

May 29, 2023

Results of the Communication Usage Trend Survey of 2022

The Ministry of Internal Affairs and Communications (MIC) has compiled the results of a communication usage trend survey, which investigated the usage state of information and communications services in households and businesses at the end of August 2022.

The key findings of this survey are shown in Attachment 1 (PDF) and a summary in Attachment 2 (PDF).

The detailed survey results will be posted in the Information & Communications Statistics Database and e-Stat, and data on the posted content will be opened to the public in a data format suitable for machine-reading applications (in CSV).

(URL: <https://www.soumu.go.jp/johotsusintokei/statistics/statistics05.html>)

[Main points of this survey results]

- 1 The ownership rate of smartphones has steadily grown to over 90%, with 90.1% of households. And 77.3% of individuals possessing a smartphone.
- 2 Regarding personal internet device usage, smartphones continued to exceed personal computers, with around 90% of individuals aged 20 to 59 using smartphones. The percentage of individuals using social networking services (SNS) has grown steadily and reached 80% overall.
- 3 While the percentage of companies implementing telework continued to exceed 50%, the percentage of companies planning to introduce telework in the future was declining. The highest proportion of companies (87.4%) selected “responding to COVID-19 infections (preventing infections and ensuring business continuity)” as the purpose for introducing the system.
- 4 The percentage of companies utilizing cloud computing services continued to exceed 70%; among these, 89.0% reported the services to be either “very effective” or “somewhat effective.”

[Survey Outline]

The communication usage trend survey targets households (whole households and their members) and corporate. It has been conducted as a general statistical survey based on the Statistics Act (Act No. 53 of 2007) every year since 1990 (the corporate survey was added in 1993 and has been conducted every year since then except 1994. The household members survey has been conducted since 2001). In addition, the households survey has targeted on a prefecture-by-prefecture basis since 2010.

	Household survey	Corporate survey
Time of survey	End of August 2022	
Areas surveyed	Nationwide	
Range of attributes and survey units	Each household where the head of the household is 20 years of age or older (as of April 1, 2022) And its members aged six or older	Companies with 100 permanent employees or more, excluding those engaged in public businesses

Number of samples (Number of valid distributions)	40,592 households (39,570 households)	5,965 companies (4,785 companies)
Number of valid replies [percentage]	15,968 households (39,577 persons) [40.4%]	2,428 companies [50.7%]
Survey items	State of use of communications services, possession of information and communications devices, etc.	
Survey method	Questionnaires were distributed by mail and then collected either by mail or online (using email for each household and an electronic survey form for each business).	

Contact information

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Highlights of the Communications Usage Trend Survey in 2022

<Survey Outline>

- MIC has conducted this survey annually since 1990, targeting households (households and household members) and businesses, as a general statistics survey in accordance with the Statistics Act (Act No. 53 of 2007). The survey looks into communication service usage, information and communication equipment ownership, etc. (Survey slips are sent by postal mail and collected by postal mail or online.)
The survey took place in late August 2022.
- The household survey targets households headed by householders aged 20 or older (as of April 1, 2022) and household members aged 6 or older (40,592 households).
- The business survey targets businesses with 100 or more regular employees in industries other than public affairs (5,965 businesses).

Highlights of the Survey

- The ownership rate of smartphones has steadily grown to over 90%, with 90.1% of households. And 77.3% of individuals possessing a smartphone.
- Regarding personal internet device usage, smartphones continued to exceed personal computers, with around 90% of individuals aged 20 to 59 using smartphones. The percentage of individuals using social networking services (SNS) has grown steadily and reached 80% overall.
- While the percentage of companies implementing telework continued to exceed 50%, the percentage of companies planning to introduce telework in the future was declining. The highest proportion of companies (87.4%) selected “responding to COVID-19 infections (preventing infections and ensuring business continuity)” as the purpose for introducing the system.
- The percentage of companies utilizing cloud computing services continued to exceed 70%; among these, 89.0% reported the services to be either “very effective” or “somewhat effective.”

<Notes>

- Graphs with titles including (businesses) are based on the survey of businesses and colored orange. Those with titles including (households) are based on the survey of households, and including (individuals) are based on the survey of household members. Both (households) and (individuals) are colored blue.
- Non-responses were excluded except in the graphs of “1. Proliferation of Communication Devices” in Page 2 and “Introduction of telework” in Page 5.
- Figures in the chart are rounded to the nearest unit, and individual figures may not add up to totals due to rounding.

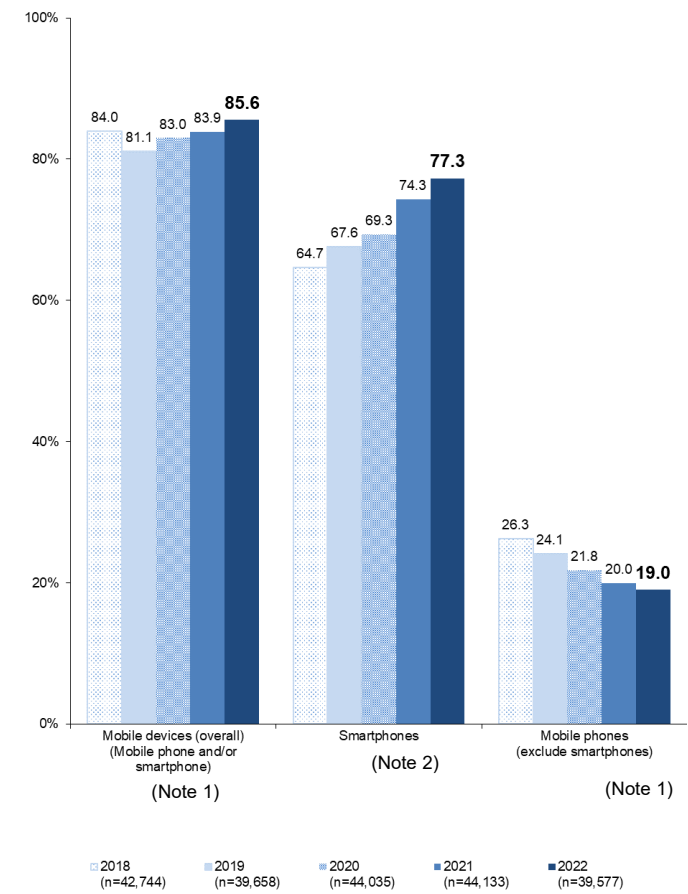
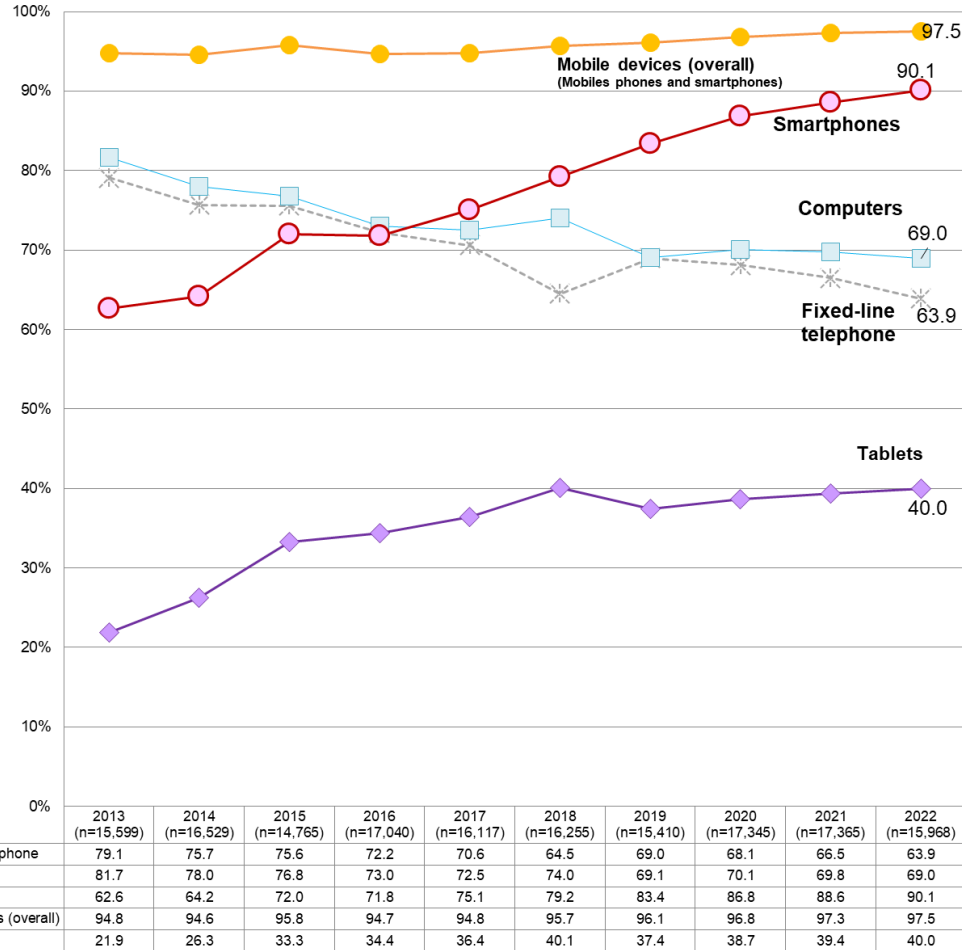
1. Proliferation of Communication Devices

Ownership of common communication devices (households) (2013-2022)

Ownership of mobile devices (individuals) (2018-2022)

The household ownership rate for smartphones tops 90%, to 90.1%. The rate levels off for personal computers (69.0%) and for tablet terminals (40.0%). The rate for fixed telephones is in a downward trend, standing at 63.9%.

The ownership rate among individuals is in on an upward trend for smartphones (77.3%) while being in a downward trend for other mobile phones (19.0%).



(Multiple responses accepted)

(Multiple responses accepted)

Note: Each figure is the percentage of all households in each year's survey that own the respective communication device.

(Note 1) "Mobile devices (overall)" and "mobile phones (excluding smartphones)" include PHS handsets on or before 2020.

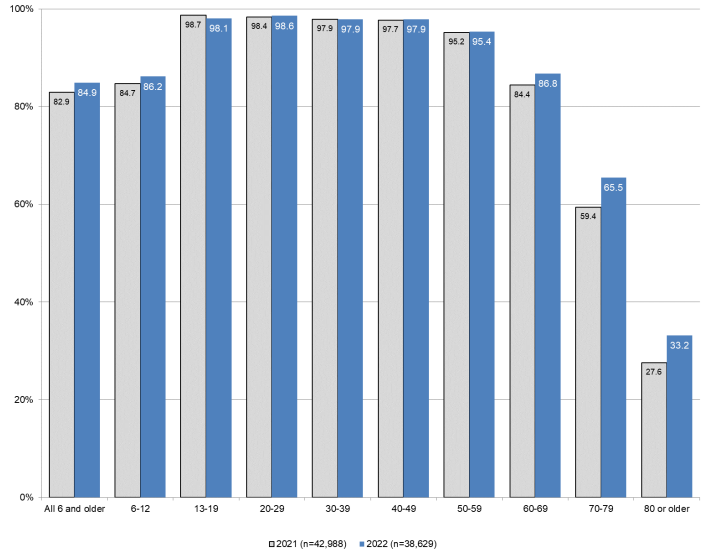
"Mobile devices (overall)" include PHS handsets on or before 2020.

