall manpower in the industry is estimated to be 17,217. Compared to the previous year, the number of companies shows an increase, and manpower increases 1.1%.
- The manpower of every type of business shows an decrease except Interior design(3,768 → 4,663).

▾ **Design manpower in specialized design companies** (Unit : Number, Persons)

Classification		2019			2020			YoY
		No. of companies	Average No. of employees	Manpower	No. of companies	Average No. of employees	Manpower	
Type	Product design	1,437	3.12	4,487	1,581	2.70	4,268	-4.9%
	Visual design	2,346	2.96	6,952	2,627	2.50	6,555	-5.7%
	Interior design	1,613	2.34	3,768	2,115	2.20	4,663	23.8%
	Other types of fashion/ textile design	868	2.10	1,818	906	1.91	1,731	-4.8%
Total		**6,264**	**2.72**	**17,026**	**7,229**	**2.38**	**17,217**	**1.1%**

3) Size and Manpower of Public Sector

- The budget for design departments of central government is 81.1 billion KRW, local government budget for design departments is 169.0 billion KRW and the total design budget in the public sector is estimated to be 250.1 billion KRW, a slight increase from the previous year (230.9 billion KRW).
- The number of employees in design departments of the central government is 25, and that of employees in design departments in local governments is 563. By adding these figures, the total number of design-related employees in the public sector is 588, a decrease from the previous year.

▾ **Design investment and manpower in public sector** (Unit : Million KRW, Persons)

Classification	2019		2020	
	Total budget for design department	Total number of employees in design departments	Total budget for design department	Total number of employees in design departments
Central government	66,623 *(2,250)	46	81,069 *(2,064)	25
Local government	164,258 *(32,894)	575	169,026 *(22,659)	563
Total	**230,881** ***(35,144)**	**621**	**250,095** ***(24,723)**	**588**

4) Size and Manpower of Freelancers

No. of freelancers Equation for estimation

Estimated no. of employees in Specialized design companies & Designers in companies in general × (No. of designers who are individual Proprietors with no employees / Total number of designers)

▪ The number of freelance designers is 62,516, which shows an increase compared to 2019(49,847).

- No. of freelancers 62,516 = (No. of employees in specialized design companies 28,775 + No. of designers in companies in general 268,176)*21.1%

※ Designers(Regional Employment Survey Code : 285) who are individual proprietors without employees / Total no. of designers : 21.1%

▾ **Freelance designer Employment Status**

Classification	Individual proprietors with no employees	Other Designers (Full-time employees, Temporary employees, Daily employed and Individual proprietors with employees, Unpaid family workers)	Total
Status	**48,674 (21.1%)**	182,527 (78.9%)	231,201 (100.0%)

Size of freelance designer industry Equation for estimation

Estimated number of Freelance designers × Average monthly wage for freelance designers × 12 months

• Size of freelance designer industry is 1,441.4 billion KRW, an increase compared to the previous year.

- Size of freelance designer industry 1,441.4 billion KRW

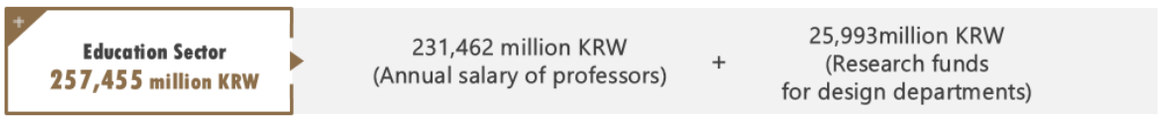
= 62,516 × Average monthly wage for freelancers 1,920,000 KRW × 12 months

※ Average monthly wage for freelance designers is estimated by using the result of Regional Employment Survey.

▾ **Change of Freelance designer**

Classification	2019	2020	YoY
Number of freelance designers	49,847	**62,516**	25.4%
Size of freelance designer industry	1,040.8 billion KRW	**1,441.4 billion KRW**	38.5%

5) Size and Manpower of Educations Sector



- Size of industry in the higher education sector is 257,455 million KRW.
  Size of manpower is obtained by adding up the annual salary of professors 231,462 million KRW and research funds for design departments 259,093 million KRW.
  ※ Size of manpower is obtained by adding up the numbers of professors, associate professors, assistant professors and full-time lecture[6] in design-related departments of junior colleges and four-year universities/colleges.

▾ Annual salary of professors of design department

(Unit : Million KRW, Persons)

Classification		2019			2020		
		Average annual salary	No. of design faculty	Estimated annual salary of design faculty	Average annual salary	No. of design faculty	Estimated annual salary of design faculty
Four-year Colleges/ Universities	Professor	118.3	734	**86,804**	121.8	717	**87,337**
	Associate professor	98.8	337	**33,300**	101.8	331	**33,688**
	Assistant professor	83.0	404	**33,517**	85.5	426	**36,402**
	Full-time lecturers	62.2	113	**7,013**	64.0	102	**6,531**
Subtotal		**-**	**1,588**	**160,634**	-	**1,576**	**163,958**
Junior Colleges	Professor	112.2	220	**24,682**	115.6	219	25,307
	Associate professor	91.5	206	**18,850**	94.3	214	20,170
	Assistant professor	74.4	195	**14,512**	76.7	204	15,637
	Full-time lecturers	50.0	125	**6,237**	51.5	124	6,389
Subtotal		**-**	**746**	**64,281**	**-**	**761**	**67,503**
Total		**-**	**2,333**	**224,915**	**-**	**2,337**	**231,462**

※ Annul salary of professors of design department and number of design faculty is calculated by using KEDI Educational Statistics Database.

▾ Research funds for design department

(Unit : Million KRW)

Classification		2019	2020	YoY
Four-year Colleges/ Universities	Central government fund	10,115	12,332	21.9%
	Local government fund	1,812	3,322	83.3%
	Private fund	5,789	5,771	-0.3%
	Foreign fund	10	30	200.0%
	Domestic fund	3,831	3,279	-14.4%
Subtotal		**21,557**	**24,734**	**14.7%**
Junior Colleges	Faculty	1,740	1,259	-27.6%
Total		**23,297**	**25,993**	**11.6%**

※ Refer to the result of the 2020 Survey of University Research Activities report.

6) Full-time faculty included dean, professor, associate professor, assistant professor, and full-time lecturers until 2012. However, since 2013, the `Full-time Lecturer System' was abolished, Full-time faculty includes Assistant professors include dean, professor, associate professor, assistant professor, excluding full-time lecturers. Non-full-time lecturer includes adjunct professors, visiting professors, part-time lecturers, honorary professors, visiting professors, Honorary Professor, and others. guest professors, and others
The number of full-time lecturers was not provided in the KEDI Educational Statistics Database, and was thus estimated using the rate of change in the number of registered students between 2018 and 2019.

03 Amount of Design Export·Import

Companies utilizing design Amount of import

No. of companies Utilizing design × Ratio of Import companies × (Average design investment × Ratio of Import companies)

- Amount of income by companies utilizing design is estimated at 15.2 billion KRW.

▾ Estimated amount of design import (Unit : Million KRW)

Classification	Estimated No. of companies utilizing design	Ratio of import companies[7]	Average design investment	Ratio of foreign outsourcing for design development	Estimated amount of import
Design Import	147,595	0.37%	88.66	31.63%	**15,185**

Specialized design companies Amount of export

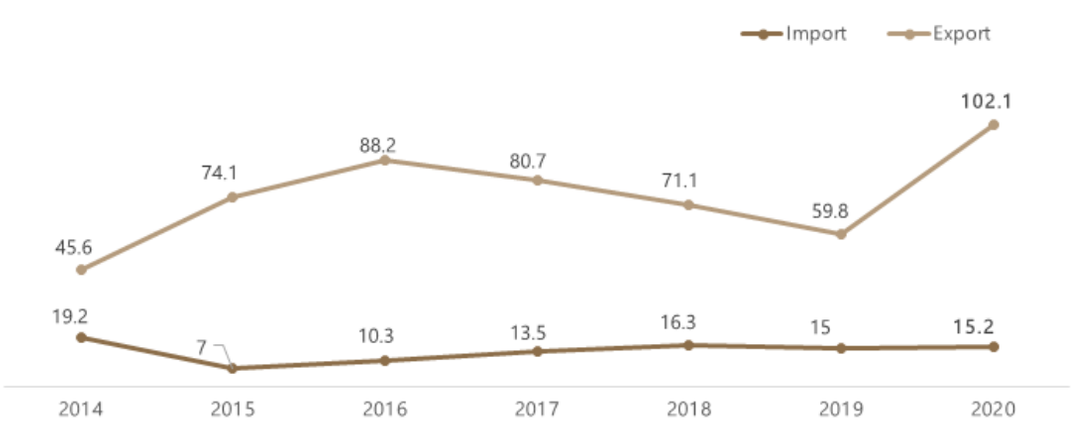
No. of specialized design companies × Ratio of export companies × (Average sales × Ratio of overseas sales)

- Amount of design export by specialized design companies is estimated at 102.1 billion KRW.

▾ Estimated amount of design export (Unit : Million KRW)

Classification	no. of companies design companies	Ratio of export companies[8]	Average Sales (Million KRW)	Ratio of foreign clients in sales	Estimated amount of export (million KRW)
Design export	7,229	5.00%	607.24	46.55%	**102,133**

▾ Size of design import/export (Unit : Billion KRW)



7) Ratio of import companies: Companies that appeared to have 1% or higher percentage of foreign company outsourcing for design development in the Survey

8) Ratio of export companies: Companies that appeared to have 1% or higher percentage of foreign clients in sales composition in the Survey

04 Economic Value of Design

Design Economic Value = Sales from industries that belong to the Special Design Classification × Contribution rate of design × Added Value ratio

- Economic value of design in 2020 is estimated at 113 trillion KRW (128 trillion KRW in 2019).
- By industry type, economic value of Service/experience design (40.1 trillion KRW) and Design infrastructure (36.5 trillion KRW) are high, followed by Product design(14.3 trillion KRW), Space design(13.1 trillion KRW).

▾ Calculation status of economic value of design

Classification	Sales (Unit : Million KRW)	Contribution rate of design (Unit : %)	Added value ratio (Unit : %)	Economic value of design (Unit : Million KRW)
Product design	193,245,507	29.5%	25.0%	14,275,433
Visual design	57,965,196	27.1%	27.5%	4,325,554
Digital/multimedia design	19,540,115	48.7%	29.4%	2,798,907
Space design	101,035,905	42.5%	30.4%	13,065,190
Fashion/textile design	18,234,038	20.5%	28.7%	1,070,562
Service/experience design	206,358,027	64.3%	30.2%	40,079,302
Industrial craft design	18,588,207	31.7%	23.4%	1,378,497
Design infrastructure	242,207,311	56.7%	26.6%	36,450,004
Total	**857,174,307**	-	-	**113,443,450**

※ Sales: Sales from industries that belong to the Special Design Classification × ratio of design utilization × sales increase rate between 2015 and 2020[9)]

※ Contribution rate of design: Results of Design Survey

※ Added value ratio: Data presumed to be from the Bank of Korea[10)]

9) We use the sales growth rate data of all industries in the Business Management Analysis Index announced by the Bank of Korea and the results of applying the design utilization ratio to the sum of sales of relevant companies in Special Design Classification in the 2015 Economic Census.

10) We used the ratio of value added in the inter-industry relations table (based on 2018 table) announced by the Bank of Korea. Calculate the ratio of value added of the recent year by the design classification (Sections), matching the product classification I.O. (Input Output) with the design classification and reflecting the business distribution in Groups of design classification.

05 Status of Graduate and Employment of Department of Design

1) Status of graduates and employment of department of design

- The number of graduates from design departments at universities and graduate schools reached 21,112(20,920 on 2019), and the number of the employed among them reached 11,791(12,178 on 2019)[11].
- Meanwhile, the number of graduates excluding them who are advanced, enlisted, unable to work, excluder and foreign students reached 18,279.

▾ **Status of graduates and employment of department of design** (Unit : Persons)

Classification	Status of Graduates and Employment		
	Graduates	Graduates(A)	Employment(B)
2020	**21,112**	**18,279**	**11,791**
2019	20,920	18,404	12,178
YoY	**192**	**-125**	**-387**

▾ **Status of graduates and employment of department of design by classification** (Unit : Persons)

Classification		Status of Graduates and Employment											
		Graduates				Graduates(A)				Employment(B)			
		bachelor's degree	Master's degree	Doctor's degree	Total	bachelor's degree	Master's degree	Doctor's degree	Total	bachelor's degree	Master's degree	Doctor's degree	Total
Total		**20,294**	**632**	**186**	**21,112**	**17,822**	**341**	**116**	**18,279**	**11,471**	**235**	**85**	**11,791**
University type	Junior college	8,869	-	-	8,869	7,404	-	-	7,404	4,892	-	-	4,892
	University	10,539	-	-	10,539	9,602	-	-	9,602	5,952	-	-	5,952
	Industrial college	108	-	-	108	105	-	-	105	75	-	-	75
	University(college)	16	-	-	16	16	-	-	16	12	-	-	12
	Graduate college	-	632	186	818	-	341	116	457	-	235	85	320
	Functional college	762	-	-	762	695	-	-	695	540	-	-	540
Major	General design	1,639	376	97	2,112	1,422	192	52	1,666	882	125	37	1,044
	Product design	3,169	29	11	3,209	2,764	18	7	2,789	1,740	13	5	1,758
	Visual design	3,523	26	9	3,558	3,137	12	4	3,153	1,979	11	3	1,993
	Digital/multimedia design	2,857	26	2	2,885	2,573	20	1	2,594	1,608	17	1	1,626
	Space design	3,377	39	5	3,421	2,879	17	5	2,901	1,979	11	5	1,995
	Fashion/textile design	3,911	55	6	3,972	3,453	22	5	3,480	2,256	15	5	2,276
	Service/experience design	477	23	10	510	418	17	3	438	287	13	2	302
	Industrial craft design	767	33	45	845	653	21	38	712	373	13	27	413
	Design infrastructure	574	25	1	600	523	22	1	546	367	17	0	384

※ Data provided by Korean Education Development Institute(KEDI)
※ Survey base date : December 31st, 2020
※ Graduates are divided into employment and non-employment and the non-employment is divided into advanced, enlisted, unable to work, excluder, foreign students, etc. When calculating the employment rate, we use the graduates (A) excluding advanced, enlisted, unable to work, excluder, foreign students, etc.
※ graduates (A) : Number of graduates excluding advanced, enlisted, unable to work, excluder, foreign students, etc.
※ Employed: Employees with health insurance, On-campus employment, Overseas employees, Agriculture and forestry fisheries, Individual creative workers, Individual proprietorship, Freelancers.

11) During the period, the total number of graduates of nationwide Institutions of higher education is 555,808, the total number of employees is 332,839, and the employment rate is 67.7% (Office of education, 2019)

2) Status of graduates and employment rate of department of design

- The employment of graduates reached 64.5%, 1.7%p decrease compared to the previous year.
- Regarding the rate by degree, bachelor's degree reached 64.4%, master's degree reached 68.9%, and doctor's degree reached 73.3%.

▾ **Status of graduates and employment of department of design** (Unit : Persons)

Classification	Status of Graduates and Employment		
	Graduates(A)	Employment(B)	Employment rate(C=B/A)
2020	**18,279**	**11,791**	**64.5%**
2019	18,404	12,178	66.2%
YoY	**-125**	**-387**	**-1.7%p**

▾ **Status of graduates and employment of department of design by classification** (Unit : Persons)

Classification		Status of Graduates and Employment											
		Graduates(A)				Employment(B)				Employment rate(C=B/A, %)			
		bachelor's degree	Master's degree	Doctor's degree	Total	bachelor's degree	Master's degree	Doctor's degree	Total	bachelor's degree	Master's degree	Doctor's degree	Total
Total		**17,822**	**341**	**116**	**18,279**	**11,471**	**235**	**85**	**11,791**	**64.4**	**68.9**	**73.3**	**64.5**
Type	Junior college	7,404	-	-	7,404	4,892	-	-	4,892	66.1	-	-	66.1
	University	9,602	-	-	9,602	5,952	-	-	5,952	62.0	-	-	62.0
	Industrial college	105	-	-	105	75	-	-	75	71.4	-	-	71.4
	University(college)	16	-	-	16	12	-	-	12	75.0	-	-	75.0
	Graduate college	-	341	116	457	-	235	85	320	-	68.9	73.3	70.0
	Functional college	695	-	-	695	540	-	-	540	77.7	-	-	77.7
Major	General design	1,422	192	52	1,666	882	125	37	1,044	62.0	65.1	71.2	62.7
	Product design	2,764	18	7	2,789	1,740	13	5	1,758	63.0	72.2	71.4	63.0
	Visual design	3,137	12	4	3,153	1,979	11	3	1,993	63.1	91.7	75.0	63.2
	Digital/multimedia design	2,573	20	1	2,594	1,608	17	1	1,626	62.5	85.0	100.0	62.7
	Space design	2,879	17	5	2,901	1,979	11	5	1,995	68.7	64.7	100.0	68.8
	Fashion/textile design	3,453	22	5	3,480	2,256	15	5	2,276	65.3	68.2	100.0	65.4
	Service/experience design	418	17	3	438	287	13	2	302	68.7	76.5	66.7	68.9
	Industrial craft design	653	21	38	712	373	13	27	413	57.1	61.9	71.1	58.0
	Design infrastructure	523	22	1	546	367	17	0	384	70.2	77.3	0.0	70.3

※ Data provided by Korean Education Development Institute(KEDI)

※ Survey base date : December 31st, 2019

※ Graduates are divided into employment and non-employment and the non-employment is divided into advanced, enlisted, unable to work, excluder, foreign students, etc. When calculating the employment rate, we use the graduates (A) excluding advanced, enlisted, unable to work, excluder, foreign students, etc.

※ graduates (A) : Number of graduates excluding advanced, enlisted, unable to work, excluder, foreign students, etc.