(Note 2) "Smartphones" do not include 5G terminals on or before 2020.

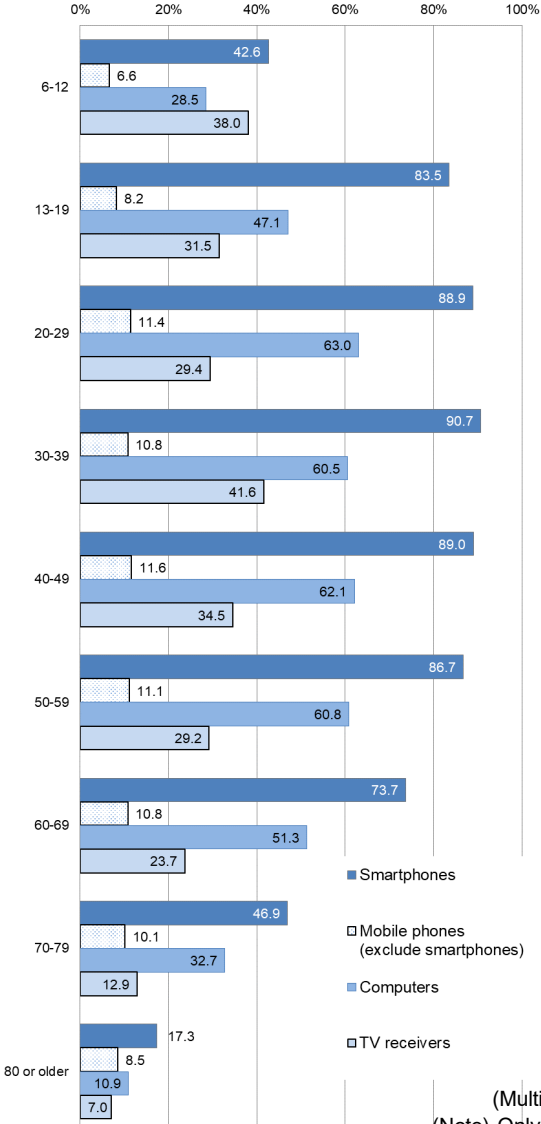
2. Internet Usage Trends

The percentage of Internet users exceeds 90% for people aged between 13 and 59 and is on an upward trend for people aged 70 or higher. Smartphones are used more frequently than computers for internet access. About 90% of individuals aged between 20 and 59 use smartphones.

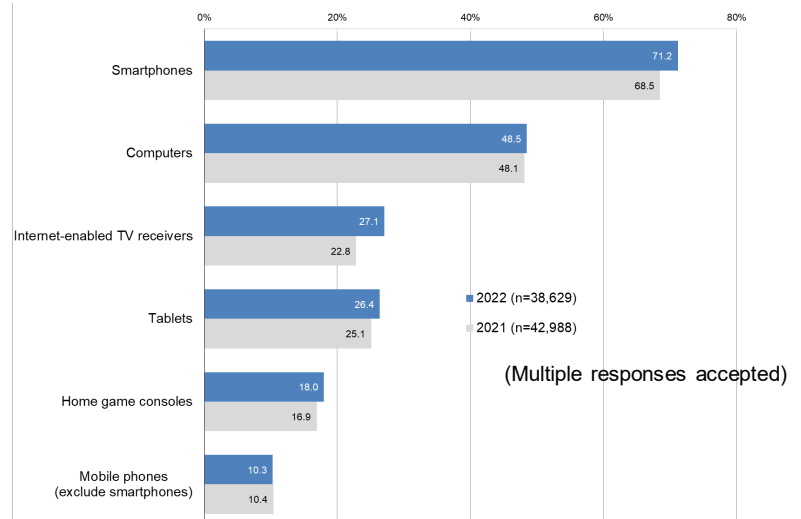
Internet usage (individuals)



Usage of internet access devices by age group (individuals)



Usage of internet access devices (individuals)



(Multiple responses accepted)
(Note) Only major devices are covered.

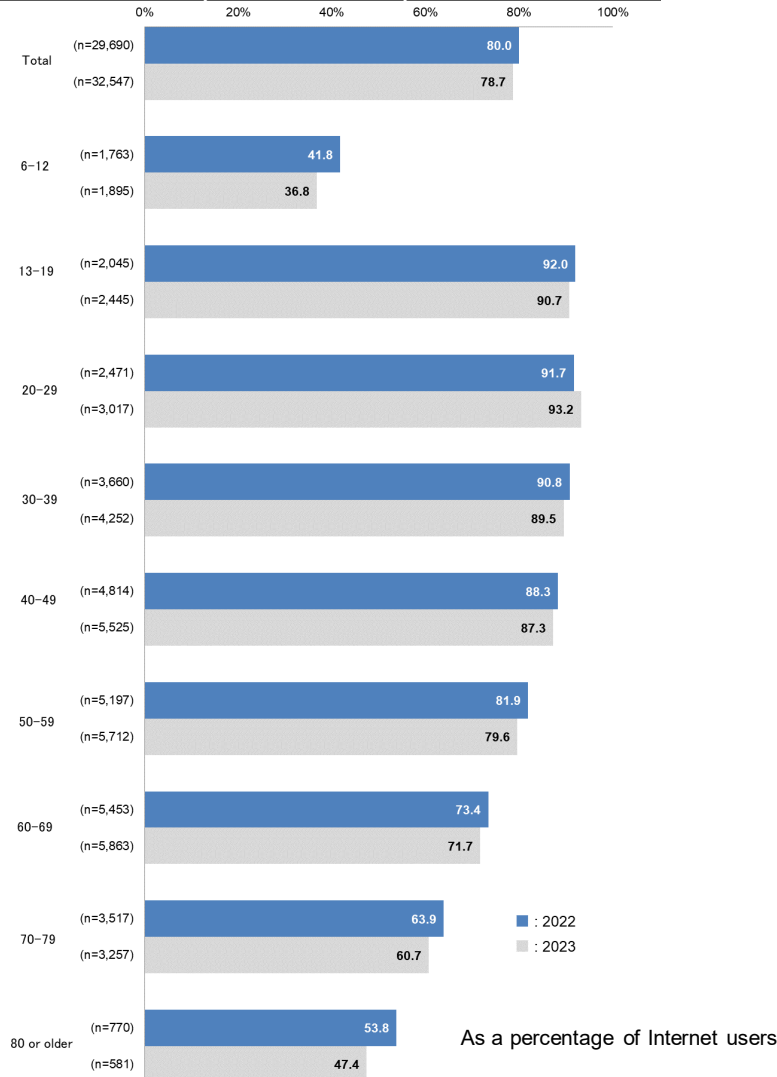
3. Social Networking Service Usage Trends (individuals)

The SNS^(Note) usage rate among individuals is increasing for almost all age groups. Particularly, the rate is growing remarkably for those aged between 6 and 12 and those aged 70 or higher.

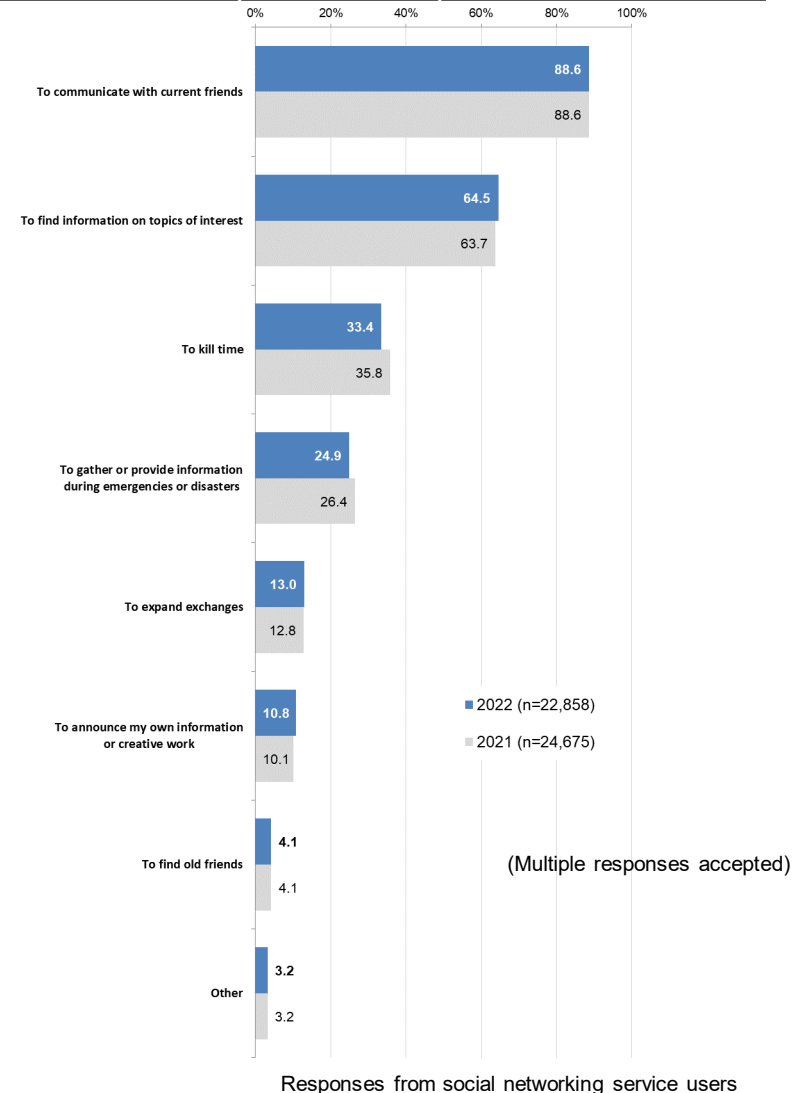
Purposes of SNS usage indicate no major changes from the 2021 survey, including “To communicate with current friends” as the most frequently cited purpose.

*Social networking services here include Facebook, Twitter, LINE, mixi, Instagram and Skype.

Social networking service usage (individuals)



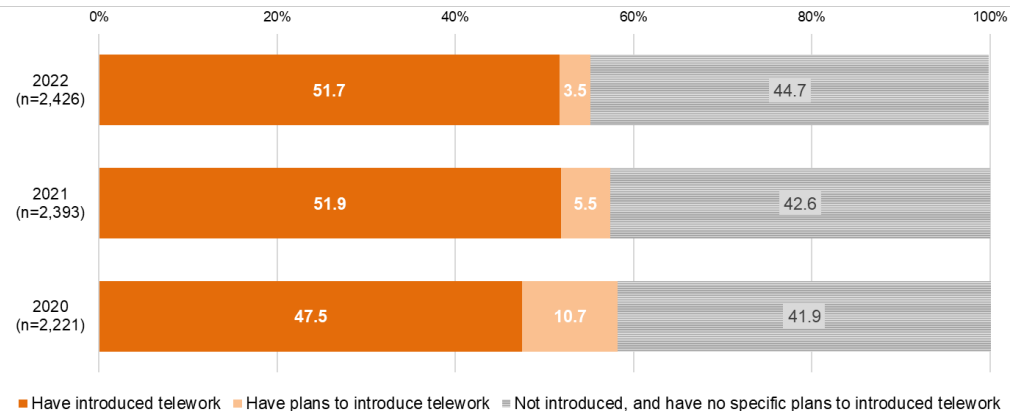
Purposes of social networking service usage (individuals)



4. Introduction of Telework (businesses)

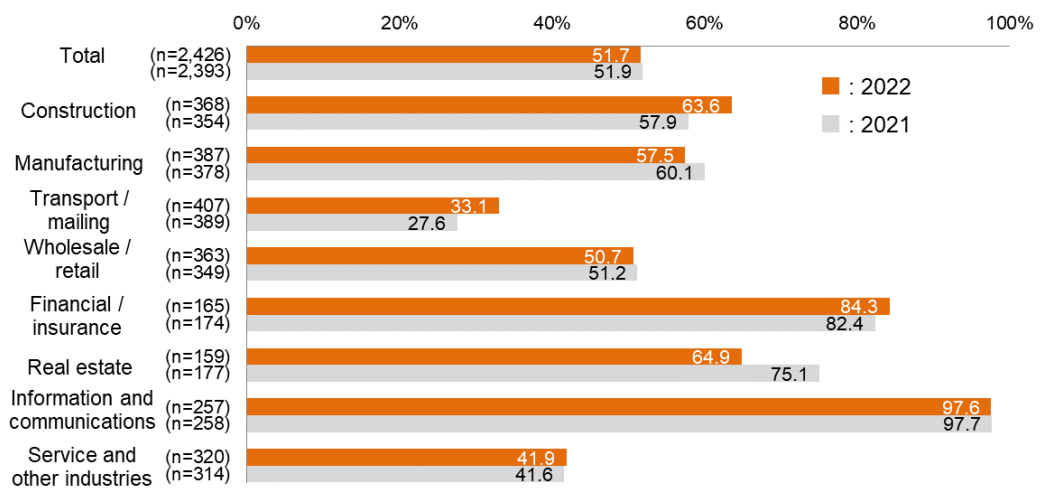
Introduction of telework

The percentage of companies that have introduced telework exceeds 50%, leveling off from 2021. Companies planning to introduce telework in the future are in a downward trend.



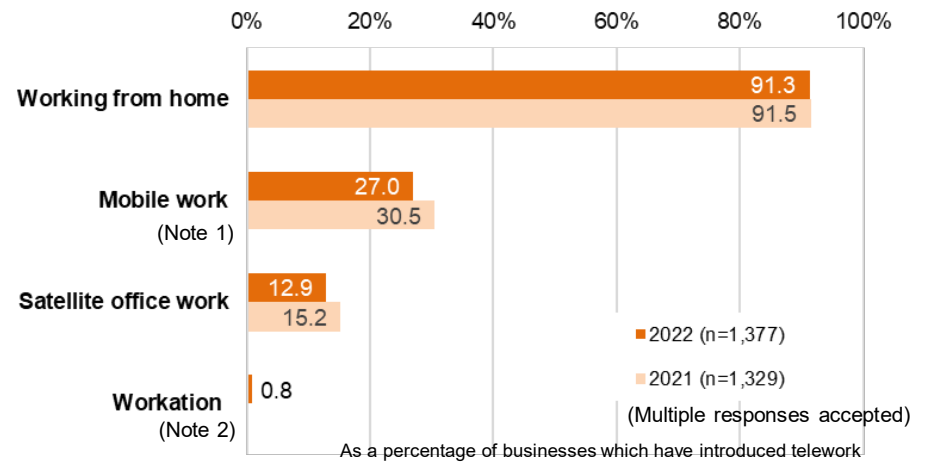
Introduction of telework by industry

The telework introduction rate has increased in many industries. Particularly, the rate tops 90% in the “information and communications” industry and 80% in the “financial/insurance” industry.



Type of telework introduced

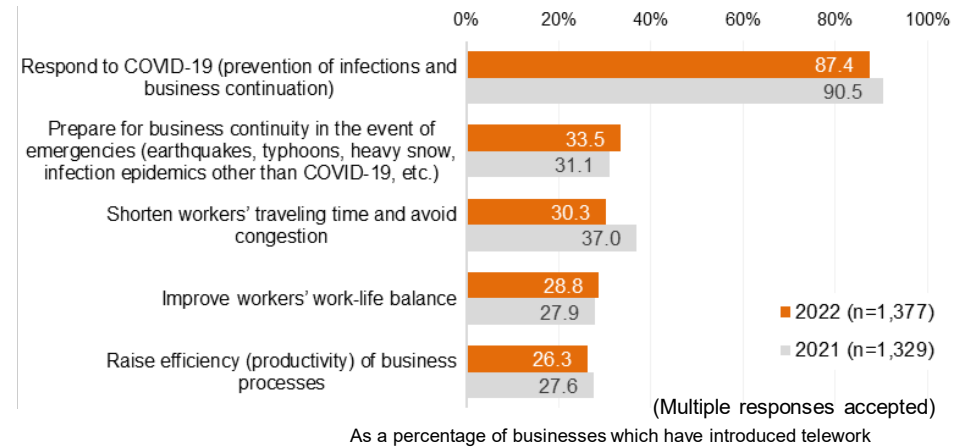
Of companies that have introduced telework, more than 90% have introduced “working from home”.



(Note 1) Mobile work refers to sales and other types of work done out of the office, including email and journal creation at transportation facilities or cafes.
 (Note 2) Workation means that workers take advantage of telework to spend time on personal vacation while working at places other than their usual workplaces and homes. The option of workation was created in the 2022 survey.

Purposes of introducing telework

The most frequently cited purpose for introducing telework is “Responding to COVID-19” (87.4%)

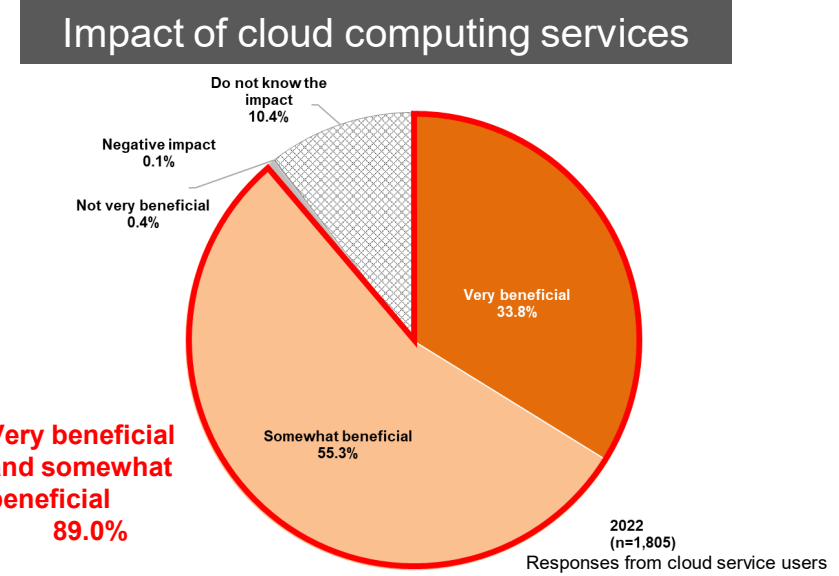
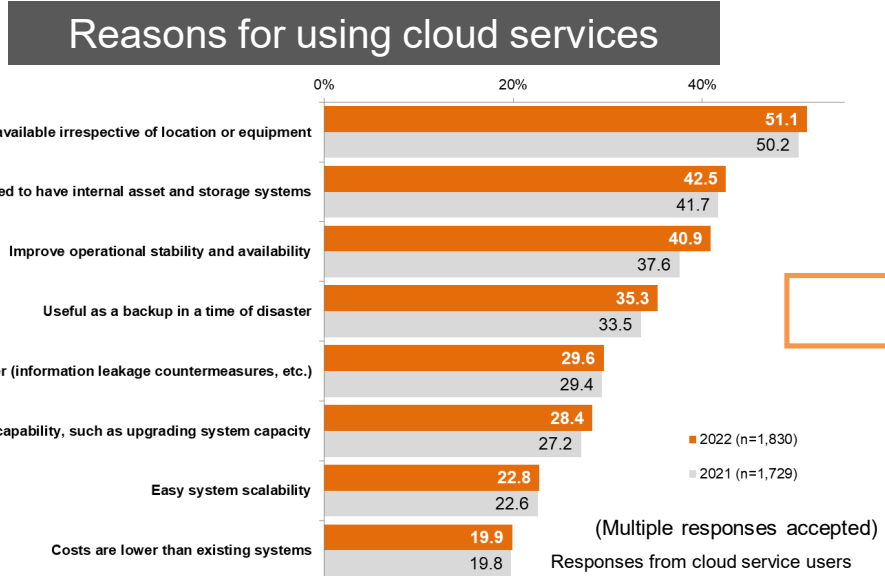
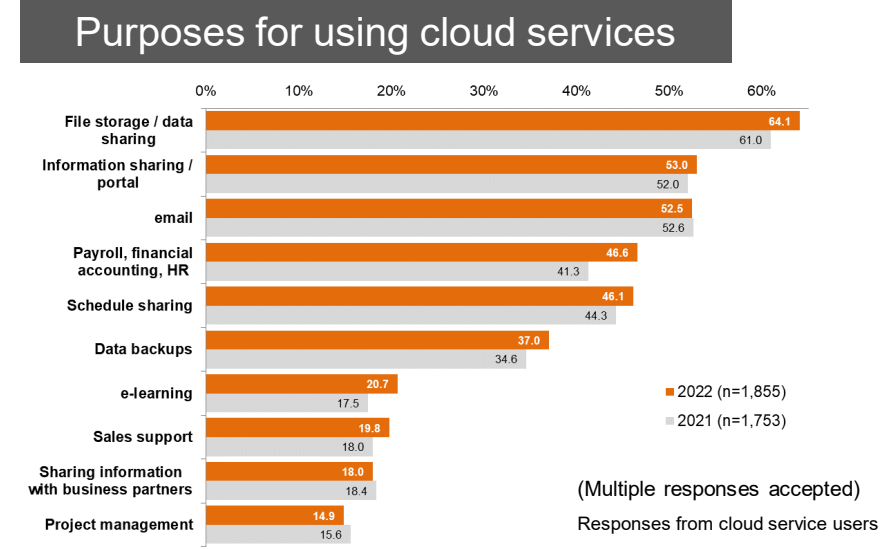
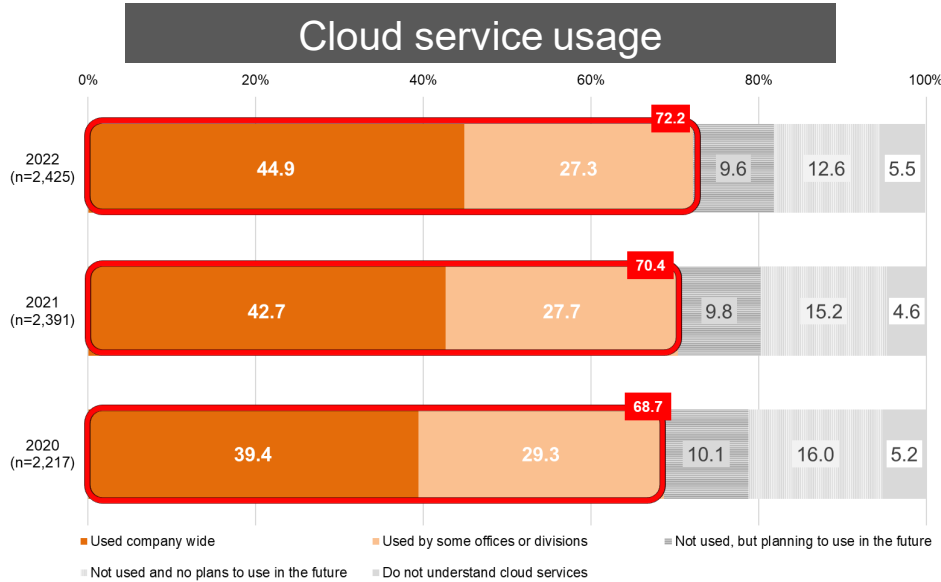