※ Employment rate: Employed/{Graduates-(Advanced+Enlisted+Unable to work+Excluder+Foreign students)}*100

※ Employed: Employees with health insurance, On-campus employment, Overseas employees, Agriculture and forestry fisheries, Individual creative workers, Individual proprietorship, Freelancers

PART 3

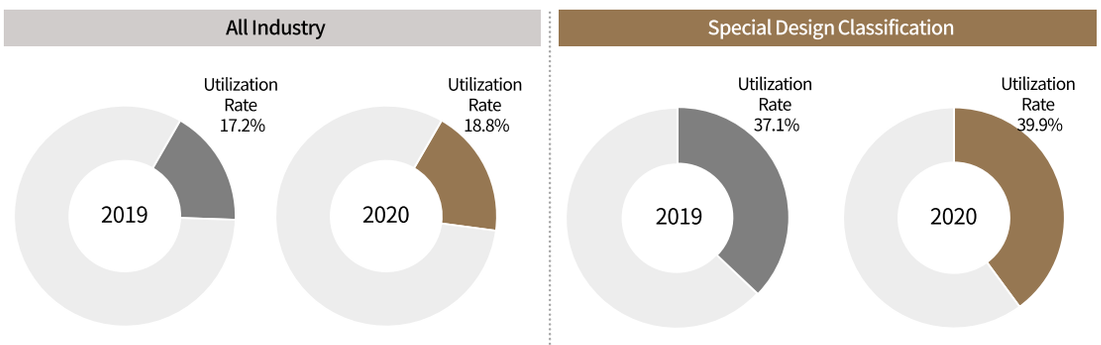
Survey Results

01 Companies Utilizing Design

1. Design Utilization Rate

- (All Industry)
  The design utilization rate reached 18.8%.
- (Special Design Classification)
  The design utilization rate of companies in general under special design classification reached 39.9%.

▾ **Design Utilization Rate of All Industry and Special Design Classification** (Unit : %)



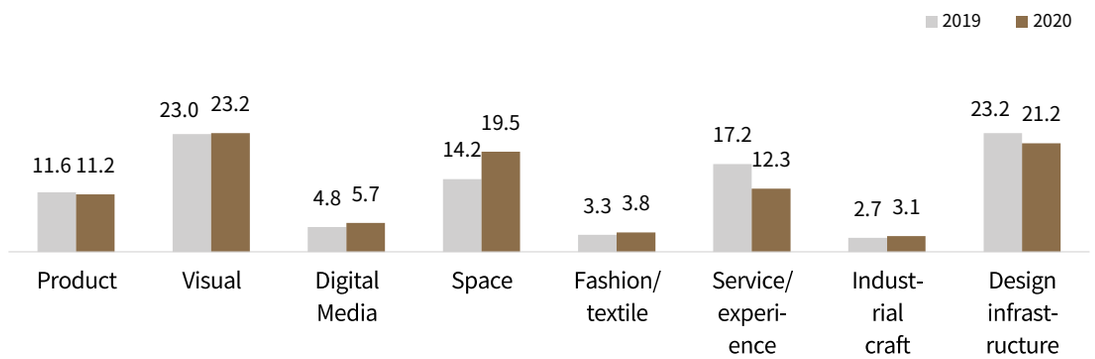
▾ **Design Utilization Rate of All Industry and Special Design Classification** (Unit : %)

Classification		2019		2020	
		All Industry	Special Design Classification	All Industry	Special Design Classification
Total		**17.2**	**37.1**	**18.8**	**39.9**
Type	**Product design**	31.3	31.3	34.1	34.1
	Visual design	47.1	47.1	46.1	46.1
	Digital/multimedia design	57.7	57.7	65.2	65.2
	Space design	30.9	30.9	33.6	33.6
	Fashion/textile design	38.5	38.5	45.3	45.3
	Service/experience design	38.8	38.8	43.4	43.4
	Industrial craft design	26.0	26.0	28.8	28.8
	Design infrastructure (design-based technology)	41.8	41.8	44.9	44.9

2. Fields of Design Utilization

- Companies utilizing Design's main design utilization fields(multiple responses allowed) were shown as 'Visual Design'(23.2%), followed by 'Design Infrastructure'(21.2%), etc.

▾ **Fields of Design Utilization** (Unit : %)



▾ **Fields of Design Utilization** (Unit : %)

Classification		Product	Visual	Digital Media	Space	Fashion/ textile	Service/ experi- ence	Indust- rial craft	Design infrast- ructure
Total		**11.2**	**23.2**	**5.7**	**19.5**	**3.8**	**12.3**	**3.1**	**21.2**
Type	**Product design**	79.4	18.1	2.4	0.0	0.0	0.0	0.0	0.0
	Visual design	0.4	98.3	0.9	0.1	0.3	0.0	0.0	0.0
	Digital/multimedia design	0.0	9.9	90.1	0.0	0.0	0.0	0.0	0.0
	Space design	0.2	6.9	0.4	92.5	0.0	0.0	0.0	0.0
	Fashion/textile design	0.2	3.7	0.3	0.0	95.8	0.0	0.0	0.0
	Service/experience design	0.0	27.0	1.1	0.7	0.0	71.0	0.0	0.1
	Industrial craft design	0.0	14.0	2.9	3.2	0.0	0.0	79.9	0.0
	Design infrastructure (design-based technology)	3.1	22.5	6.0	0.4	0.2	0.6	0.0	67.1
Scale	**Large companies**	7.8	44.2	0.9	6.8	1.1	32.7	0.2	6.4
	Midsize companies	8.9	22.9	4.4	14.8	0.9	21.1	2.8	24.3
	Medium companies	8.2	20.9	8.0	18.3	1.9	15.7	0.9	26.2
	Small companies	12.2	23.7	5.1	20.0	4.4	11.1	3.8	19.9

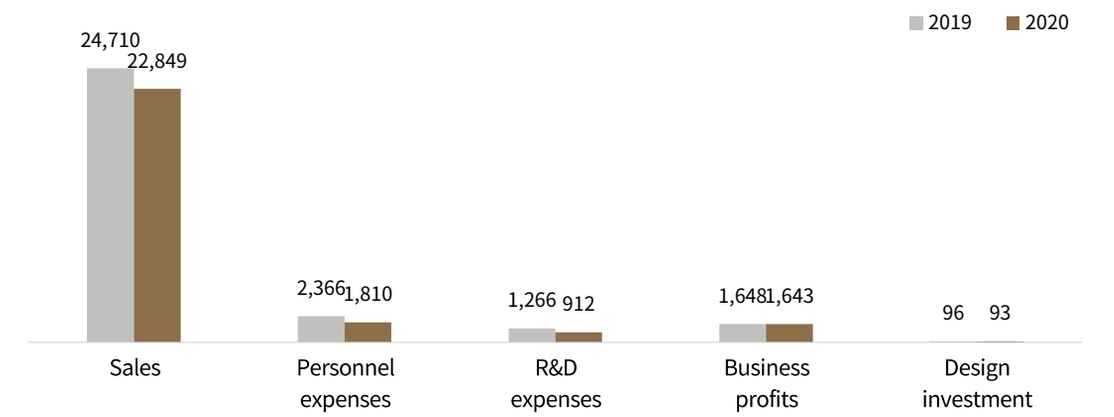
※ There is a difference in the design fields of 2019 and 2020, so it is necessary to be careful when comparing them.

※ 'Design infrastructure' in 2019 is recalculated as the sum of general design and convergence design.

3. Financial and Investment Status

- ‘Sales’ averaged 22.85 billion KRW, and ‘design investment’ averaged 92.99 million KRW.
- ‘Design investment cost’ was high at an average of 1,558 million KRW in large companies.

▾ **Financial and Investment Status** (Unit : Million KRW)



▾ **Financial and Investment Status** (Unit : Million KRW)

Classification		Sales	Personnel expenses	R&D expenses	Business profits	Design investment
Total		**22,849**	**1,810**	**912**	**1,643**	**93**
Type	Product design	105,608	7,992	6,697	8,156	153
	Visual design	6,824	819	109	819	158
	Digital/multimedia design	5,225	979	122	391	147
	Space design	12,155	838	32	424	81
	Fashion/textile design	4,701	545	45	217	100
	Service/experience design	11,204	1,298	71	1,480	98
	Industrial craft design	5,148	622	61	347	55
	Design infrastructure (design-based technology)	12,227	812	61	525	58
Scale	Large companies	2,286,283	152,142	129,637	175,932	1,558
	Midsize companies	138,767	9,281	1,161	5,681	578
	Medium companies	20,453	1,789	173	905	125
	Small companies	2,803	442	28	322	65

4. Details of Design Investment

- ‘Personal expenses for designers’ was the highest with an average of 81.28 million KRW, followed by ‘Design service charges’(average of 8.89 million KRW).
- ‘Personnel expenses for designers’(80.03 million KRW → 81.28 million KRW) and ‘Design service charges’(5.74 million KRW → 8.89 million KRW) both increased compared to the previous year.

▾ Details of Design Investment

(Unit : Million KRW)

▾ Details of Design Investment

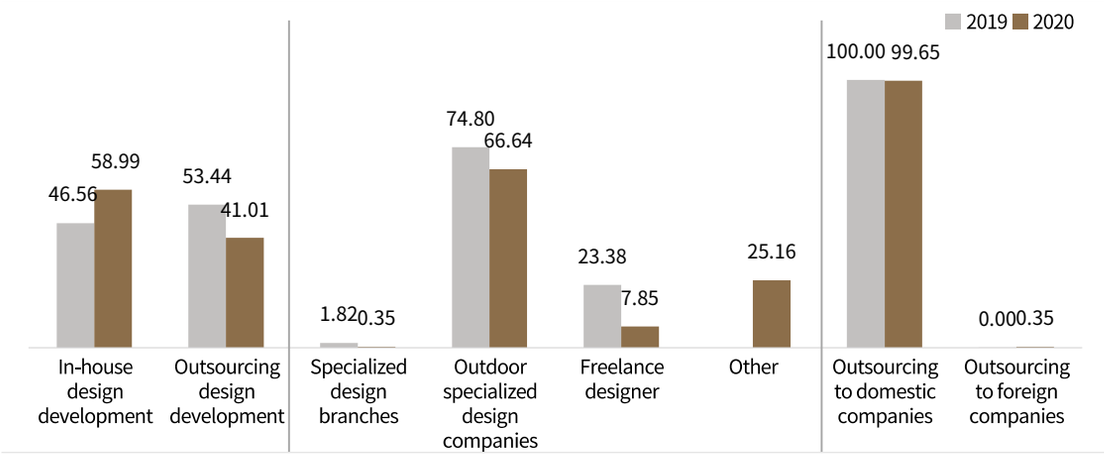
(Unit : Million KRW)

Classification		Personnel expenses for designers	Design service charges	Design machines/ devices and software expenses	Expenses for land/bldg for design R&D	Design/ Designer Educatio-nal Fee	Expenses for purchase/ manage-ment of IPRs in design	Other design-related operating costs
Total		**81.28**	**8.89**	**0.55**	**0.01**	**0.03**	**0.02**	**2.20**
Type	**Product design**	138.89	11.18	0.58	0.00	0.05	0.03	2.01
	Visual design	134.58	19.38	0.68	0.00	0.10	0.07	2.83
	Digital/multimedia design	135.97	4.49	1.92	0.00	0.13	0.02	4.32
	Space design	74.11	4.26	0.59	0.00	0.03	0.04	2.35
	Fashion/textile design	89.55	6.18	0.69	0.02	0.12	0.01	3.89
	Service/experience design	76.92	19.65	0.35	0.03	0.01	0.00	1.15
	Industrial craft design	50.90	2.97	0.42	0.00	0.01	0.00	0.91
	Design infrastructure (design-based technology)	50.36	4.42	0.44	0.01	0.01	0.01	2.34
Scale	**Large companies**	1,18.33	35.06	0.88	0.00	0.03	0.01	3.99
	Midsize companies	554.67	14.52	2.73	0.55	0.34	0.06	5.33
	Medium companies	113.13	8.24	0.89	0.00	0.06	0.04	3.09
	Small companies	53.77	8.78	0.42	0.01	0.02	0.02	1.89

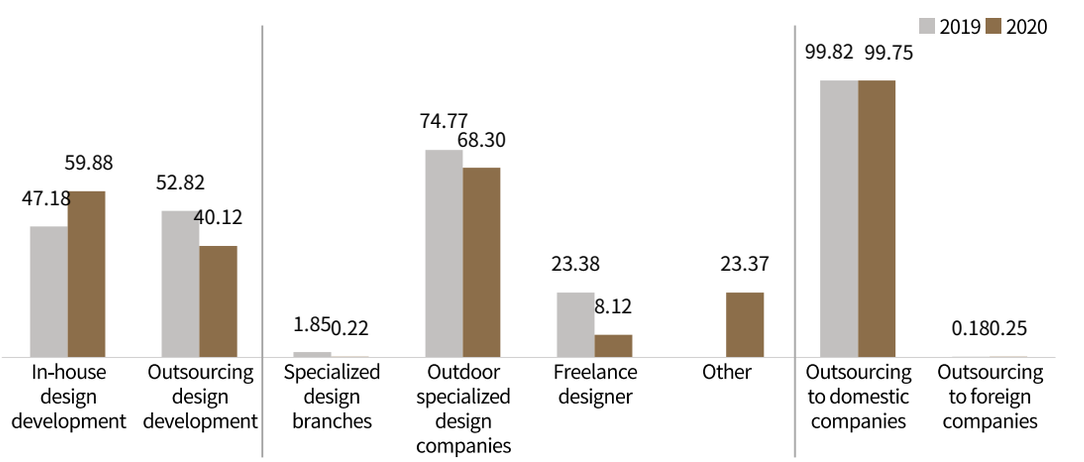
5. Design development number and cost

- Looking at the proportion of design development cases, ‘in-house design development’ was 58.99% and ‘outsourcing design development’ was 41.01%.
- In terms of cost, ‘in-house design development’ (59.88%) is higher than ‘outsourcing design development’ (40.12%).

▾ **Proportion of Design development Number** (Unit : %)



▾ **Proportion of Design development Cost** (Unit : %)



※ The percentage of design development cases and costs was prepared up to the 2019 standard, but from 2020, the actual number and cost has been changed. In addition, ‘Other design service costs’ have been added to the items for each outsourcing target, so caution is required when comparing trends.

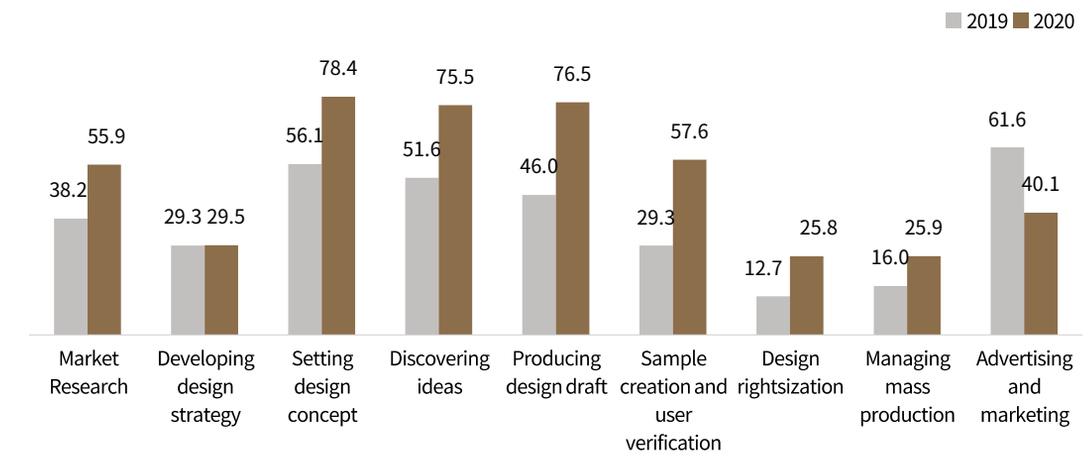
▾ **Design development Number and Cost in 2020**

Classification	In-house design development	Outsourcing design development	Outsourcing type				Domestic/Foreign	
			Specialized design branches	Outdoor specialized design companies	Freelance designer	Other	Outsourcing to domestic companies	Outsourcing to foreign companies
Average of Number	19.82	2.65	0.02	1.82	0.21	0.59	2.64	0.01
Average of Cost	49.60	8.89	0.18	4.33	2.40	1.99	8.79	0.11

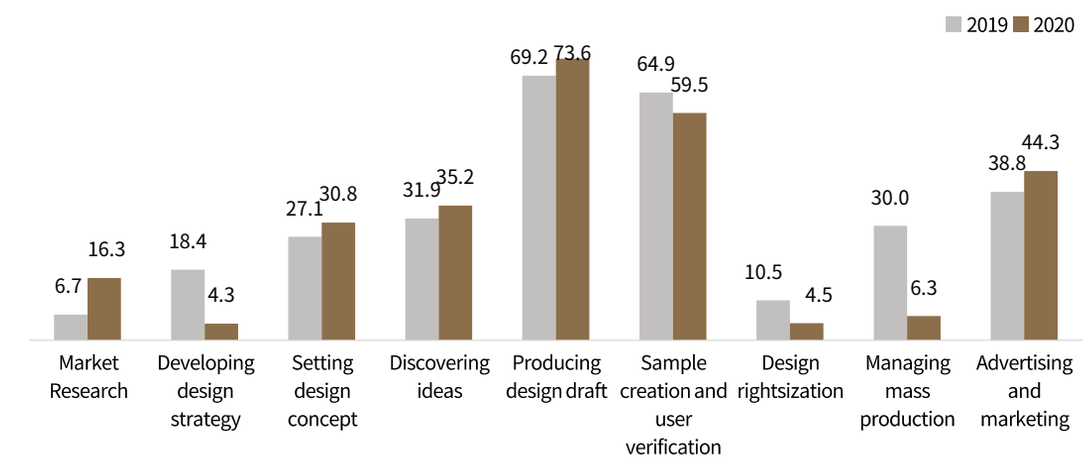
6. Involvement of designer/service companies in the development process

- Designers' involvement in new product development was high in 'setting design concept' (78.4%), 'producing design draft' (76.5%) and 'discovering ideas' (75.5%).
- The highest level of intervention by design companies was ‘producing design draft’ (73.6%), followed by ‘sample creation and user verification’ (59.5%).