5. Cloud Service Usage (businesses)

The percentage of companies using cloud service continues an upward trend, exceeding 70%.

Purposes for using cloud services include "File storage/data sharing" and "Information sharing / portal." The reasons for using cloud services include "The same services are available irrespective of location or equipment" and "No need to have internal asset and storage systems."

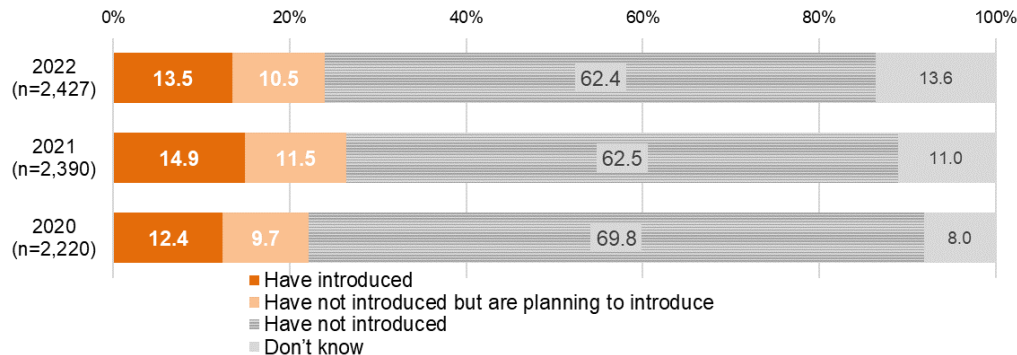
Businesses viewing cloud services as "very beneficial" or "somewhat beneficial" account for about 90% of those having introduced such services.



6. Collection/utilization of digital data with IoT/AI systems (businesses)

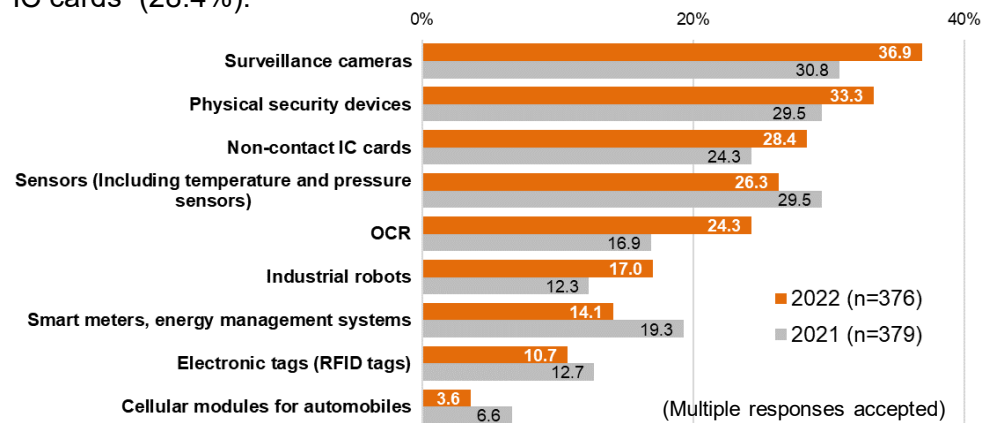
Introduction of IoT/AI systems/services

The percentage of companies introducing IoT, AI and other system services for collecting and analyzing digital data stands at 13.5%, remaining almost unchanged.



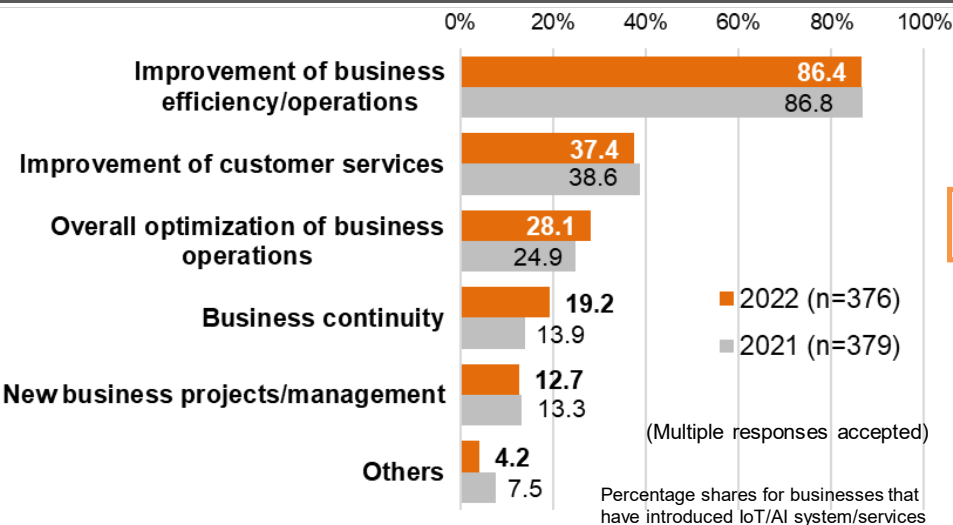
Devices for introduced systems or services

The most frequently cited responses among components of IoT and AI systems or services that have been introduced are "Surveillance cameras" (36.9%), followed by "Physical security devices" (33.3%) and "Non-contact IC cards" (28.4%).

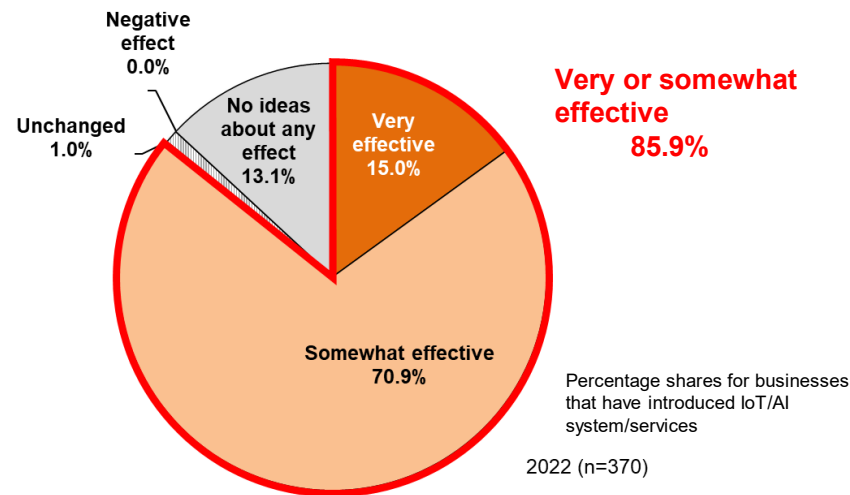


Percentage shares for businesses that have introduced IoT/AI system/services

Purposes of IoT/AI digital data collection and analysis



Effects of IoT /AI system/service introduction



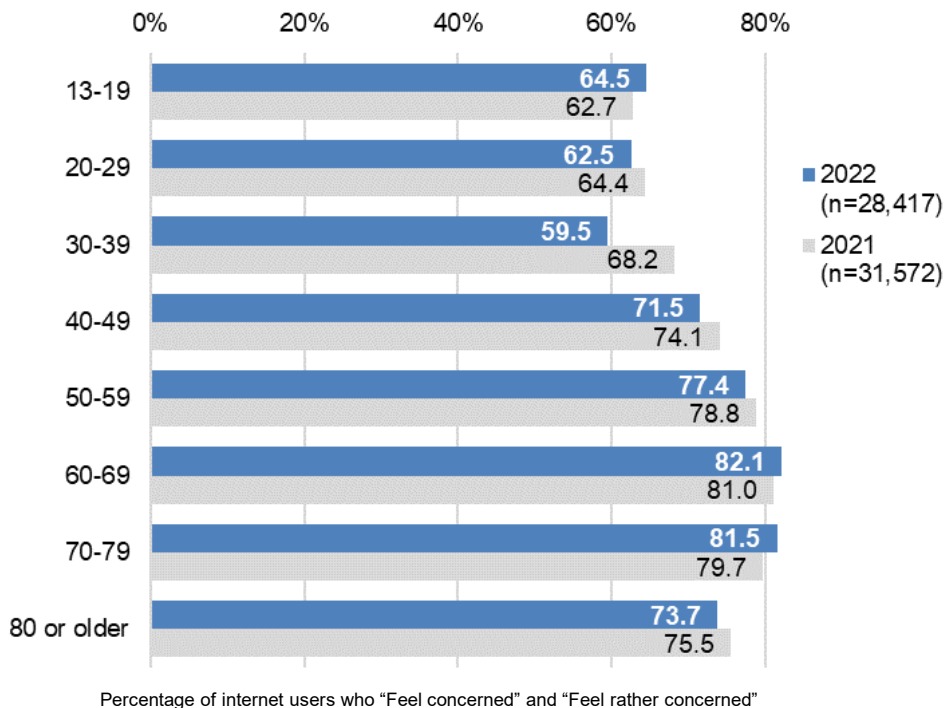
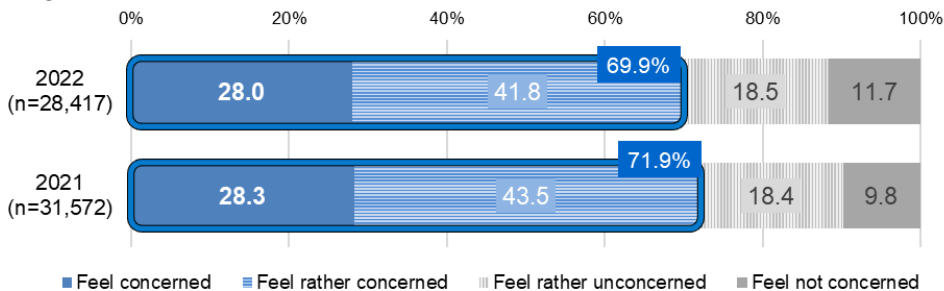
Percentage shares for businesses that have introduced IoT/AI system/services