Involvement of designer in the development process (Multiple responses, Unit : %)



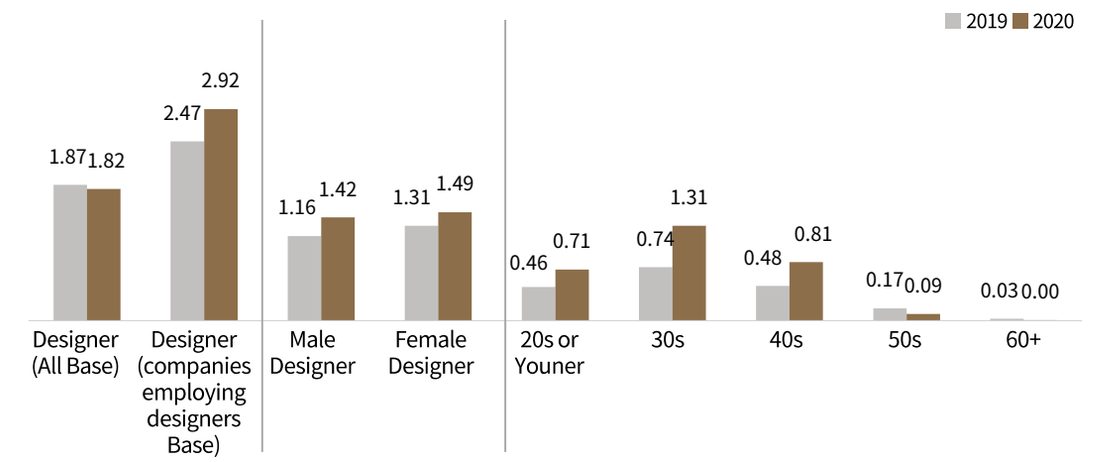
Involvement of service companies in the development process (Multiple responses, Unit : %)



7. Manpower of Design

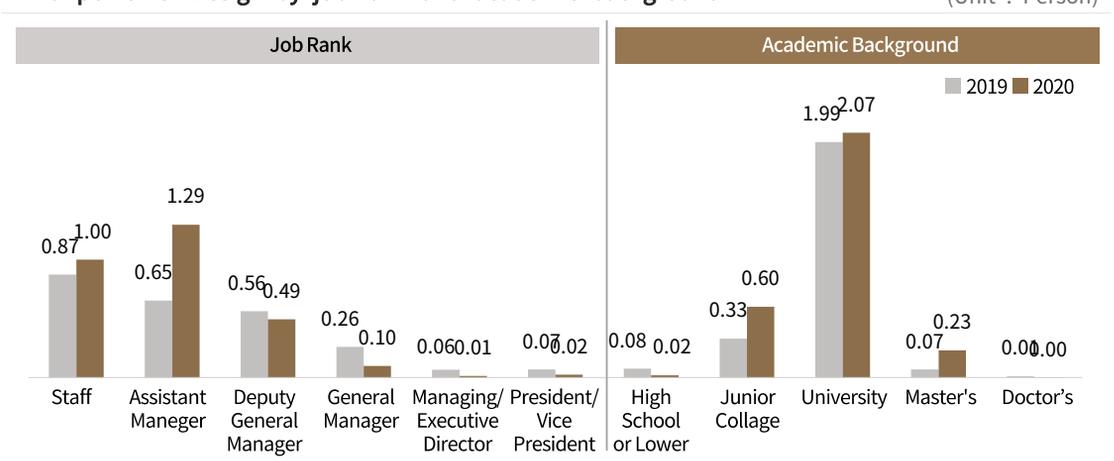
- The average number of designers was 1.82 based on all companies utilizing design, and the average was 2.92 based on companies hiring designer.
- Female designers (1.49 persons) are higher than male (1.42 persons).

Manpower of Design (Unit : Person)



- The ‘assistant manager’ (1.29 persons) was hightest, followed by the ‘Staff’ (1.00 persons).
- ‘University graduate’ (2.07 persons) showed the highest number.

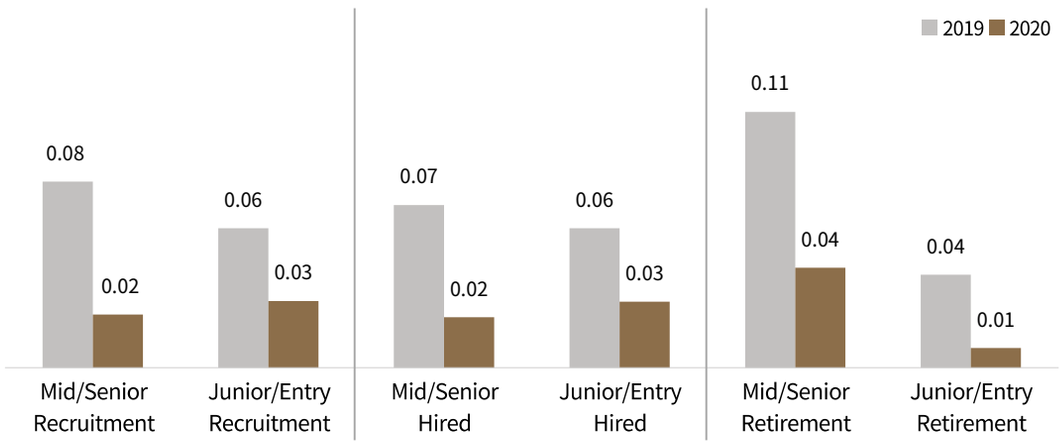
Manpower of Design by job rank and academic background (Unit : Person)



8. Designer Recruitment/Hired/Retirement

- The average number of mid/senior designers recruited is 0.02, and the average number of junior/entry designers hired is 0.03.
- Meanwhile, the average number of retired mid/senior designers is 0.04, and the average number of retired junior/entry designers is 0.01.

▾ **Designer Recruitment/Hired/Retirement** (Unit : person)



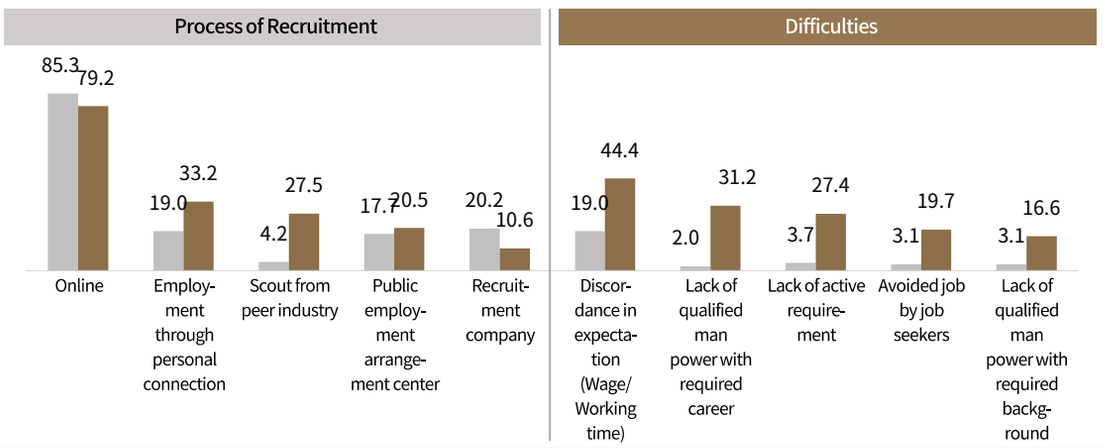
▾ **Designer Recruitment/Hired/Retirement** (Unit : person)

Classification		Recruitment		Hired		Retirement	
		Mid/ Senior	Junior/ Entry	Mid/ Senior	Junior/ Entry	Mid/ Senior	Junior/ Entry
Total		**0.02**	**0.03**	**0.02**	**0.03**	**0.04**	**0.01**
Type	Product design	0.03	0.03	0.03	0.03	0.04	0.00
	Visual design	0.07	0.02	0.06	0.02	0.10	0.00
	Digital/multimedia design	0.06	0.16	0.06	0.16	0.12	0.01
	Space design	0.00	0.03	0.00	0.03	0.04	0.03
	Fashion/textile design	0.05	0.00	0.05	0.00	0.07	0.01
	Service/experience design	0.01	0.02	0.01	0.02	0.03	0.00
	Industrial craft design	0.09	0.02	0.09	0.02	0.12	0.00
	Design infrastructure (design-based technology)	0.01	0.02	0.01	0.02	0.00	0.00
Scale	Large companies	0.24	0.33	0.24	0.33	0.16	0.05
	Midsize companies	0.15	0.26	0.15	0.26	0.04	0.03
	Medium companies	0.02	0.05	0.02	0.05	0.07	0.01
	Small companies	0.02	0.02	0.02	0.02	0.04	0.01

9. Process and Difficulties of design manpower recruitment

- As for the design manpower recruitment path (Multiple responses), 'Online' (79.2%) was the highest, followed by 'Employment through personal connection' (33.2%), 'Scout from peer industry' (27.5%).
- As for difficulties in recruiting, ‘discordance in expectations(wages and working times)’ (44.4%) was the highest.

▾ **Process and Difficulties of design manpower recruitment** (Top 5, Multiple responses, Unit : %)



▾ **Process and Difficulties of design manpower recruitment** (Top 5, Multiple responses, Unit : %)

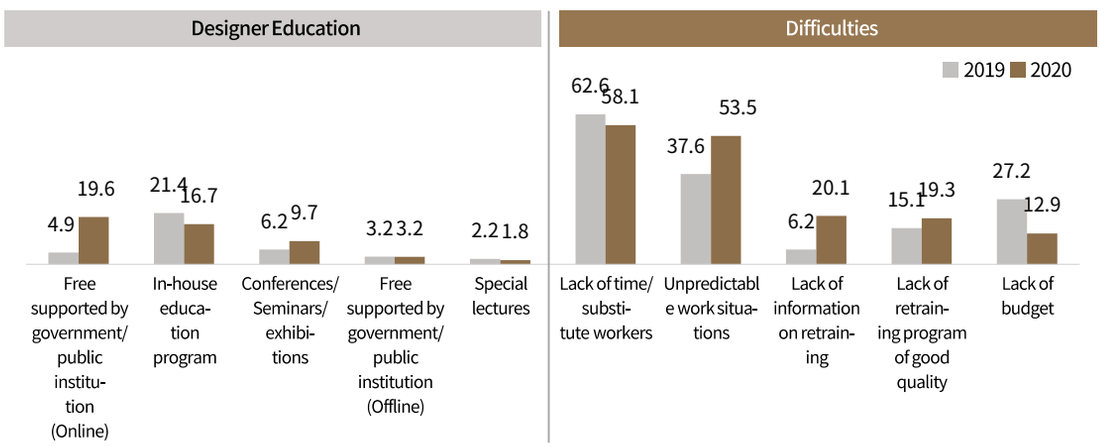
Classification		Recruitment Process					Difficulties				
		Online	Employ-ment through personal connec-tion	Scout from peer industry	Public employ ment arrange ment center	Recruit ment compan y	Discor-dance in expecta-tion (Wage/ Working time)	Lack of qualified man power with required career	Lack of active require ment	Avoided job by job seekers	Lack of qualified man power with required backgro und
Total		**79.2**	**33.2**	**27.5**	**20.5**	**10.6**	**44.4**	**31.2**	**27.4**	**19.7**	**16.6**
Type	**Product design**	71.7	28.7	27.9	29.3	10.2	39.7	19.7	37.4	10.5	13.3
	Visual design	78.4	33.0	30.2	17.7	14.9	52.0	29.4	19.5	15.6	20.8
	Digital/multimedia design	90.9	37.4	18.7	11.3	10.8	51.9	33.5	20.0	19.2	30.7
	Space design	88.3	39.4	25.8	17.1	7.9	47.3	51.4	16.7	27.4	18.2
	Fashion/textile design	63.9	30.9	34.1	41.0	18.8	31.6	26.8	51.0	10.2	6.1
	Service/experience design	88.0	26.5	31.7	16.2	3.9	40.5	35.7	8.9	35.9	19.5
	Industrial craft design	96.3	46.7	2.7	10.6	21.1	74.6	15.6	12.0	0.5	35.7
	Design infrastructure (design-based technology)	68.6	31.4	29.9	21.6	11.9	40.0	20.8	43.3	15.4	10.1
Scale	**Large companies**	84.3	21.7	27.6	11.5	6.1	36.4	37.4	6.8	26.3	40.5
	Midsize companies	84.6	44.2	19.2	22.8	11.6	60.8	39.0	23.6	10.5	38.2
	Medium companies	78.9	36.0	28.9	23.8	8.7	43.3	33.4	28.3	25.7	18.6
	Small companies	79.2	32.3	27.2	19.5	11.2	44.5	30.4	27.2	18.1	15.5

※ For difficulties, attention should be paid when comparing trends by deleting the item ‘I have never had any difficulties in hiring manpower’ from the 2020 survey.

10. Designer Re-education and Difficulties

- As for the designer Re-education conducted in 2020, ‘Free supported by government/public institution(Online)’ (19.6%) was the highest, followed by ‘In-house education programs’ (16.7%).
- As for difficulties in education, ‘Lack of time/substitute workers’ (58.1%) and ‘Unpredictable work situation’ (53.5%) were followed in that order.

▾ **Designer Re-education and Difficulties** (Top 5, Multiple Responses, Unit : %)



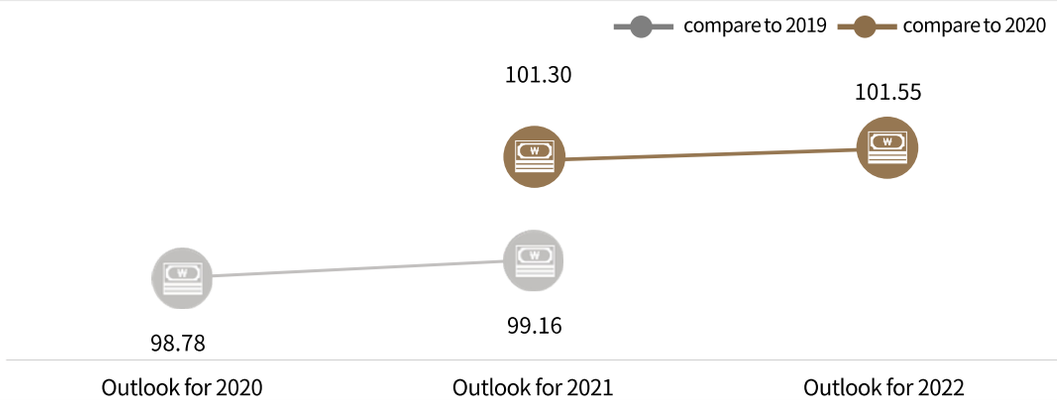
▾ **Designer Re-education and Difficulties** (Top 5, Multiple Responses, Unit : %)

Classification		Designer Re-education					Difficulties				
		Free supported by government/ public institution (Online)	In-house education program	Conferences/ Seminars/ exhibitions	Free supported by government/ public institution (Offline)	Special lectures	Lack of time/ substitute workers	Unpredictable work situations	Lack of information on retraining	Lack of retraining program of good quality	Lack of budget
Total		**50.2**	**19.6**	**16.7**	**9.7**	**3.2**	**58.1**	**53.5**	**20.1**	**19.3**	**12.9**
Type	Product design	51.1	10.9	14.2	16.8	6.2	46.1	35.2	26.4	28.4	12.1
	Visual design	49.5	17.7	12.3	12.0	2.9	60.8	44.4	18.1	22.6	17.2
	Digital/multimedia design	56.1	23.3	12.9	3.9	0.0	63.4	57.5	11.2	24.9	17.2
	Space design	43.6	19.2	29.5	1.6	2.3	61.6	49.1	10.4	34.1	15.7
	Fashion/textile design	40.2	20.0	5.8	28.4	3.3	55.5	41.3	34.7	16.5	6.6
	Service/experience design	52.8	36.2	7.7	2.9	9.0	79.4	77.1	10.5	6.0	10.5
	Industrial craft design	64.9	2.6	22.7	9.2	2.7	43.9	40.6	4.9	42.0	32.8
	Design infrastructure (design-based technology)	52.6	17.8	15.4	13.6	0.0	50.1	59.7	32.6	4.5	7.9
Scale	Large companies	32.8	26.2	33.7	0.9	2.5	78.3	51.4	34.6	6.0	3.8
	Midsize companies	49.6	14.6	34.9	0.0	0.0	65.8	55.8	18.7	6.7	11.3
	Medium companies	45.1	30.1	17.8	4.9	4.7	56.0	58.5	22.1	13.6	13.4
	Small companies	51.8	16.6	16.0	11.3	2.8	58.5	52.0	19.5	21.2	12.8

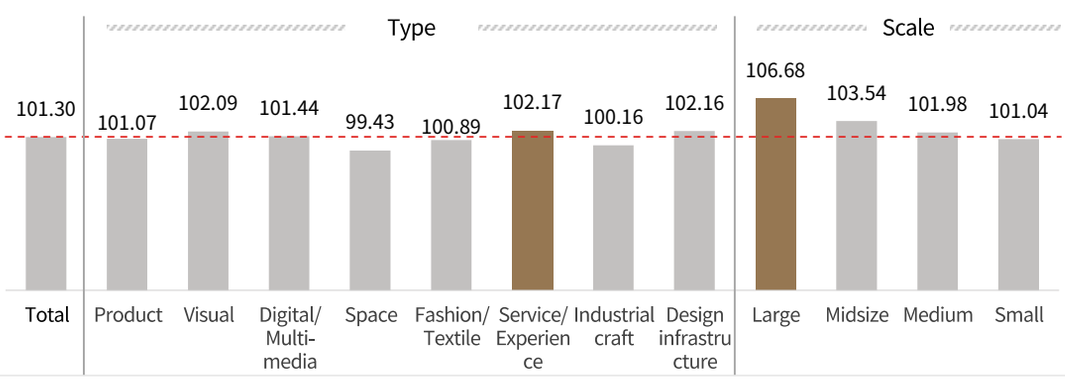
11-1. Outlook for design investment

- Both the design investment forecast in 2021 and 2022 is expected to increase. (101.30% in 2021, 101.55% in 2022)
- By size, the positive outlook is higher for large enterprises. (106.68% in 2021, 110.74% in 2022)

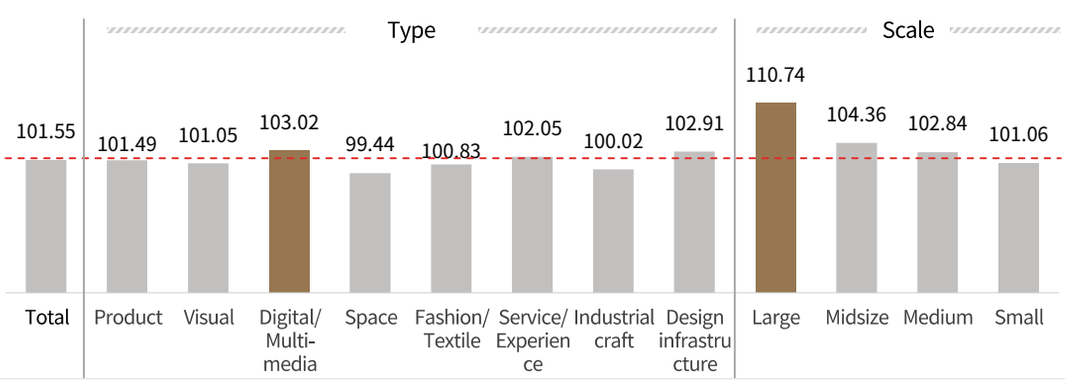
▾ **Outlook for design investment** (Unit : %)



▾ **Outlook for 2021 design investment** (Unit : %)



▾ **Outlook for 2022 design investment** (Unit : %)

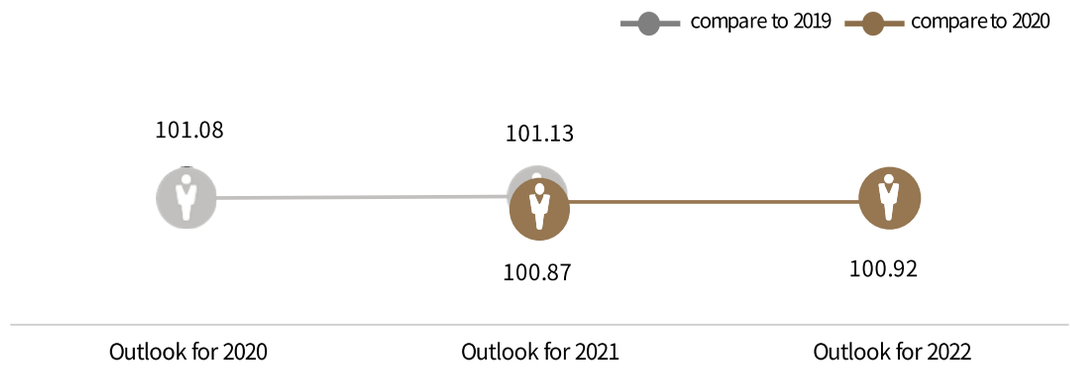


11-2. Outlook for designer employment

- Both the designer employment forecast in 2021 and 2022 is expected to increase. (100.87% in 2021, 100.92% in 2022)
- By scale, the positive outlook is higher in 2021 Midsize (102.49%) and 2022 Midsize (107.68%).

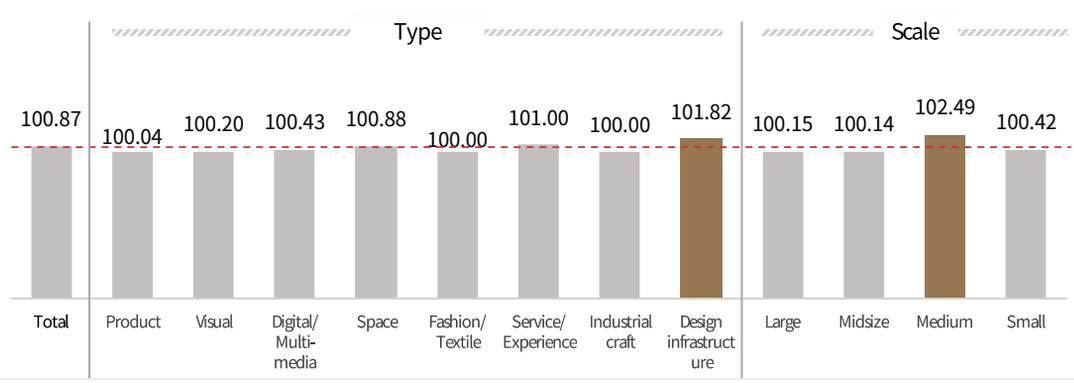
Outlook for designer employment

(Unit : %)



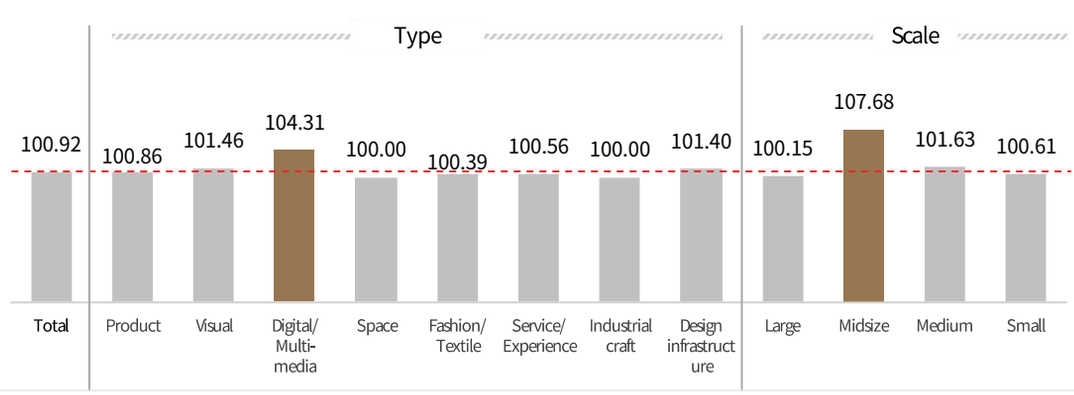
Outlook for 2021 designer employment by industry type and scale

(Unit : %)



Outlook for 2022 designer employment by industry type and scale

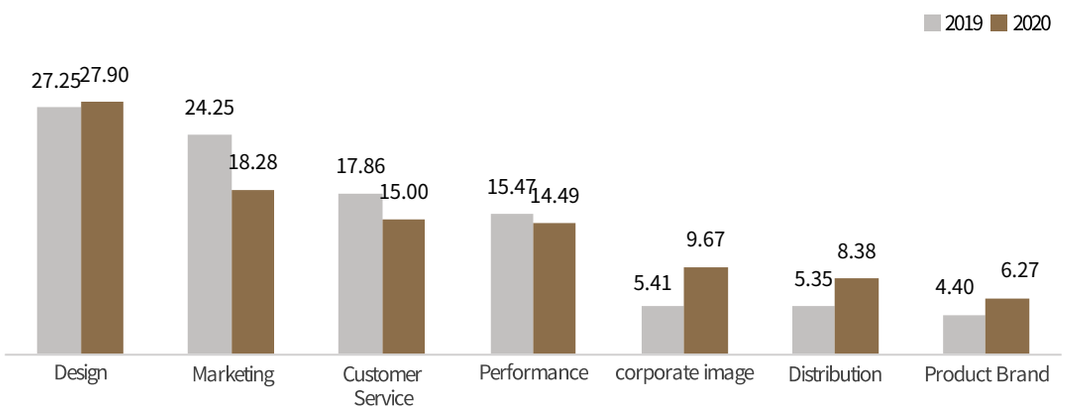
(Unit : %)



12. Ratio of factors that affect product sales

- Concerning factors that affect product sales, ‘Design’ has the largest proportion with 27.90%, followed by ‘Marketing’(18.28%), ‘Customer Service’(15.00%), ‘Performance’(14.49%), etc.
- ‘Design’(27.25% → 27.90%) weight has increased slightly from the previous year.

▾ Ratio of factors that affect product sales (Unit : %)



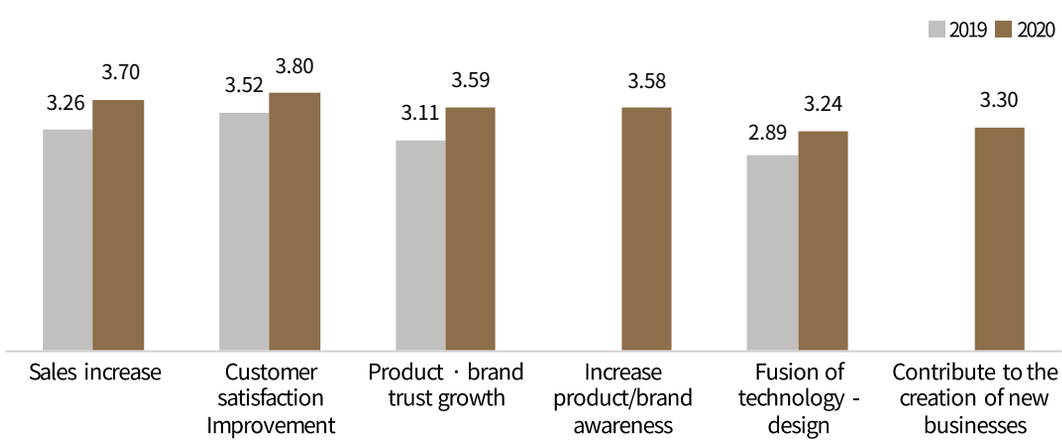
▾ Ratio of factors that affect product sales (Unit : %)

Classification		Design	Marketing	Customer Service	Performance	corporate image	Distribution	Product Brand
Total		**27.90**	**18.28**	**15.00**	**14.49**	**9.67**	**8.38**	**6.27**
Type	Product design	25.01	15.20	14.89	16.91	7.94	9.29	10.77
	Visual design	27.52	18.35	13.73	13.08	9.44	7.13	10.74
	Digital/multimedia design	29.38	20.10	15.34	10.68	9.22	6.04	9.23
	Space design	30.44	19.45	17.10	14.75	9.46	3.75	5.05
	Fashion/textile design	28.67	16.47	13.40	15.74	7.94	9.63	8.16
	Service/experience design	30.20	18.70	15.53	11.94	15.01	4.80	3.82
	Industrial craft design	23.41	18.48	17.13	15.12	5.73	13.30	6.83
	Design infrastructure (design-based technology)	26.56	18.52	13.56	15.20	8.42	12.76	4.98
Scale	Large companies	18.89	25.51	17.63	13.41	17.90	2.95	3.71
	Midsize companies	23.73	20.53	15.14	13.30	10.41	11.86	5.04
	Medium companies	28.20	18.53	14.83	12.30	10.56	9.22	6.36
	Small companies	27.95	18.12	15.03	15.13	9.34	8.15	6.28

13. Design Investment and Level of Contribution for Utilization

- As a result of looking into the Design Investment and Level of Contribution for Utilization in Companies Utilizing Design(5-point scale), it presented as ‘Customer satisfaction Improvement’ (3.80 point), ‘Sales increase’(3.70 point), ‘Product·brand trust growth’(3.59 point) etc.
- Overall increase in design investment and the level of contribution for utilization compared to the previous year.

▼ **Design Investment and Level of Contribution for Utilization** (Unit : Point)



▼ **Design Investment and Level of Contribution for Utilization** (Unit : Point)

Classification		Sales increase	Customer satisfaction Improvement	Product · brand trust growth	Increase product/brand awareness	Fusion of technology - design	Contribute to the creation of new businesses
Total		**3.70**	**3.80**	**3.59**	**3.58**	**3.24**	**3.30**
Type	Product design	3.85	3.79	3.54	3.50	3.31	3.39
	Visual design	4.00	4.00	3.58	3.68	3.41	3.47
	Digital/multimedia design	3.99	3.99	3.73	3.88	3.48	3.44
	Space design	3.57	3.54	3.21	3.30	3.22	3.29
	Fashion/textile design	3.95	3.93	3.71	3.80	3.61	3.85
	Service/experience design	3.42	4.01	3.90	3.77	3.00	3.14
	Industrial craft design	3.94	3.89	3.40	3.81	3.37	3.60
	Design infrastructure (design-based technology)	3.73	3.76	3.69	3.58	3.22	3.20
Scale	Large companies	3.91	4.52	4.54	3.96	3.16	3.22
	Midsize companies	4.25	4.29	4.18	3.78	3.77	3.81
	Medium companies	3.80	3.91	3.82	3.69	3.34	3.35
	Small companies	3.67	3.75	3.51	3.54	3.20	3.28

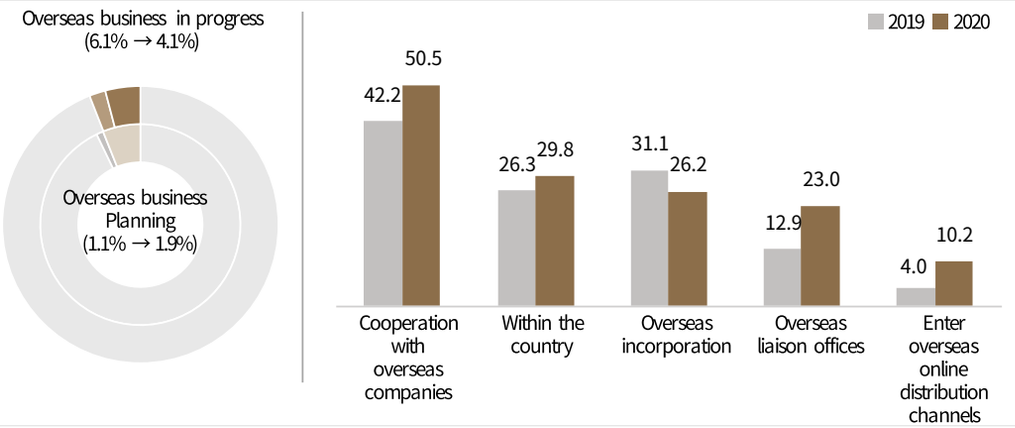
* ‘Increase product/brand awareness’, ‘Contribute to the creation of new businesses’ question is added to the survey from 2021.

14. Status of overseas business

- Among companies utilizing design, the percentage of those that have overseas business in progress reached 4.1%, a slight decrease from the previous year (6.1%), and the highest overseas business method was ‘Cooperation with overseas companies’ (50.5%).
- ‘Asia’ (67.9%) is the most popular exchange overseas area, and ‘Overseas market research’ (53.4%) is in high demand for government support for overseas business.

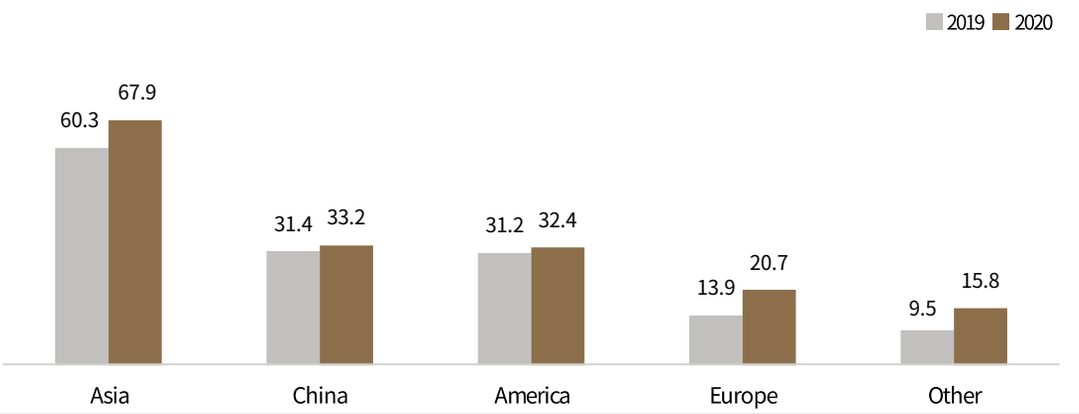
Status of overseas business and method

(Multiple responses, Unit : %)



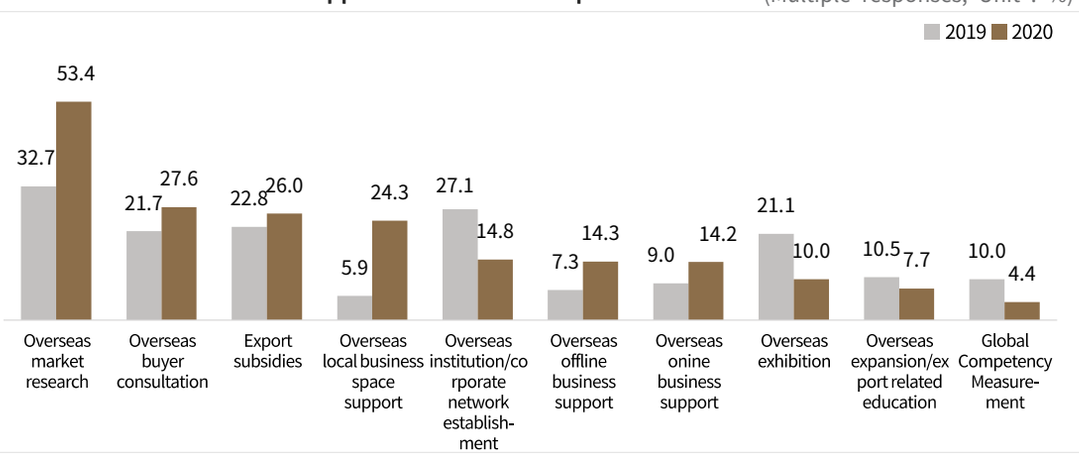
Exchange overseas area

(Multiple responses, Unit : %)



Demand for Government Support for Overseas expansion

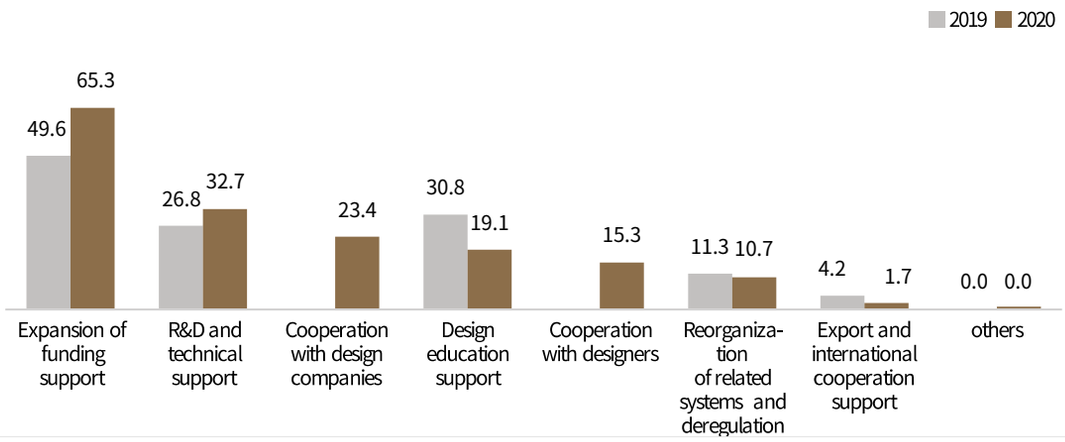
(Multiple responses, Unit : %)



15. Demand for Government Support related Design

- Regarding demand for government support related design, ‘Expansion of funding support’ has the largest proportion with 65.3%, followed by ‘R&D and technical support’ (32.7%), ‘Cooperation with design companies’ (23.4%) etc.