2022 (n=370)

7. Concerns about Using the Internet (individuals)

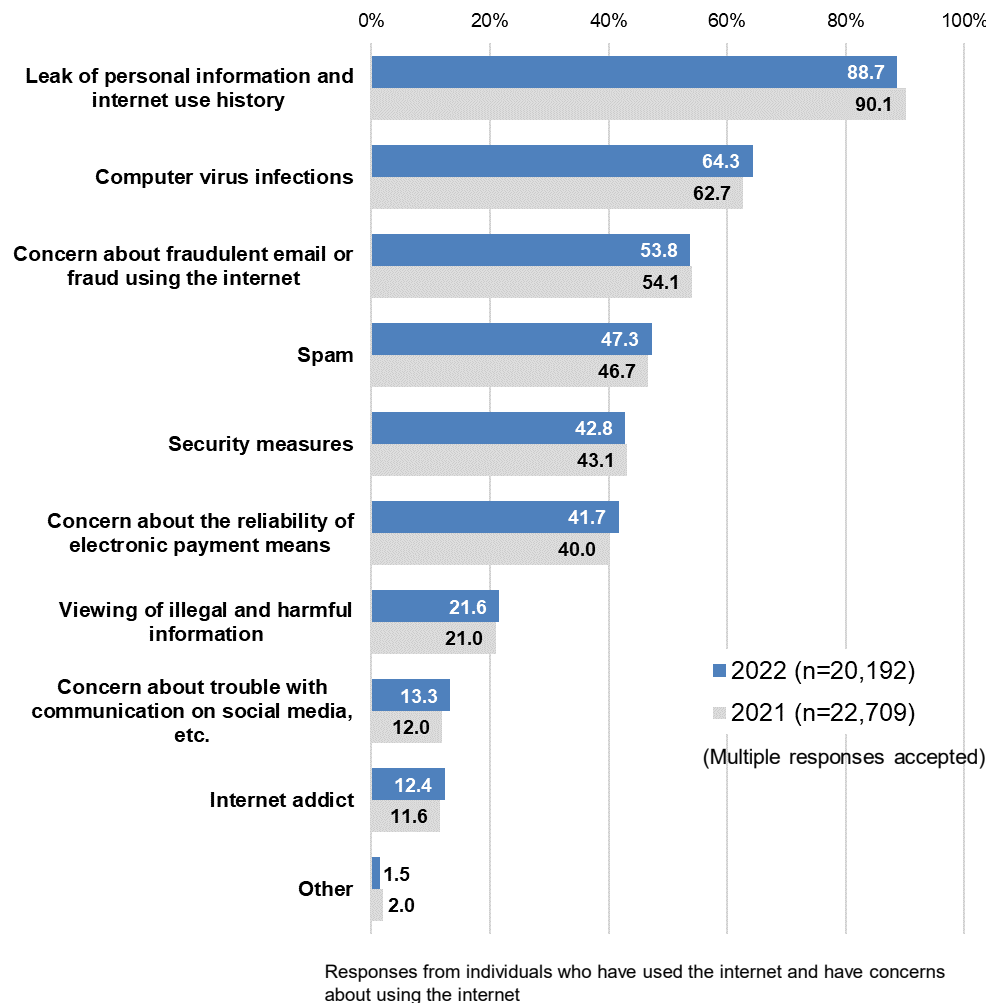
Concerns about using the internet

About 70% of internet users feel insecure during internet use. Percentages of internet users feeling insecure during internet use are higher for those aged 40 or higher, including more than 80% for those aged between 60 and 79.



Types of concerns about using the internet

The most frequently cited type of concerns about using the internet is "Leak of personal information and internet use history" (88.7%), followed by "Computer virus infections" (64.3%) and "Concern about fraudulent email or fraud using the internet" (53.8%).



Summary Findings of the 2022 Communications Usage Trend Survey

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<Note>

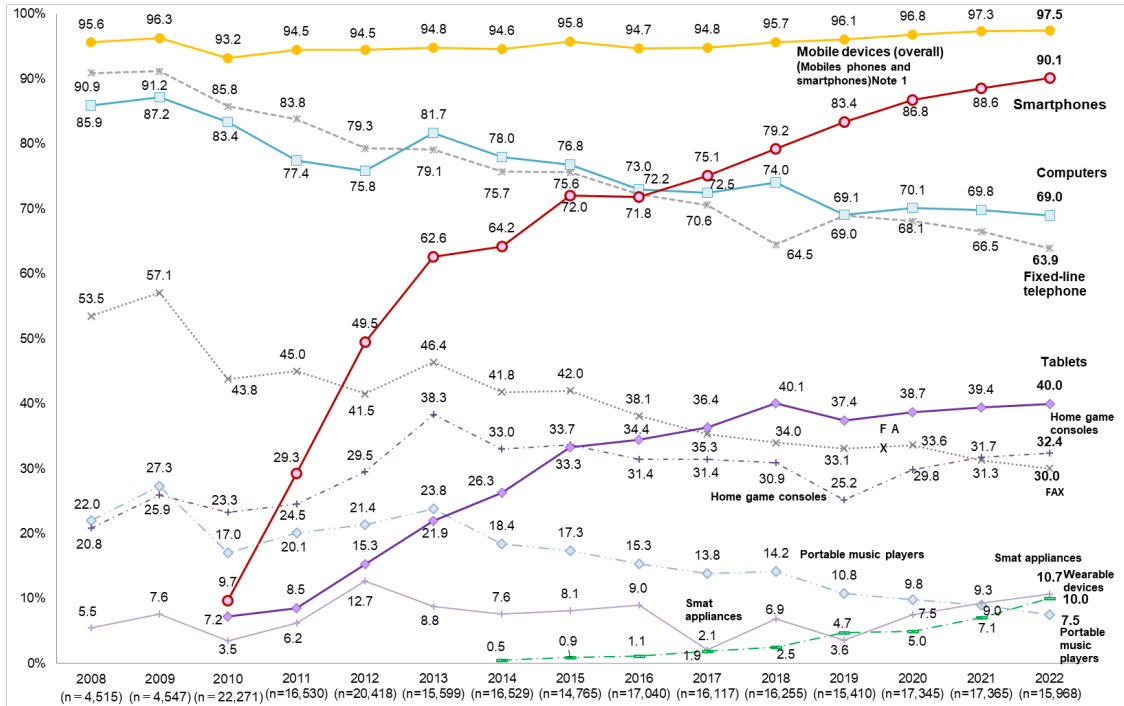
- Data in this document exclude non-respondents in the survey (unless otherwise specified).
- Figures in the chart are rounded to the nearest unit, and individual figures may not add up to totals due to rounding.

1. Proliferation of the Internet and Other Networks

(1) Ownership of communication devices (households)

Ownership rises to 90.1% for smartphones among communication devices.

Figure 1-1: Transitions in ownership of communication devices



(Note 1) "Mobile devices (overall)" include personal digital assistants (PDAs) between 2009 and 2012, smartphones from 2010 and PHS handsets until 2020.

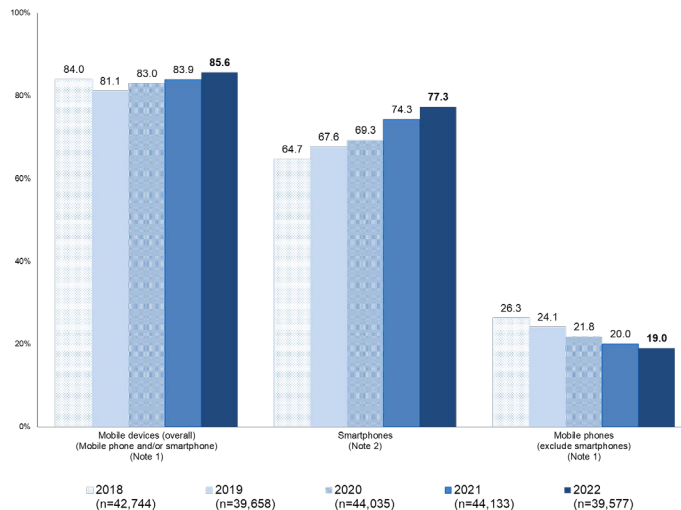
(Note 2) For comparison purposes between years, these calculations do include non-responses

(2) Ownership of mobile devices (individuals)

Regarding the ownership of mobile devices by individuals, the ownership rate for "smartphones" is 77.3%, 58.3 points higher than the ownership rate for "mobile phones" (19.0%).

By age group, the ownership rate for "smartphones" is higher than the ownership rate for "mobile phones" in the age groups other than "80 or older."