▼ **Demand for Government Support for Overseas design** (중복응답, Unit : %)



▼ **Demand for Government Support for Overseas design** (중복응답, Unit : %)

Classification		Expansion of funding support	R&D and technical support	Cooperation with design companies	Design education support	Cooperation with designers	Reorganiz-ation of related systems and deregulation	Export and international cooperation support	others
Total		**65.3**	**32.7**	**23.4**	**19.1**	**15.3**	**10.7**	**1.7**	**0.0**
Type	**Product design**	68.0	43.0	20.3	18.5	11.4	9.3	3.4	0.0
	Visual design	73.8	37.0	19.4	18.8	20.5	6.9	1.0	0.0
	Digital/multimedia design	72.5	53.1	7.3	33.2	16.7	9.3	2.6	0.0
	Space design	83.9	47.0	10.3	22.7	12.0	16.3	0.2	0.1
	Fashion/textile design	80.6	42.3	39.9	13.5	12.7	3.5	3.7	0.0
	Service/experience design	51.0	28.1	25.5	23.8	17.5	4.1	1.1	0.0
	Industrial craft design	78.9	35.3	15.8	15.8	28.8	20.2	1.5	0.0
	Design infrastructure (design-based technology)	53.5	17.1	33.5	14.2	15.1	11.7	2.3	0.0
Scale	**Large companies**	33.1	19.4	42.2	13.1	2.1	1.4	2.3	0.0
	Midsize companies	65.1	45.3	5.9	34.7	1.1	6.3	4.7	0.0
	Medium companies	63.2	34.2	18.9	21.5	10.6	12.8	2.0	0.1
	Small companies	66.1	32.2	24.7	18.3	16.9	10.2	1.6	0.0

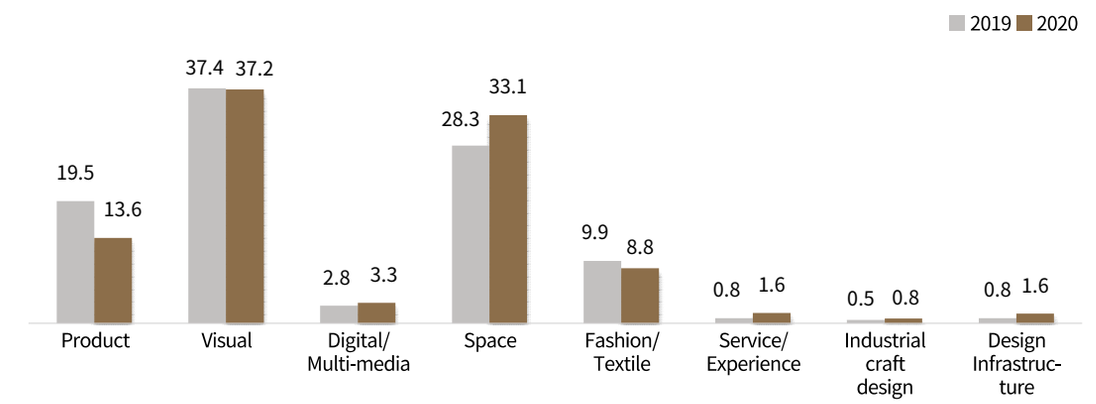
* ‘Cooperation with design compaies’ and ‘Cooperation with designers(including internship support)’ were investigated by ‘Cooperation with designers and design companies’ by 2019.
In 2019, ‘Cooperation with designers and design companies’ was 14.5%.

02 Specialized Design Companies

1. Key Areas of Service Design for Specialized Design Companies

- Concerning the key areas of service design for specialized design companies, 'Visual' design has the largest proportion with 37.2%, followed by 'Space' design(33.1%), 'Product' design(13.6%), etc.
- 'Space design' increased by 4.8%p(2019 : 28.3% to 2020 : 33.1%).

▼ Key Areas of Service Design for Specialized Design Companies (Unit : %)



▼ Key Areas of Service Design for Specialized Design Companies (Unit : %)

Classification		Product	Visual	Digital/ Multi-media	Space	Fashion/ Textile	Service/ Experience	Industrial craft	Design infrastructure
Total		**13.6**	**37.2**	**3.3**	**33.1**	**8.8**	**1.6**	**0.8**	**1.6**
Type	**Product design**	45.2	33.9	2.1	11.1	0.5	2.4	1.6	3.2
	Visual design	6.7	71.3	6.6	9.3	1.6	2.1	0.9	1.7
	Interior design	2.3	5.3	0.5	89.3	1.1	0.6	0.1	0.8
	Fashion/textile design	5.1	18.6	2.3	9.4	62.1	1.6	0.8	0.1
Scale	**1 persons**	7.5	41.5	1.9	35.7	10.1	1.5	1.2	0.7
	2~4 persons	14.9	35.1	3.4	33.2	9.2	1.6	0.8	1.8
	5~9 persons	16.9	39.5	3.4	30.2	6.5	1.3	0.1	2.1
	10~14 persons	20.2	36.1	7.6	26.5	4.2	3.2	0.3	1.8
	15 and more persons	24.3	27.0	9.5	29.6	4.8	2.7	0.0	2.0

※ There is a difference in the design fields of 2019 and 2020, so it is necessary to be careful when comparing them.

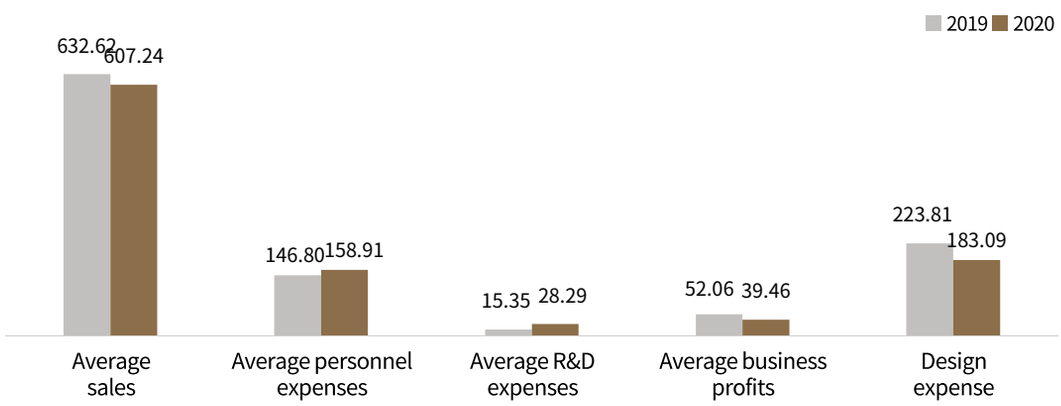
※ 'Design infrastructure' in 2019 is recalculated as the sum of general design and convergence design.

2. Status of Finance and Investment

- 2020 sales amount of specialized design companies reached an estimated 607.24 million KRW Average personnel expenses reached 158.91 million KRW, Average R&D expenses reached 28.29 million KRW, Average business profits reached 39.46 million KRW.
- Average sales and business profits decreased slightly, but average personnel expenses and R&D expenses increased slightly.

Status of Finance and Investment

(Unit : Million KRW)



Status of Finance

(Unit : Million KRW)

Classification		Average sales	Average personnel expenses	Average R&D expenses	Average business profits	Design expense
Total		**607.24**	**158.91**	**28.29**	**39.46**	**183.09**
Type	Product design	581.26	198.03	59.96	21.98	218.61
	Visual design	353.38	129.65	12.82	31.53	138.53
	Interior design	949.98	167.24	15.09	55.65	217.25
	Fashion/textile design	588.52	156.08	48.71	55.16	170.56
Scale	1 persons	146.11	51.34	16.01	23.55	79.51
	2~4 persons	515.37	125.94	18.34	21.83	174.63
	5~9 persons	895.99	260.10	42.61	78.70	285.66
	10~14 persons	1,668.49	434.49	61.62	97.19	407.14
	15 and more persons	4,365.33	1,061.03	242.25	287.21	596.82

Status of Investment

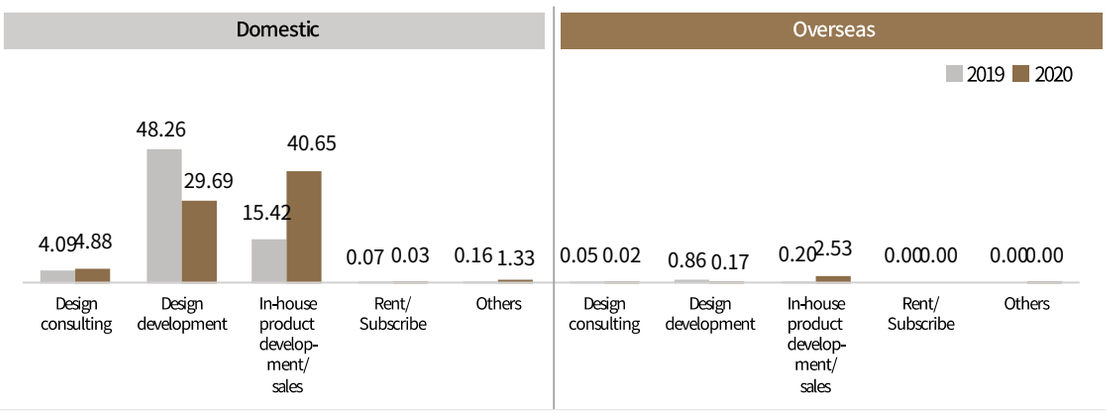
(Unit : Million KRW)

Classification		Personnel expenses	Service charge	other service charge	Devices and software	land/bldg. for R&D	Education	Purchase of IPRs in design	Others
Total		**93.59**	**25.03**	**11.70**	**5.63**	**10.80**	**1.49**	**1.86**	**32.98**
Type	Product design	120.77	32.15	20.97	6.98	9.98	4.43	1.83	21.50
	Visual design	83.11	14.40	8.76	3.92	6.97	0.49	2.45	18.43
	Interior design	89.82	33.37	11.06	6.28	15.51	0.45	1.16	59.61
	Fashion/textile design	85.37	23.96	5.56	6.70	12.39	1.71	1.82	33.05
Scale	1 persons	40.82	11.54	6.43	2.47	6.20	0.20	0.78	11.07
	2~4 persons	80.62	27.90	11.42	4.79	10.05	0.42	1.17	38.26
	5~9 persons	158.67	30.76	22.44	9.22	13.97	6.35	1.50	42.74
	10~14 persons	238.81	30.69	9.30	19.02	29.43	4.09	20.49	55.31
	15 and more persons	376.47	66.74	18.39	19.46	33.33	8.18	5.21	69.04

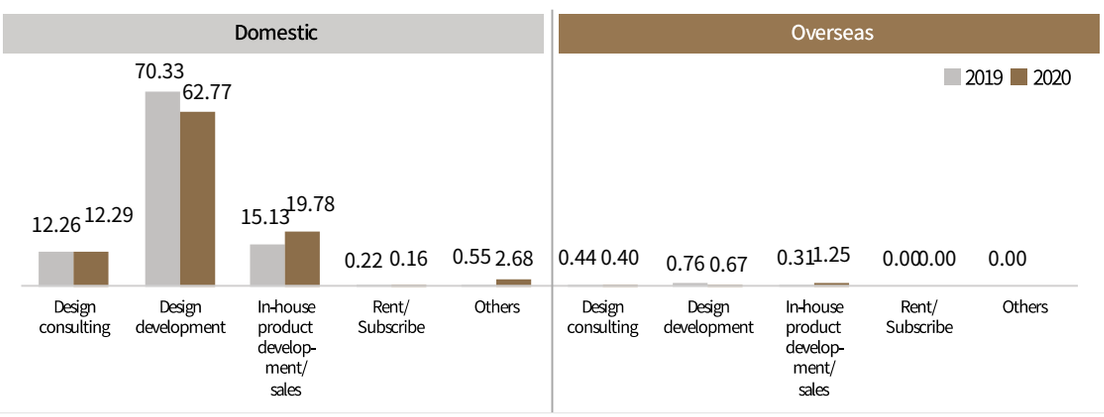
3. Sales composition by service type

- Regarding the Sales composition by service type(Domestic) is highest in ‘In-house product development/sales’ (40.65 cases) followed by ‘Design development’ (26.69 cases), etc.
- But, the ratio of sales composition by service type is highest in ‘Domestic design development’(62.77%).

▾ **Sales composition by service type** (Unit : Case)



▾ **The ratio of sales composition by service type** (Unit : %)



▾ **Amount sales composition by service type** (Unit : Million KRW)

	Domestic					Overseas				
	Design consulting	Design development	In-house product develop-ment/ sales	Rent/ Subscribe	Others	Design consulting	Design development	In-house product develop-ment/ sales	Rent/ Subscribe	Others
2020	61.76	383.81	121.40	0.73	21.35	2.01	2.46	13.71	0.00	0.00

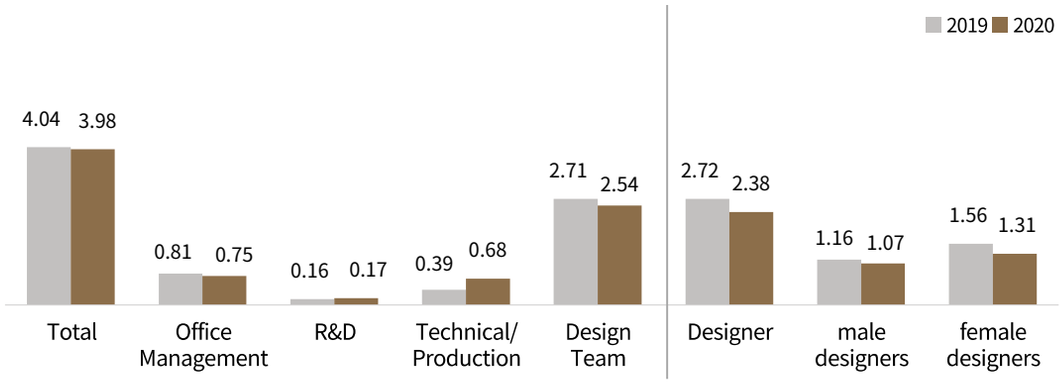
※ For sales by service type, the proportion of sales was surveyed up to the 2019, but, the sales were surveyed from the 2020.

4. Status of employees

- Average number of manpower of specialized design companies reached 3.98, down slightly year-on-year(4.04 in 2019).
- Average number of male designer reached 1.07 and female designer is 1.31.

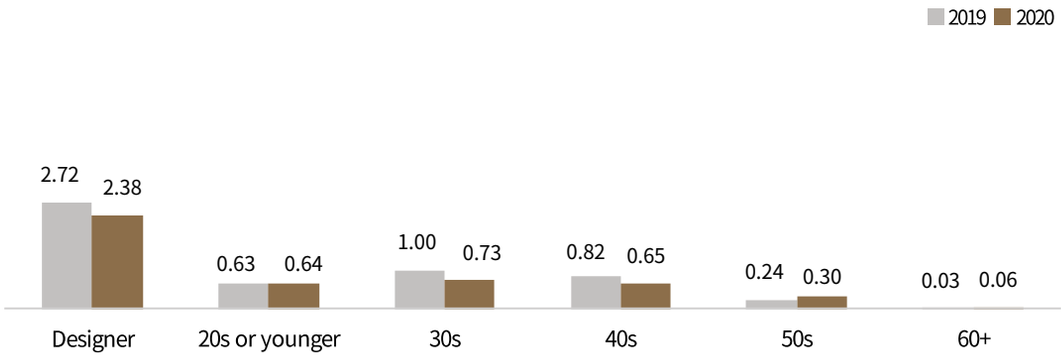
Status of employees

(Unit : Persons)



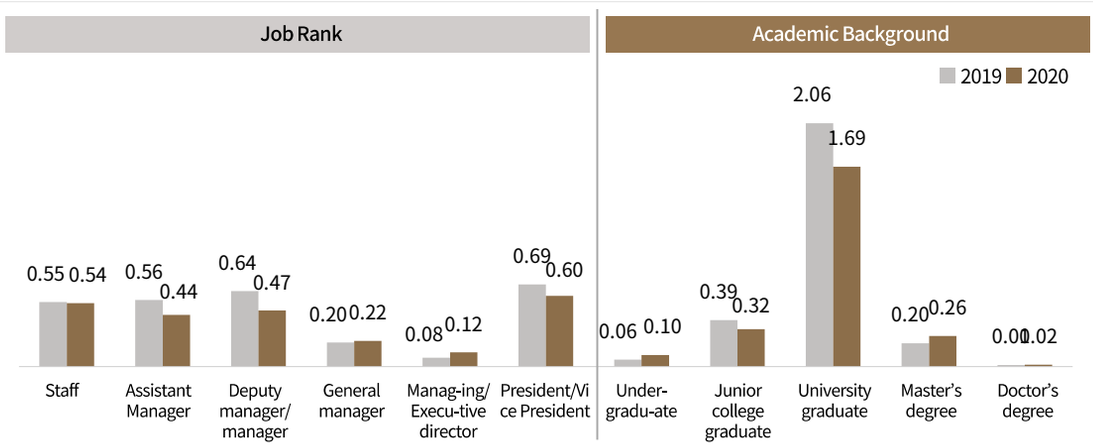
Number of designer by age

(Unit : Persons)



Number of designer by job rank and academic background

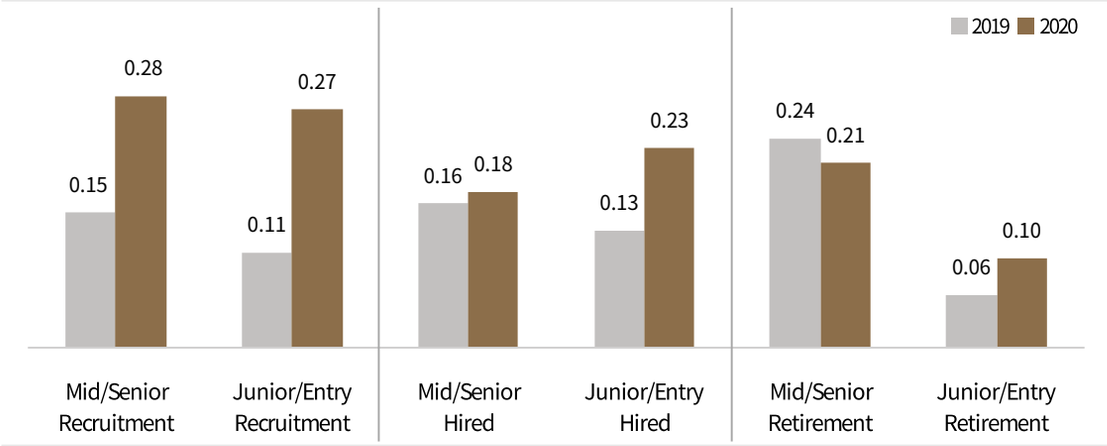
(Unit : Persons)



5. Designer Recruitment/Hired/Retirement

- The average number of mid/senior designers hired is 0.18, and the average number of junior/entry designers hired is 0.23.
- Meanwhile, the average number of retired mid/senior designers is 0.21, and the average number of retired junior/entry designers is 0.10.

▾ **Designer Recruitment/Hired/Retirement** (Unit : Persons)



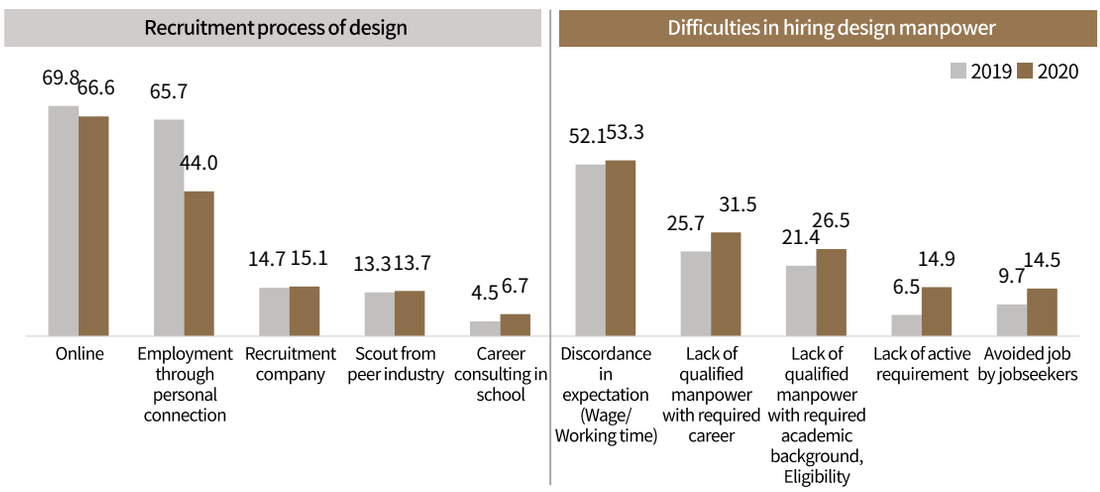
▾ **Designer Recruitment/Hired/Retirement** (Unit : Persons)

Classification		Mid/Senior Recruitment	Junior/Entry Recruitment	Mid/Senior Hired	Junior/Entry Hired	Mid/Senior Retirement	Junior/Entry Retirement
Total		**0.28**	**0.27**	**0.18**	**0.23**	**0.21**	**0.10**
Type	**Product design**	0.35	0.28	0.24	0.29	0.23	0.11
	Visual design	0.26	0.31	0.12	0.22	0.26	0.06
	Interior design	0.27	0.26	0.24	0.25	0.16	0.15
	Fashion/textile design	0.27	0.14	0.11	0.09	0.12	0.10
Scale	**1 persons**	0.08	0.03	0.03	0.01	0.08	0.01
	2~4 persons	0.24	0.26	0.14	0.21	0.15	0.12
	5~9 persons	0.46	0.51	0.35	0.44	0.39	0.11
	10~14 persons	1.02	0.97	0.69	0.98	0.77	0.38
	15 and more persons	1.37	0.80	0.93	0.63	1.07	0.27

6. Process and Difficulties of design manpower recruitment

- As for the design manpower recruitment path (Multiple responses), 'Online' (66.6%) was the highest, followed by 'Employment through personal connection' (44.0%), 'Recruitment company' (15.1%).
- As for difficulties in recruiting, ‘discordance in expectations(wages and working times)’ (53.3%) was the highest.

▼ **Process and Difficulties of design manpower recruitment** (Top 5, Multiple responses, Unit : %)



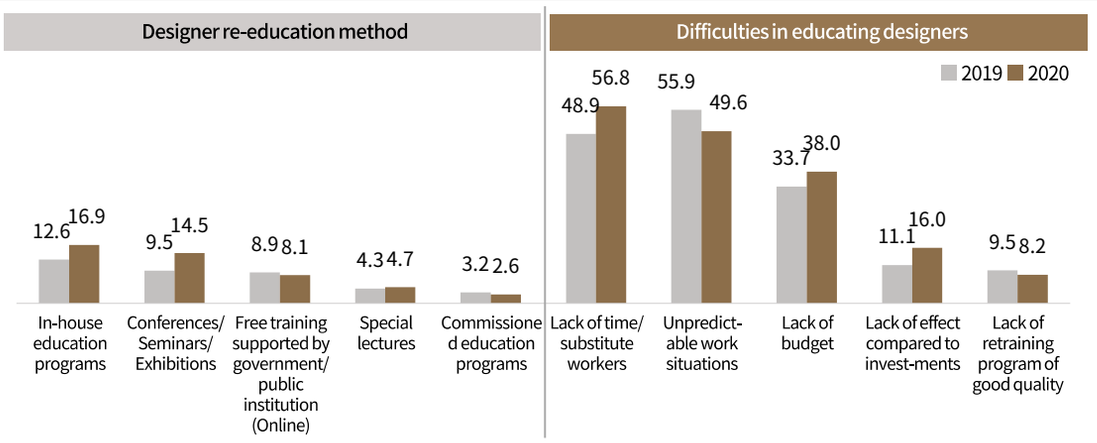
▼ **Process and Difficulties of design manpower recruitment** (Top 5, Multiple responses, Unit : %)

Classification		Recruitment Process					Difficulties				
		Online	Employment through personal connection	Recruitment company	Scout from peer industry	Career consulting in school	Discordance in expectation (Wage/ Working time)	Lack of qualified manpower with required career	Lack of qualified manpower with required back ground	Lack of active requirement	Avoided job by jobseekers
Total		**66.6**	**44.0**	**15.1**	**13.7**	**6.7**	**53.3**	**31.5**	**26.5**	**14.9**	**14.5**
Type	**Product design**	67.9	49.7	18.1	12.5	7.0	57.3	38.5	30.3	14.4	16.3
	Visual design	71.7	41.0	17.0	14.1	9.9	64.0	33.5	37.0	8.0	7.5
	Interior design	63.7	45.8	8.7	12.7	4.7	40.1	24.8	15.4	22.0	22.1
	Fashion/textile design	56.6	38.2	19.6	17.0	1.7	46.3	28.8	14.9	19.6	13.6
Scale	**1 persons**	54.7	46.7	3.3	13.5	5.2	46.3	18.2	19.2	21.0	16.2
	2~4 persons	65.9	46.1	17.5	13.7	7.1	57.2	33.4	28.9	13.5	13.6
	5~9 persons	84.0	35.4	21.0	14.9	7.2	51.3	42.6	30.7	12.0	15.8
	10~14 persons	83.2	37.5	29.0	12.7	12.6	47.0	50.6	29.9	7.0	16.4
	15 and more persons	91.6	24.5	38.1	10.3	3.9	63.8	45.2	23.6	8.3	4.9

7. Designer Re-education and Difficulties

- As for the designer Re-education conducted in 2020, ‘In-house education programs’ (16.9%) was the highest, followed by ‘Conference/Seminars/Exhibitions’ (14.5%).
- As for difficulties in education, ‘Lack of time/substitute workers’ (56.8%) and ‘Unpredictable work situation’ (49.6%) were followed in that order.

▾ **Designer Re-education and Difficulties** (Top 5, Multiple responses, Unit : %)



▾ **Designer Re-education and Difficulties** (Top 5, Multiple responses, Unit : %)

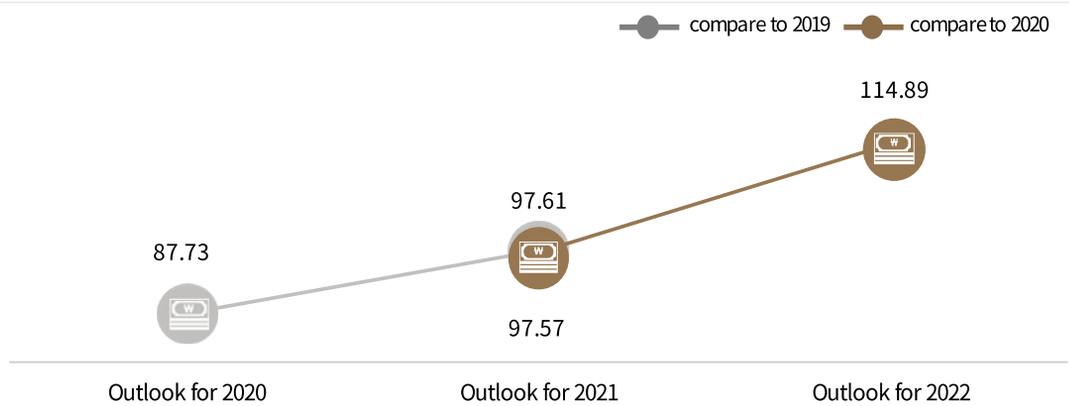
Classification		Designer Re-education					Difficulties				
		In-house education program	Conferences/ Seminars/ exhibitions	Free supported by government/ public institution (Online)	Special lectures	Commissioned education programs	Lack of time/ substitute workers	Unpredictable work situations	Lack of budget	Lack of effect compared to investments	Lack of retraining program of good quality
Total		**16.9**	**14.5**	**8.1**	**4.7**	**2.6**	**56.8**	**49.6**	**38.0**	**16.0**	**8.2**
Type	**Product design**	19.7	13.1	16.0	3.4	4.8	49.0	53.6	35.6	22.4	13.0
	Visual design	22.7	19.2	8.9	5.7	3.1	55.6	51.6	44.3	13.0	5.3
	Interior design	13.0	9.6	2.4	5.0	1.1	65.5	46.8	37.5	11.1	7.9
	Fashion/textile design	4.2	14.3	5.7	3.5	0.7	53.9	43.5	24.9	25.0	9.3
Scale	**1 persons**	6.5	9.9	2.6	3.9	1.1	53.4	41.6	46.1	16.6	6.0
	2~4 persons	17.0	13.9	8.4	4.6	2.5	56.5	51.4	36.1	15.4	8.6
	5~9 persons	31.6	21.9	14.8	6.0	4.1	62.1	54.2	35.7	14.6	10.9
	10~14 persons	28.6	25.4	19.9	4.2	7.1	64.4	62.1	26.8	18.5	4.4
	15 and more persons	29.2	20.1	8.9	9.4	7.2	61.4	56.3	19.2	27.2	14.2

8-1. Outlook for Sales

- Compared to 2020, average outlook for 2021 sales reached 97.57%, average outlook for 2022 sales reached 114.89%.
- The positive outlook is high for 5-9 persons (102.26%) in 2021 and 15 and more persons (125.07%) in 2022.

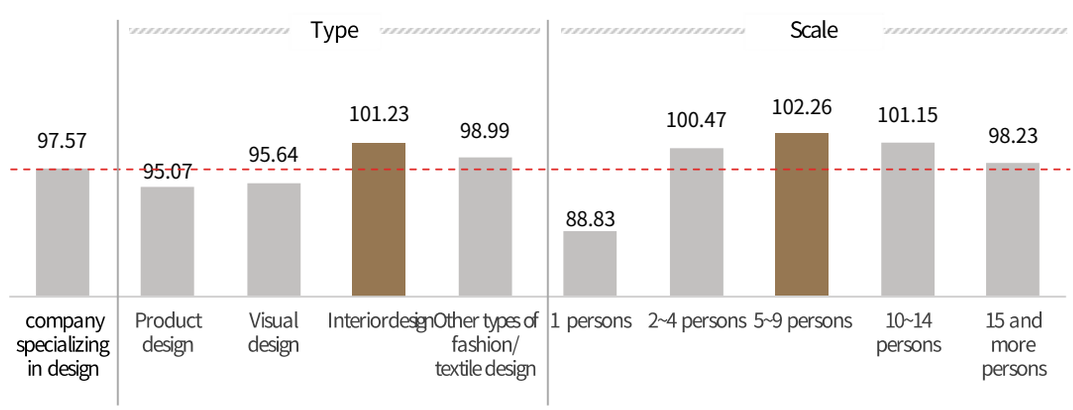
Outlook for Sales

(Unit : %)



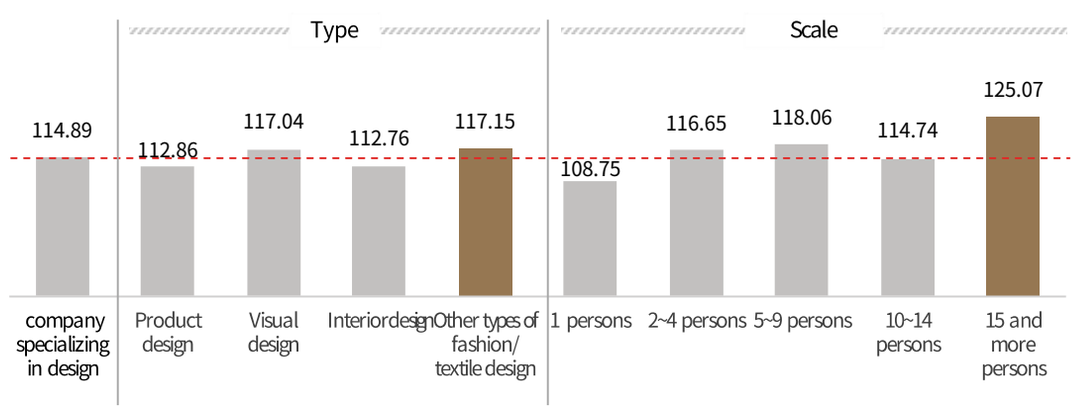
Outlook for 2021 Sales

(Unit : %)



Outlook for 2022 Sales

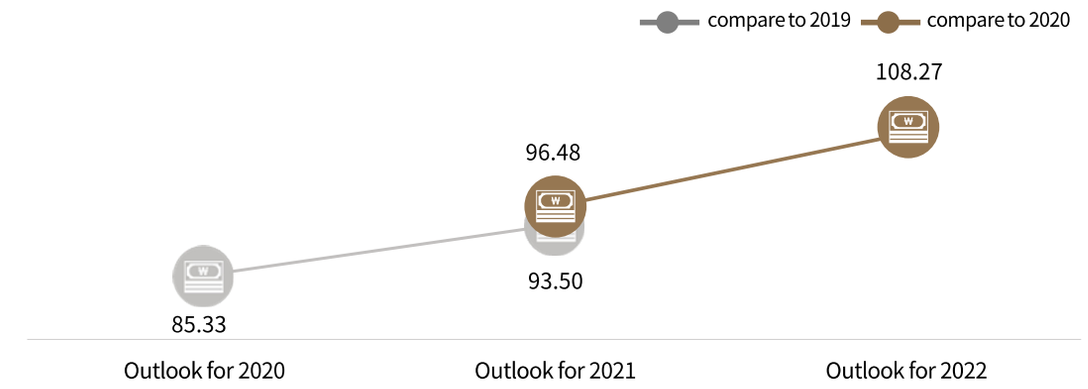
(Unit : %)



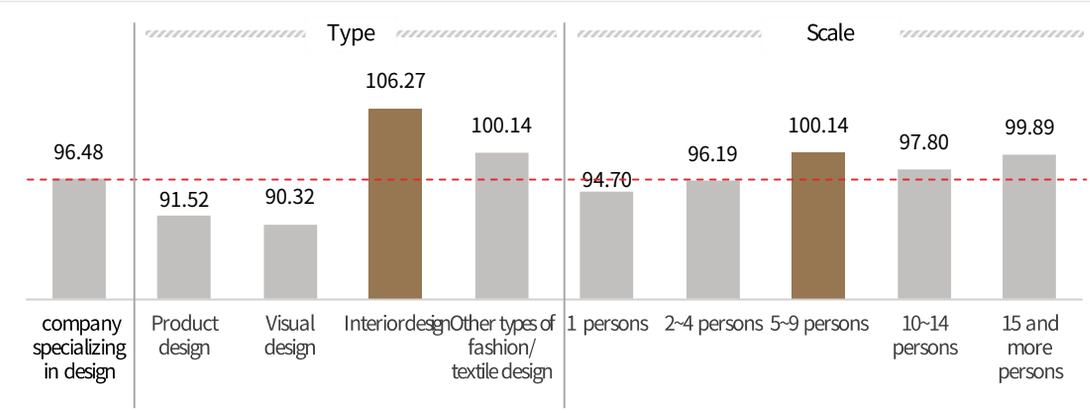
8-2. Outlook for Business expense

- Compared to 2020, average outlook for 2021 business expense reached 96.48%, average outlook for 2022 business expense reached 108.27%.
- The positive outlook is high among 5 to 9 persons (100.14% in 2021, 114.45% in 2022).