Figure 1-2: Transitions in ownership of mobile devices

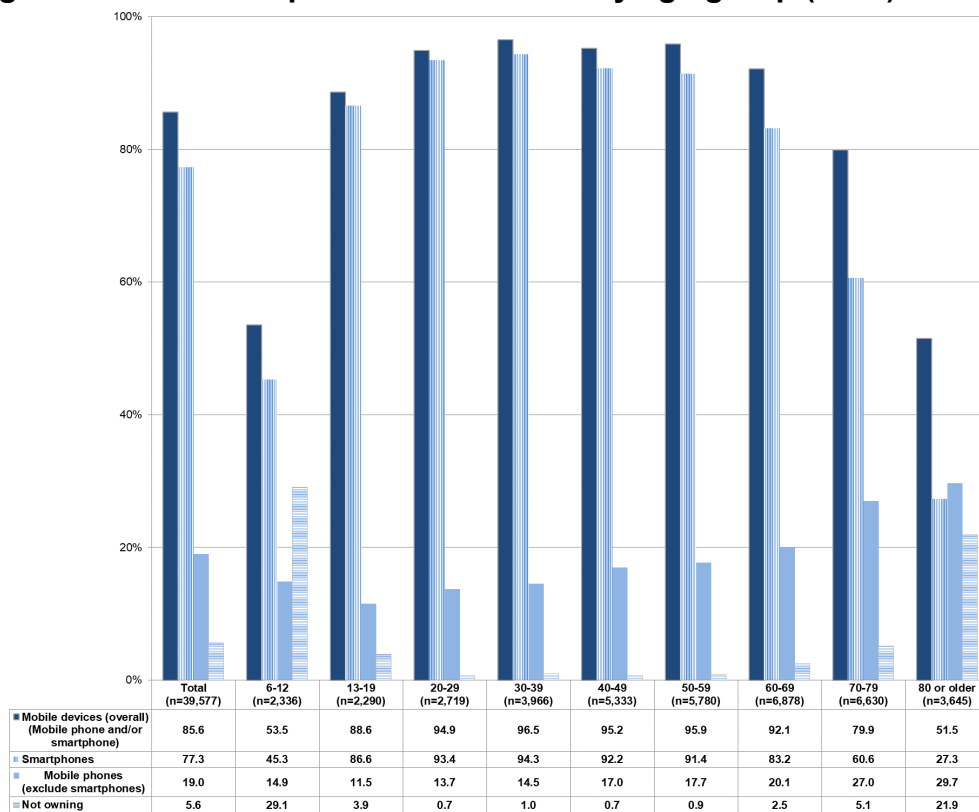


(Note 1) "Mobile devices (overall)" and "Mobile phones (excluding smartphones)" include PHS handsets on or before 2020.

(Note 2) "Smartphones" do not include 5G terminals on or before 2020.

(Note 3) For comparison purposes between years, these calculations do include non-responses.

Figure 1-3: Ownership of mobile devices by age group (2022)

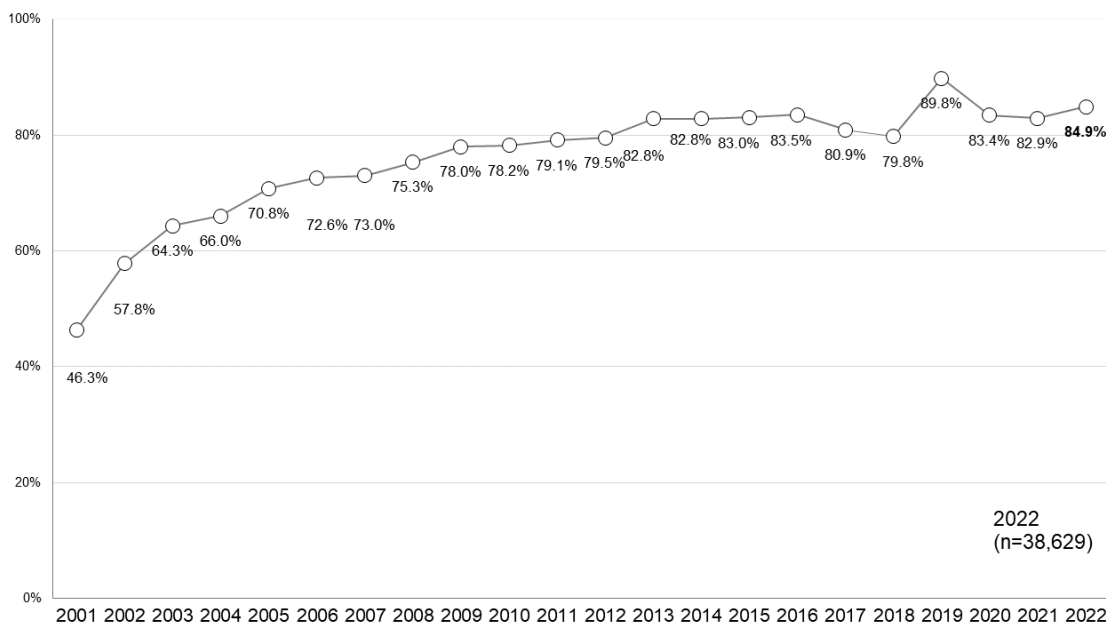


(Note) Including non-respondents.

(3) Internet usage (individuals)

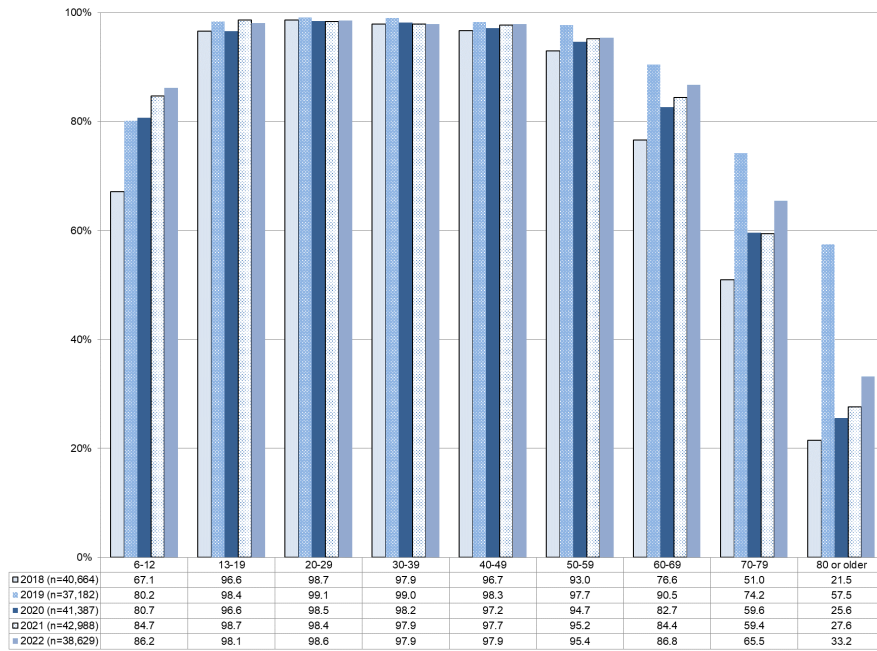
The internet user share is 84.9%. The share tops 90% for individuals aged between 13 and 59.

Figure 1-4: Transitions in internet usage



(Note) For historical comparison, it should be remembered that the survey design for 2019 was somewhat different from that for other years.

Figure 1-5: Transitions in internet usage by age group



(Note) For historical comparison, it should be remembered that the survey design for 2019 was somewhat different from that for other years.

Figure 1-6: Internet usage by age and gender (2022)

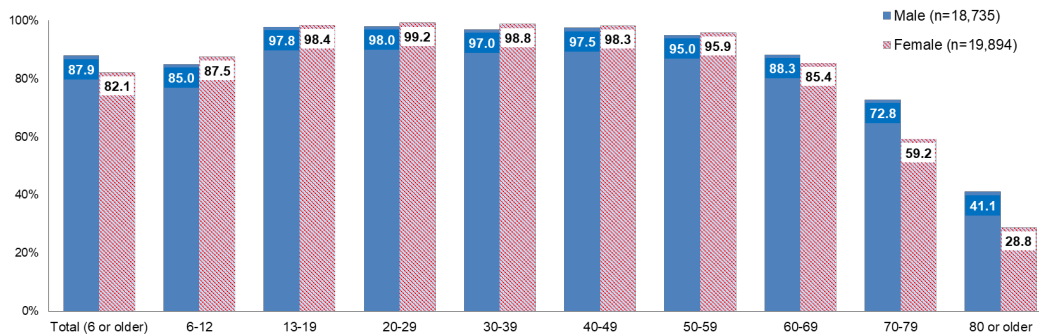
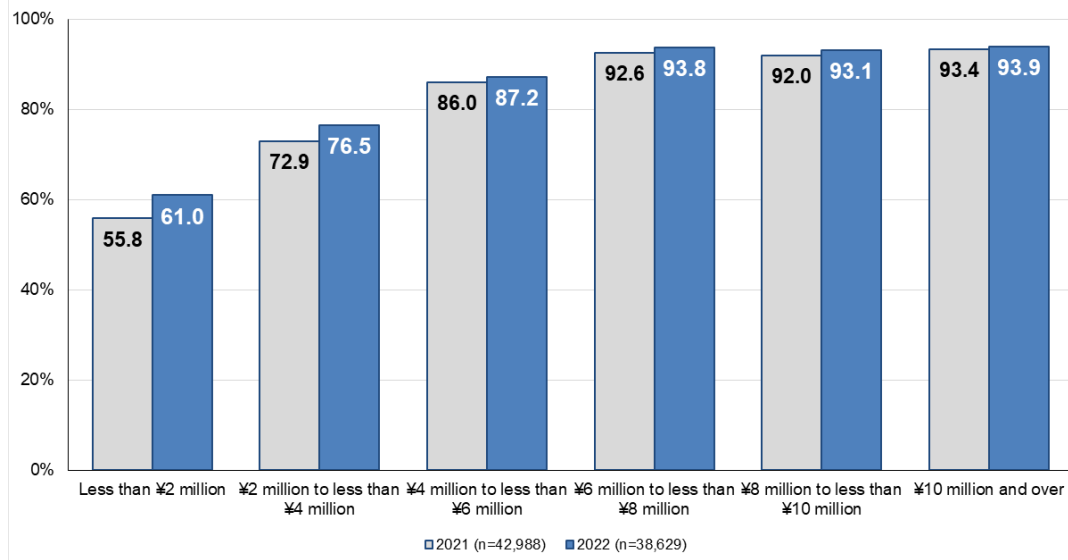


Figure 1-7: Internet usage by annual household income



(4) Internet usage by device (individuals)

The internet usage by device indicates that the percentage of those using smartphones for internet access is 22.7 points higher than that of those using computer. The internet usage rate is about 90% for all age groups between 20 to 59 and about 70% for the age group between 60 and 69.

Figure 1-8: Internet usage by device

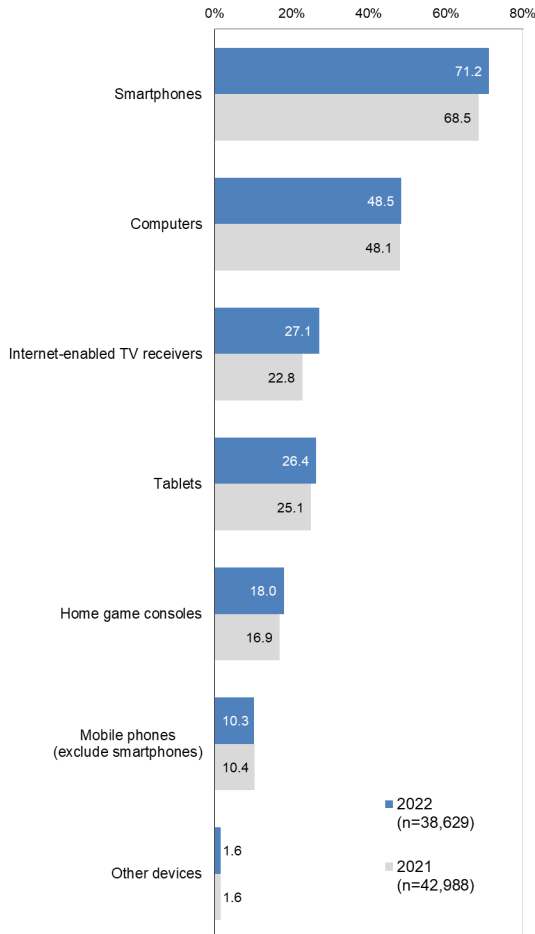
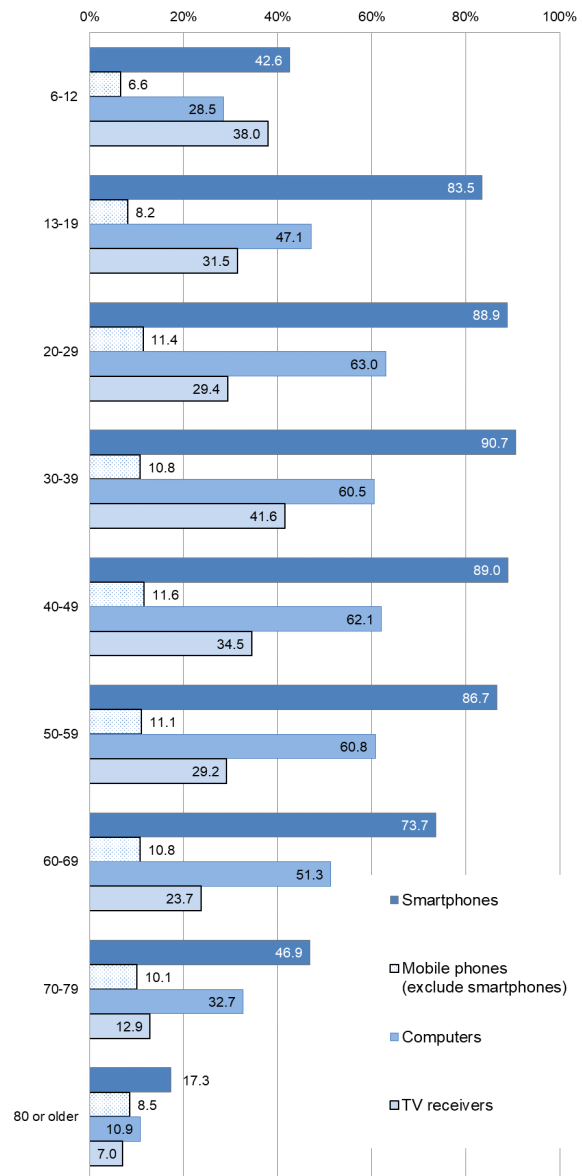


Figure 1-9: Use of internet devices by age group



(Note) Only major devices are covered.

(5) Internet usage by prefecture and region (individuals)

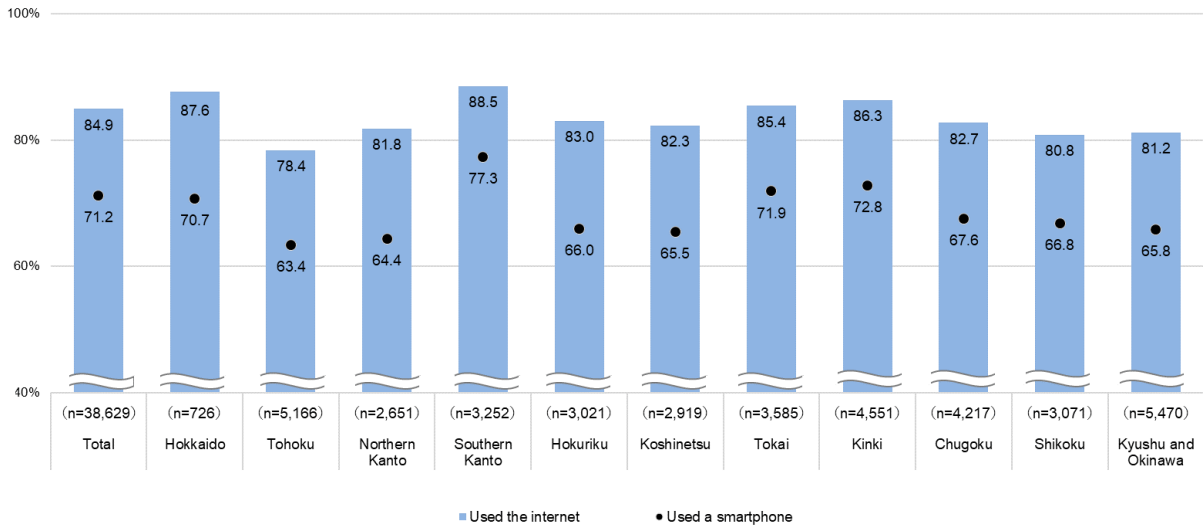
The internet usage by prefecture indicates that Tokyo posts the highest internet usage rate, followed by Nara and Chiba in that order (see the colored parts in Figure 1-10).

By region, the internet usage rate in southern Kanto, Hokkaido, Kinki and Tokai is higher than the national average rate

Figure 1-10: Internet usage by prefecture and device (2022)

Prefecture (n)	Percentage of internet users (%)				
	Total	Computers	Mobile phones	Smartphones	Tablets
Hokkaido (726)	87.6	51.2	10.3	70.7	24.1
Aomori (776)	75.2	35.0	7.4	60.7	19.1
Iwate (838)	73.8	33.3	12.7	57.1	17.4
Miyagi (787)	85.2	51.7	10.3	72.1	28.6
Akita (936)	74.9	37.7	9.3	56.8	16.8
Yamagata (1,063)	77.3	37.8	9.3	57.5	17.0
Fukushima (766)	77.4	42.8	8.1	64.9	22.7
Ibaraki (715)	80.9	36.6	11.9	60.9	23.5
Tochigi (954)	82.6	45.0	9.3	66.4	24.2
Gunma (982)	82.4	44.6	11.3	67.6	24.1
Saitama (844)	84.8	43.2	9.2	70.2	24.5
Chiba (809)	89.4	59.1	10.1	79.3	27.7
Tokyo (841)	90.4	62.4	11.2	81.3	42.2
Kanagawa (758)	87.7	56.9	10.7	75.5	27.2
Niigata (1,002)	81.1	37.3	8.7	62.8	20.0
Toyama (1,150)	84.1	46.7	6.9	67.3	21.5
Ishikawa (997)	83.6	46.6	7.8	69.1	22.4
Fukui (874)	80.5	42.7	9.7	59.8	21.1
Yamanashi (981)	84.4	47.0	9.9	70.9	25.7
Nagano (936)	82.6	43.3	8.5	66.2	26.6
Gifu (976)	82.7	40.6	10.3	70.0	24.2
Shizuoka (998)	84.1	45.6	8.9	71.0	24.4
Aichi (810)	86.6	50.8	10.8	73.3	27.2
Mie (801)	85.7	47.1	8.8	69.9	27.3
Shiga (820)	88.0	52.3	9.4	74.0	28.3
Kyoto (763)	87.0	50.1	9.8	73.8	26.4
Osaka (725)	88.8	49.9	11.9	76.4	25.3
Hyogo (600)	81.8	48.6	12.8	66.3	22.6
Nara (871)	89.7	51.4	9.4	77.2	23.5
Wakayama (772)	80.4	41.6	8.8	65.8	20.1
Tottori (804)	78.2	39.8	8.8	63.1	22.8
Shimane (874)	79.5	44.1	9.4	64.9	21.7
Okayama (816)	81.4	42.9	9.1	66.0	22.1
Hiroshima (844)	87.8	48.3	9.5	72.5	23.4
Yamaguchi (879)	77.6	39.8	6.1	63.1	22.6
Tokushima (784)	80.6	43.2	8.9	67.9	24.1
Kagawa (850)	82.3	43.1	9.6	66.6	24.3
Ehime (746)	82.3	41.3	10.7	67.5	25.7
Kochi (691)	76.3	40.6	6.8	64.5	16.6
Fukuoka (544)	83.8	43.5	11.4	69.5	26.0
Saga (821)	82.3	42.3	8.2	65.7	20.0
Nagasaki (788)	82.8	38.0	7.9	67.1	21.1
Kumamoto (794)	76.5	37.7	9.4	58.9	19.9
Oita (707)	77.9	36.6	10.3	63.0	22.7
Miyazaki (772)	78.2	33.0	11.8	58.6	18.5
Kagoshima (587)	78.0	38.2	9.8	65.9	25.1
Okinawa (457)	83.3	40.9	12.2	67.5	23.1
Total (38,629)	84.9	48.5	10.3	71.2	26.4

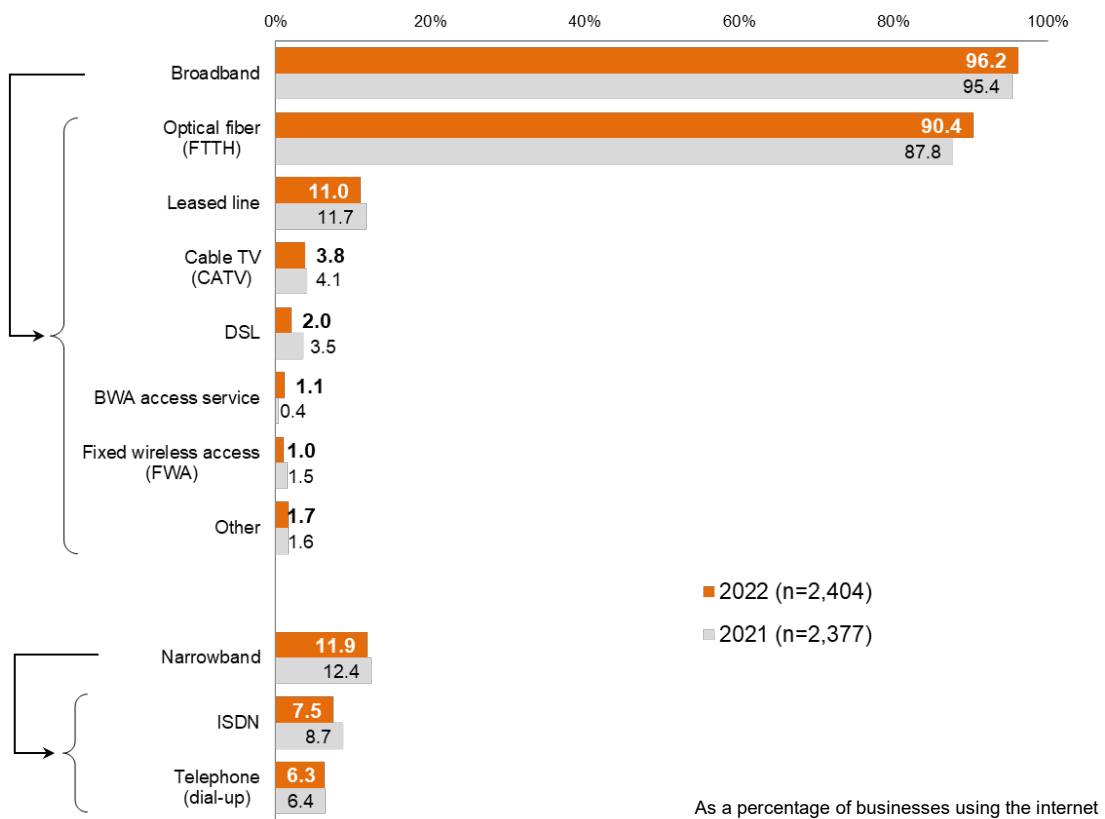
Figure 1-11: Internet and smartphone usage by region (2022)