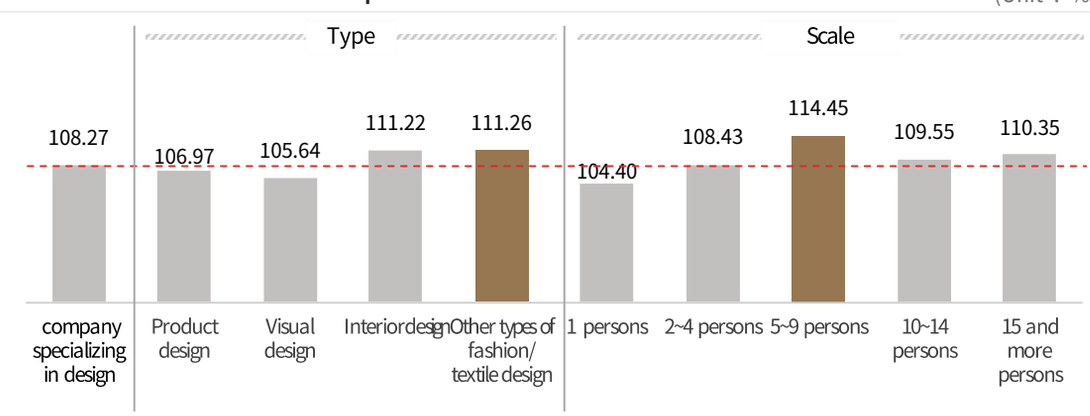
▾ **Outlook for Business expense** (Unit : %)



▾ **Outlook for 2021 Business expense** (Unit : %)



▾ **Outlook for 2022 Business expense** (Unit : %)

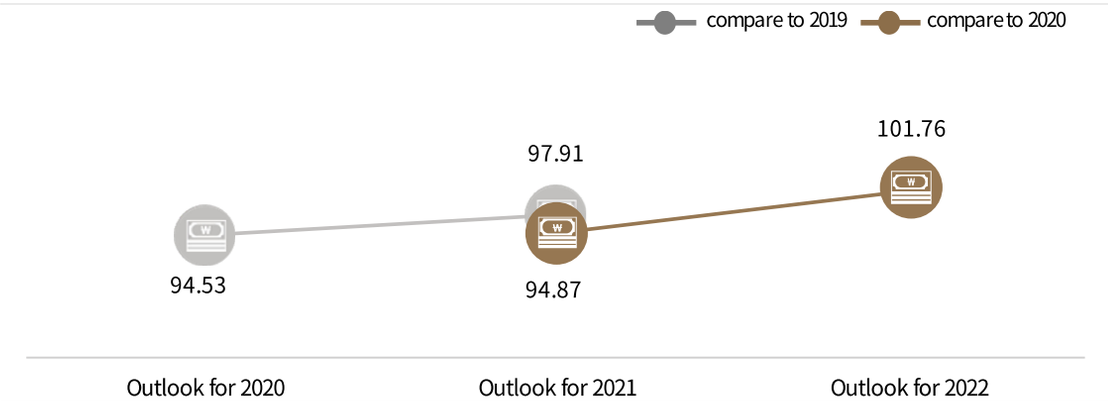


8-3. Outlook for R&D expenses

- R&D expenses is also expected to decrease (94.87%) in 2021, but slightly increase (101.76%) in 2022.
- The positive outlook is high among 5 to 9 persons (101.35% in 2021, 107.25% in 2022).

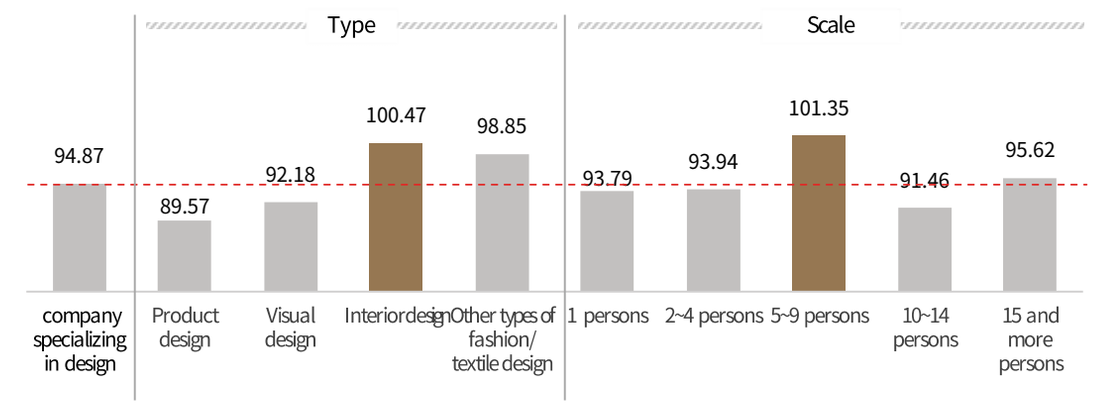
Outlook for R&D expenses

(Unit : %)



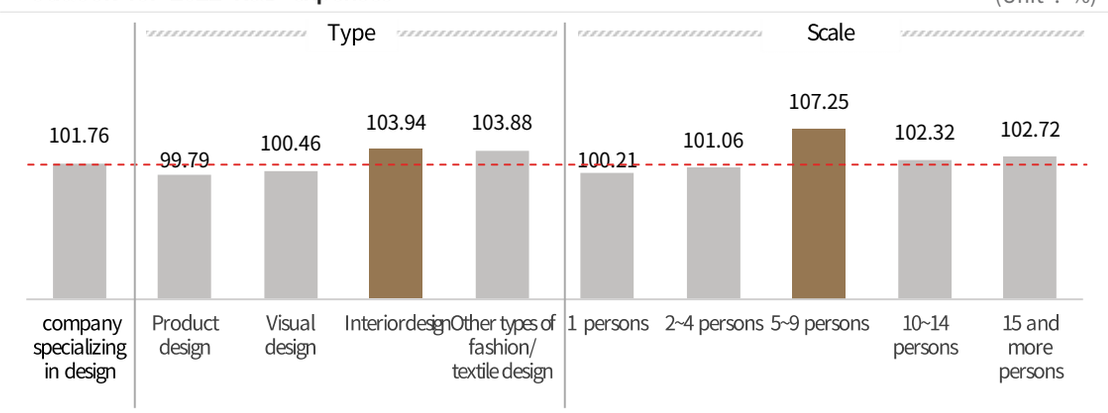
Outlook for 2021 R&D expenses

(Unit : %)



Outlook for 2022 R&D expenses

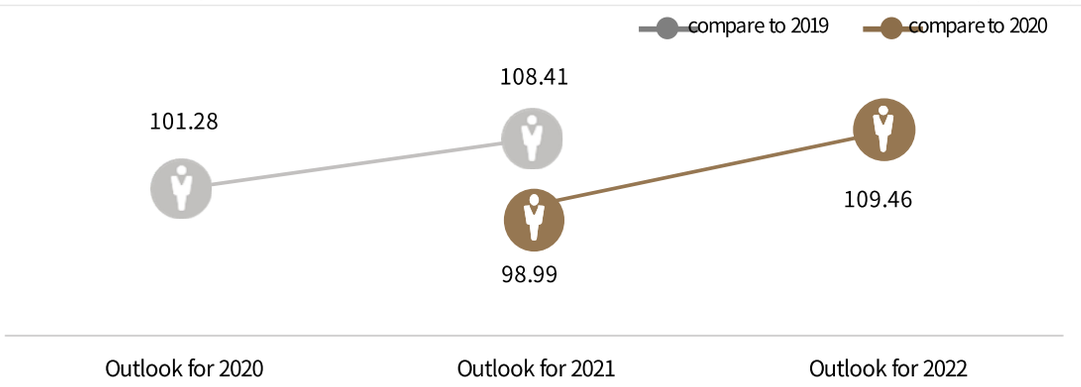
(Unit : %)



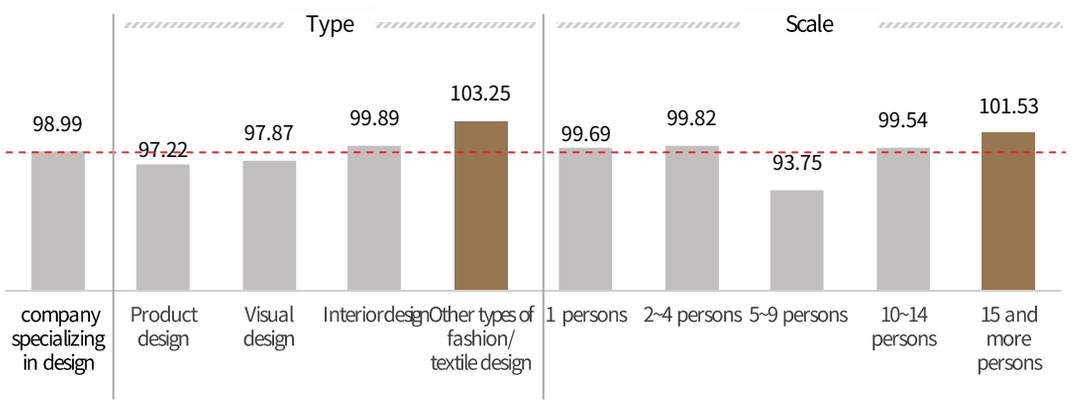
8-4. Outlook for Designer employment

- Designer employment outlook is expected to decrease (98.99%) in 2021, but increase (109.46%) in 2022.
- The positive outlook is high for 15 and more persons (101.53%) in 2021 and 1 person (114.38%) in 2022.

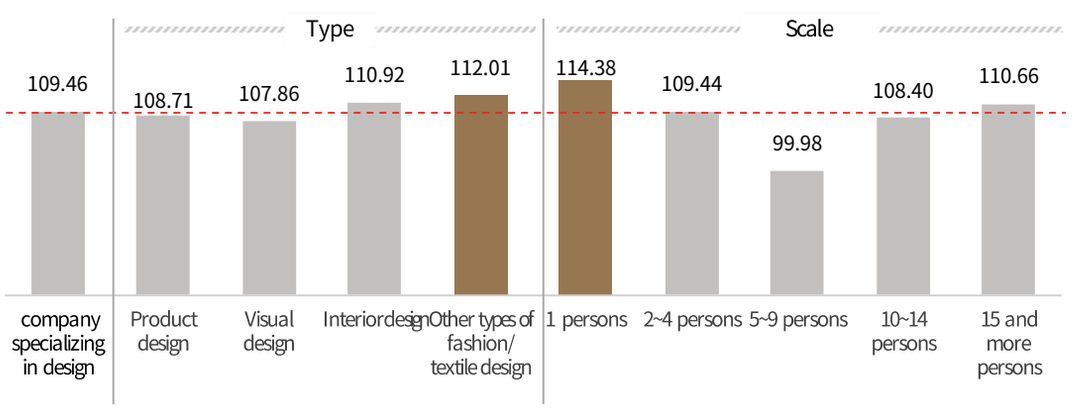
▾ **Outlook for Designer employment** (Unit : %)



▾ **Outlook for 2021 Designer employment** (Unit : %)



▾ **Outlook for 2022 Designer employment** (Unit : %)

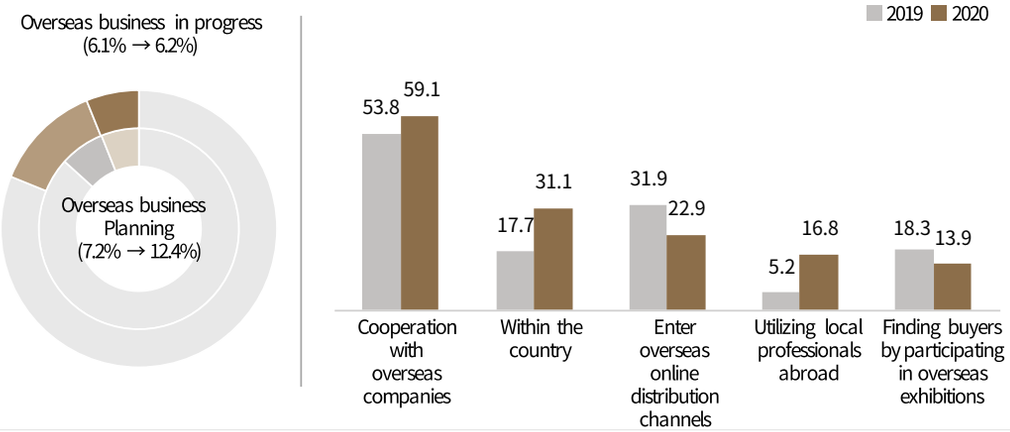


9. Status of Overseas Business

- Among specialized design companies, the percentage of those that have overseas business in progress 6.2%.

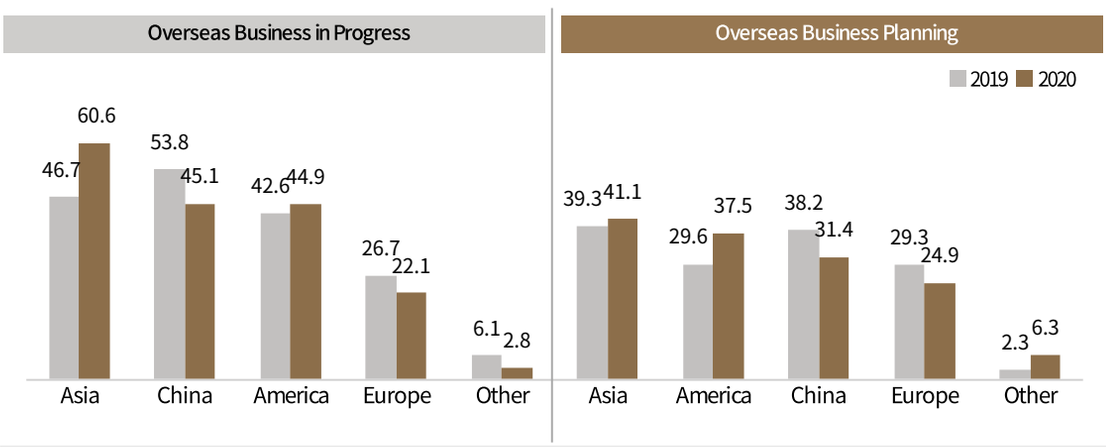
Status of overseas business and method

(Top 5, Multiple responses, Unit : %)



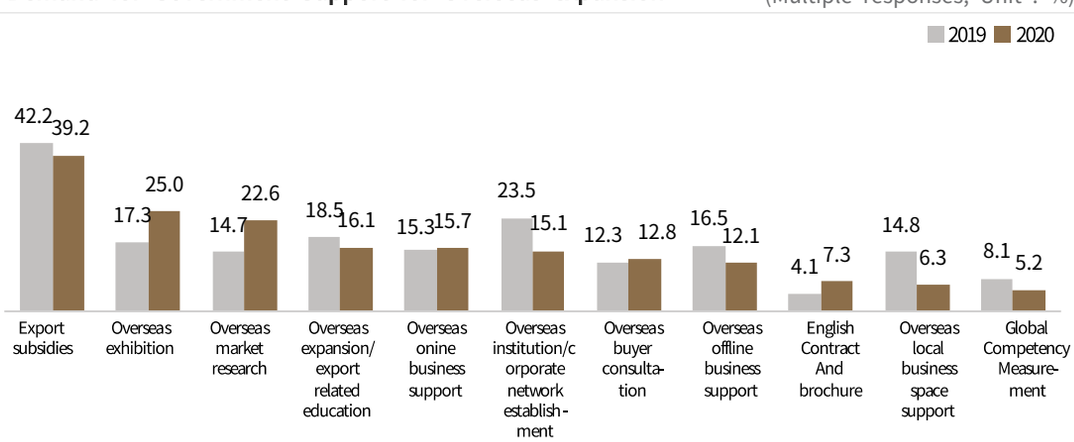
Exchange overseas area

(Multiple responses, Unit : %)



Demand for Government Support for Overseas expansion

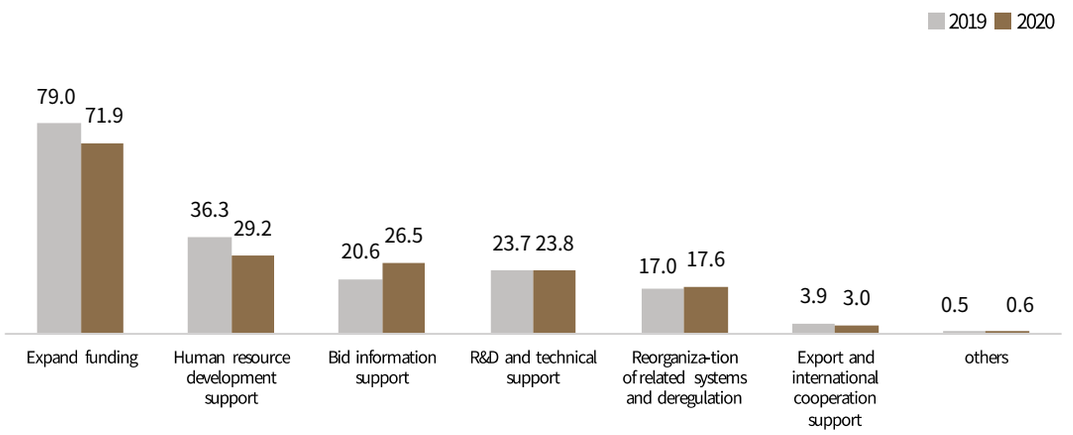
(Multiple responses, Unit : %)



10. Demand for Government Support for Business Activation

- Regarding demand for government support for business activation, ‘Expand funding’ accounts for the highest proportion with 71.9%, followed by ‘Human resource development support’ (29.2%), ‘Bid information support’ (26.5%), ‘R&D technical support’ (23.8%), etc.

▾ **Demand for Government Support for Business Activation** (Multiple responses, Unit : %)



▾ **Demand for Government Support for Business Activation** (Multiple responses, Unit : %)

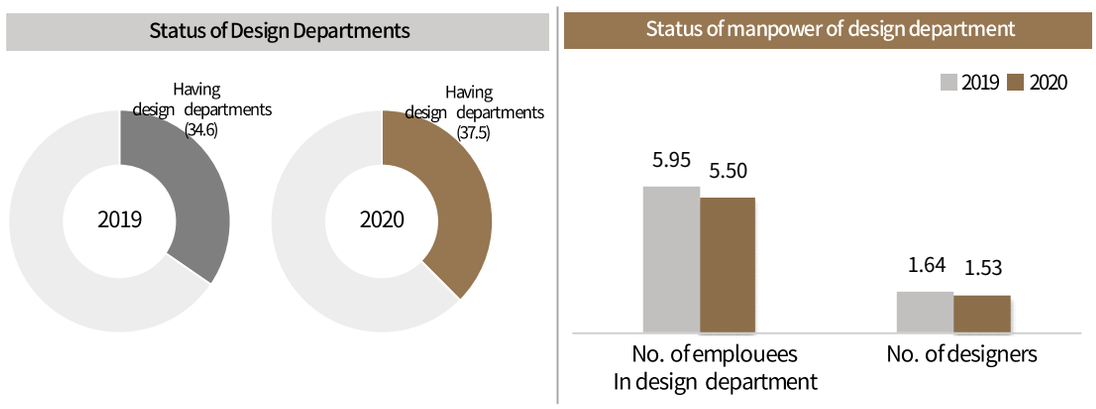
Classification		Expand funding	Human resource development support	Bid information support	R&D and technical support	Reorhanization of related systems and deregulation	Export and international cooperation support	Others
Total		**71.9**	**29.2**	**26.5**	**23.8**	**17.6**	**3.0**	**0.6**
Type	**Product design**	76.6	31.8	20.1	34.8	20.2	2.8	0.0
	Visual design	65.3	24.5	26.5	25.9	21.6	2.0	0.8
	Interior design	73.7	36.6	32.6	15.8	14.2	1.6	0.0
	Fashion/textile design	78.5	21.0	23.7	16.9	9.8	9.7	2.5
Scale	**1 persons**	72.5	18.5	23.6	20.6	20.3	1.7	1.2
	2~4 persons	73.4	32.4	28.2	23.0	16.1	3.1	0.5
	5~9 persons	66.5	31.6	28.2	29.7	19.0	5.1	0.0
	10~14 persons	70.2	44.6	14.3	35.2	14.2	4.2	0.0
	15 and more persons	65.0	41.0	28.2	27.5	19.6	4.2	0.0

03 Public Sector

1. Status of Design Departments and Manpower of Design Department

- Among Central and local government, those ‘with a design department’ reached 37.5%. (34.6% in 2019)
- Average number of design department reached 5.50 (5.95 in 2019), and designers reached 1.53 (1.64 in 2019), decreased compared to the previous year.

▾ **Status of Design Departments and Manpower of Design Department** (Unit : %)



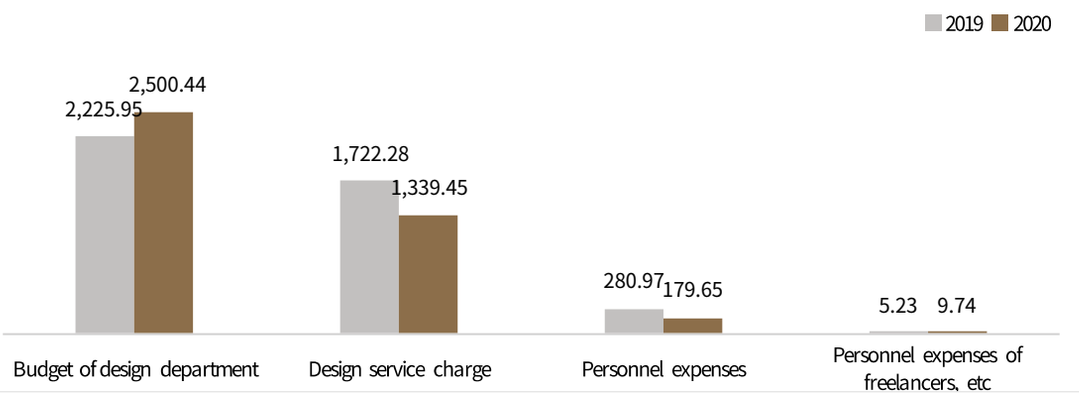
▾ **Status of Design Departments and Manpower of Design Department** (Unit : %, Persons)

Classification		2019			2020		
		Having design departments	Average no. of employees	Average no. of designers	Having design departments	Average no. of employees	Average no. of designers
Total		**34.6**	**5.95**	**1.64**	**37.5**	**5.50**	**1.53**
Type	Central government	6.5	11.00	1.47	9.7	5.00	1.46
	Local government	38.3	5.83	1.67	41.2	5.52	1.54
	- City/ province	82.4	7.86	1.93	76.5	5.21	1.14
	- City/ country/ district	34.9	5.46	1.63	38.5	5.57	1.59

2. Budget of Design Department

- Concerning the budget of design department,
  average amount of design service charge reached 1,339.45 million KRW, personnel expenses of design department reached 179.65 million KRW and personnel expenses of freelancers reached 9.74 million KRW.

▾ **Budget of Design Department** (Unit : Million KRW)



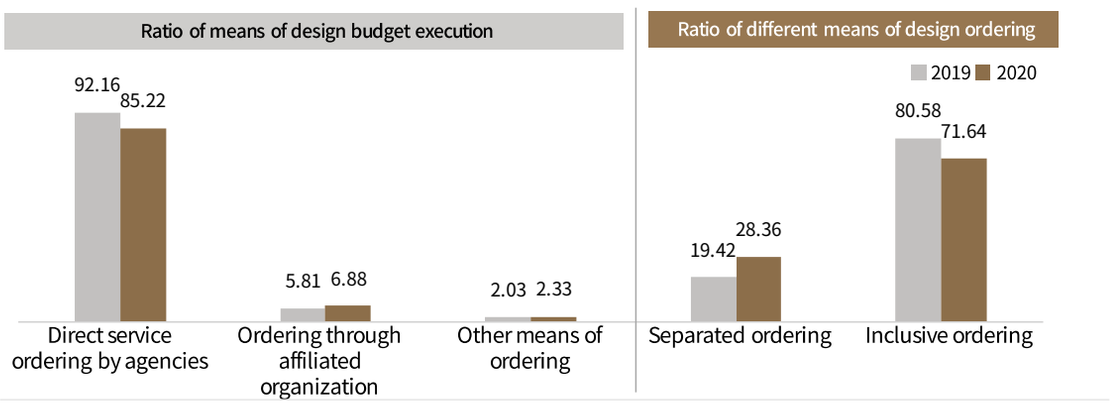
▾ **Budget of Design Department** (Unit : Million KRW)

Classification		Budget of design department	Design service charge	Personnel expenses	Personnel expensese of freelancers, etc
Total		**2,500.44**	**1,339.45**	**179.65**	**9.74**
Type	Central government	25,979.00	1,140.33	90.00	0.00
	Local government	1,781.70	1,345.54	182.40	10.04
	- City/ province	4,976.92	4,514.08	246.23	43.85
	- City/ country/ district	1,293.02	860.94	172.64	4.87

3. Proportions of Means of Budget Execution and Design Ordering

- As for the design budget execution method,
  'Direct service ordering by agencies' was the highest at 85.22%,
  and 'includes design project within service' showed the proportion at 71.64%.

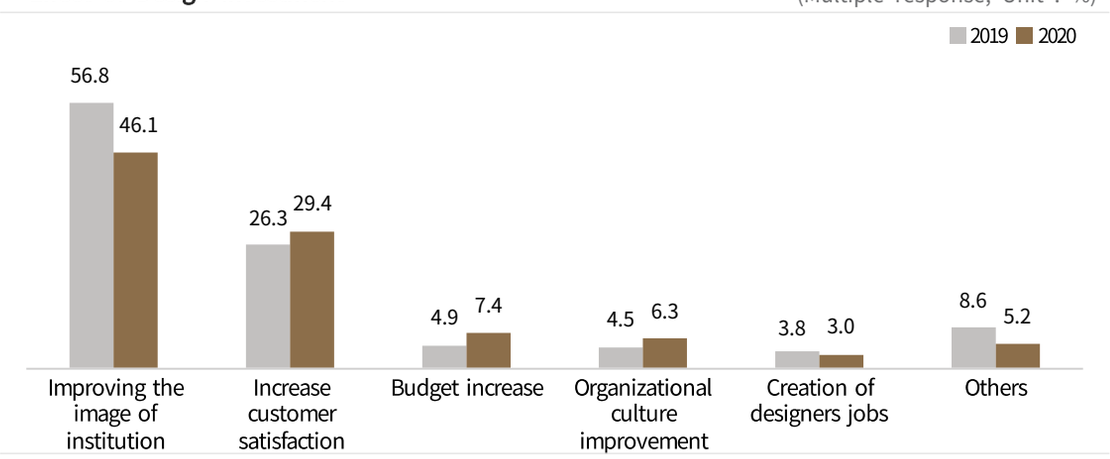
Proportions of Means of Budget Execution and Design Ordering (Unit : %)



4. Effect of Design Investment

- Concerning the effect of design investment,
  'Improving the image of institution' accounts for the highest proportion with 46.1%, followed by 'Increase customer satisfaction' (29.4%), 'Budget increase' (7.4%), etc.
- Compared to the previous year, the 'Improving the image of institution' (56.8% → 46.1%) decreased, but the 'Increase customer satisfaction' (26.3% → 29.4%) showed an increase.

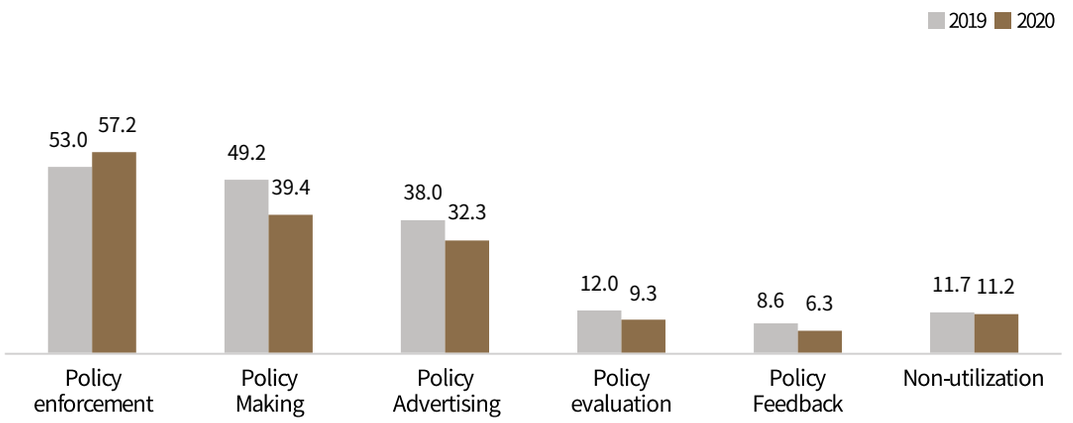
Effect of Design Investment (Multiple response, Unit : %)



5. Utilization of Design in Public Policy Process

- Regarding utilization of design in public policy process,
  'Policy enforcement' accounts for the highest proportion with 57.2%,
  followed by 'Policy Making'(39.4%), 'Policy Advertising'(32.3%), etc.
- 'Policy enforcement' increased from the previous year (53.0% → 57.2%),
  but decreased in 'Policy Making' (49.2% → 39.4%), 'Policy Advertising' (38.0% → 32.3%).

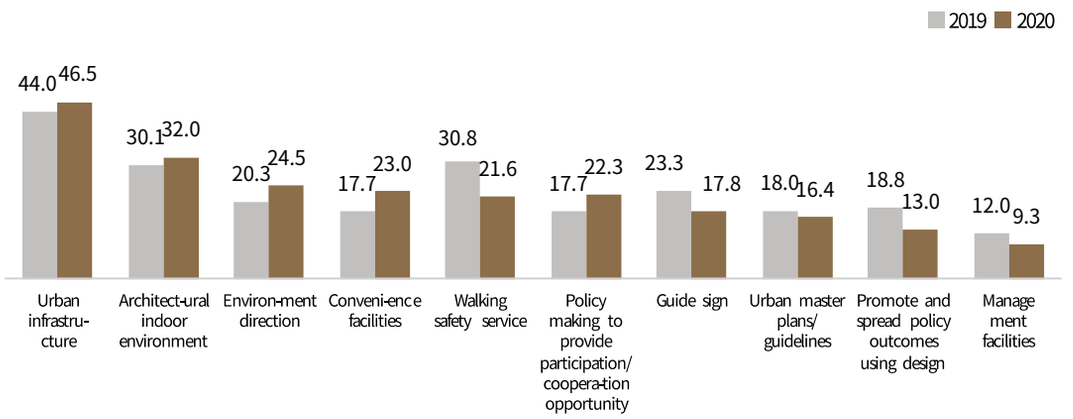
▾ Utilization of Design in Public Policy Process (Multiple response, Unit : %)



6. Fields of design utilization

- Concerning the fields of design utilization,
  'Urban infrastructure' accounts for the highest proportion with 46.5%, followed by 'Architectural indoor environment' (32.0%), 'Environment direction' (24.5%), 'Convenience facilities' (23.0%), etc.

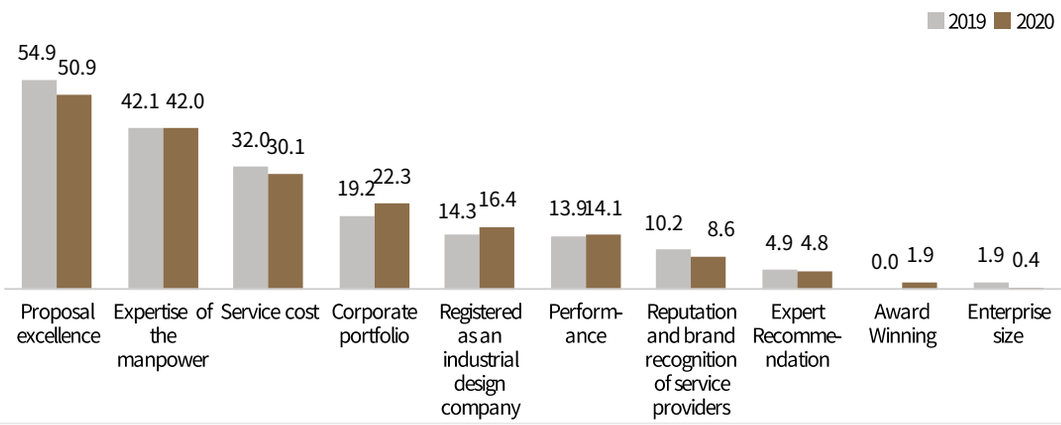
▾ Fields of design utilization (Top 10, Multiple response, Unit : %)



7. Factors to consider when selecting design-related company/experts

- Regarding factors to consider when selecting design-related company/experts, it is presented as ‘Proposal excellence’ (50.9%), ‘Expertise of the manpower’ (42.0%), ‘Service cost’(30.1%), etc.
- Overall, while the results were similar to those of 2019, the ‘Corporate portfolio’ (19.2% → 22.3%) showed a slight increase.

▾ Factors to consider when selecting design-related company/experts (multiple response, Unit : %)



2021 KOREA DESIGN STATISTICAL DATA

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KOREA DESIGN STATISTICAL DATA BASED ON 2020 DATA

Ministry of Trade, Industry and Energy

KOREA INSTITUTE OF DESIGN PROMOTION