(6) Types of internet connections (businesses)

Of the surveyed businesses, 96.2% use a broadband connection to access the internet from their premises. Of businesses using a broadband connection, 90.4% use an optical fiber connection.

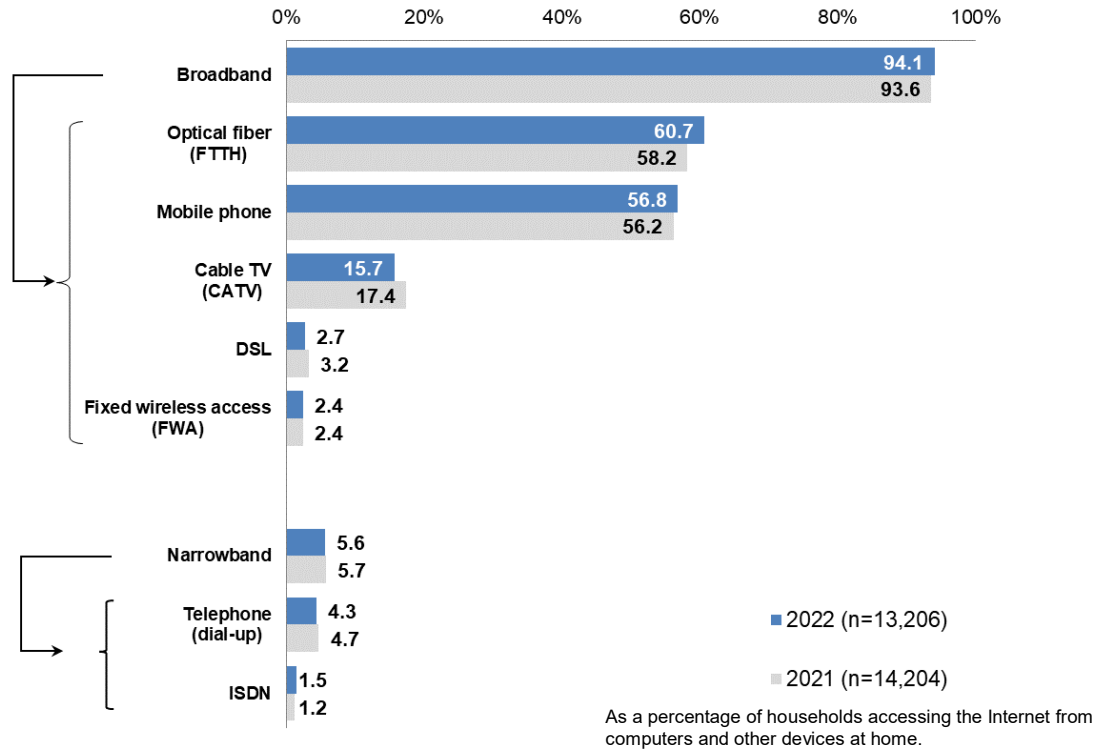
Figure 1-12: Internet connection types (multiple responses accepted)



(7) Types of internet connections (households)

Of households using a broadband connection to access the internet from computers, tablets and other devices at home, 94.1% use a broadband connection.

Figure 1-13: Types of internet connections for computers and other devices at home (multiple responses accepted)



(8) Internet connection through TV, etc. (households)

Of households using an internet connection through a TV, etc., those using a connection through a TV account for the highest share at 60.2%, followed by 24.5% for those using a connection through DVD/Blu-ray disc recorders. The most frequently cited purpose is to “Use free video-sharing services”, cited by 58.4%, followed by to “Acquire information related to broadcast programs being watched” (50.3%).

Figure 1-14 Internet connection through TV, etc. (multiple responses accepted)

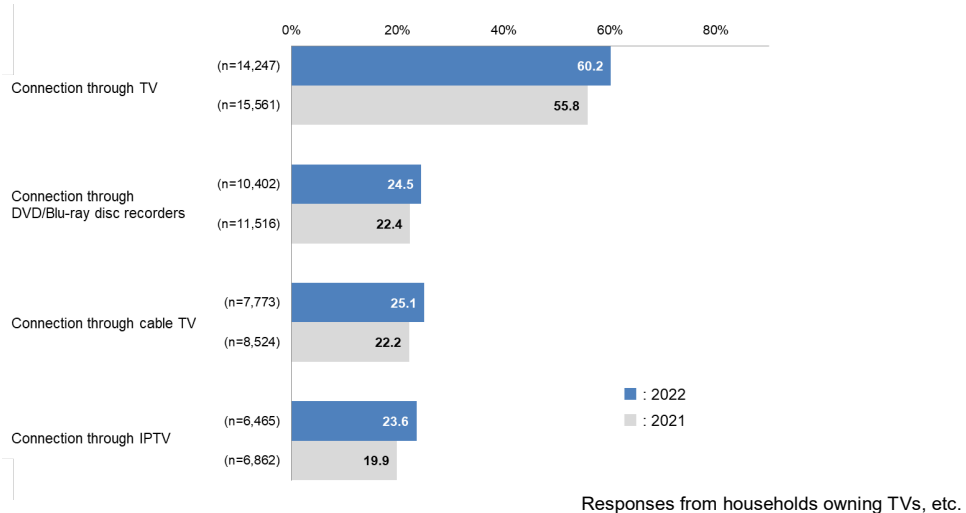
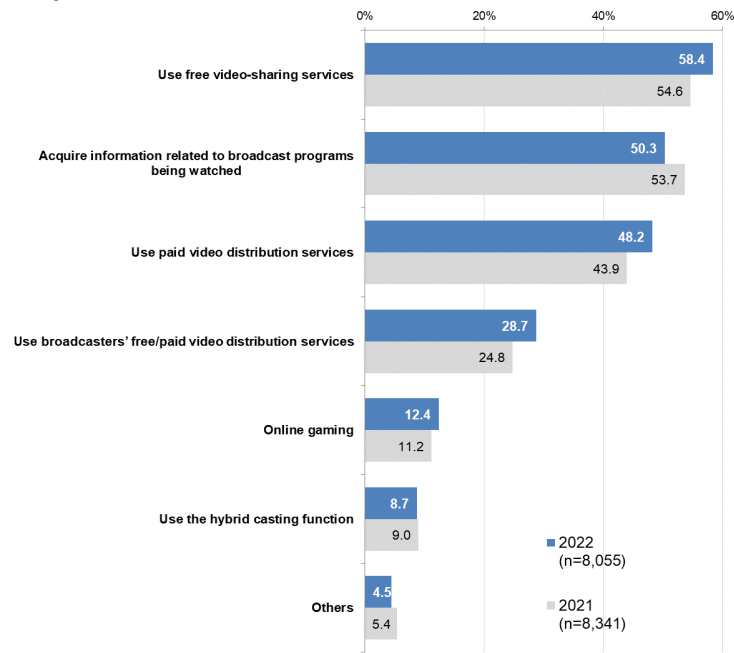


Figure 1-15 Purposes for using Internet services through TVs, etc. (multiple responses accepted)

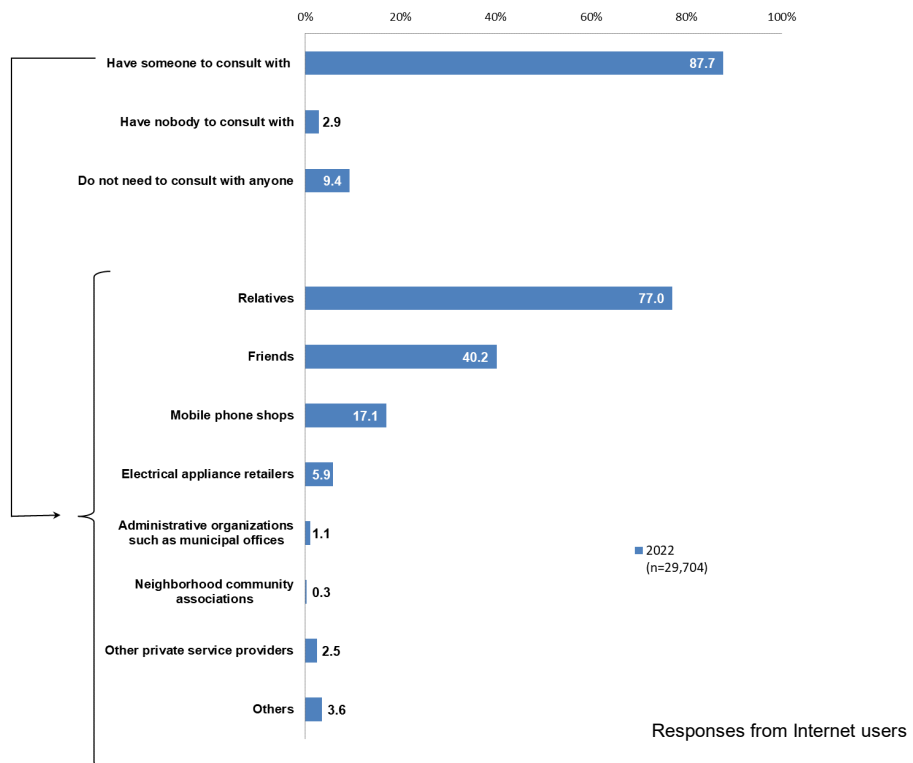


Reponses from households using the Internet through TVs, etc.

(9) Consultations about internet usage (individuals)

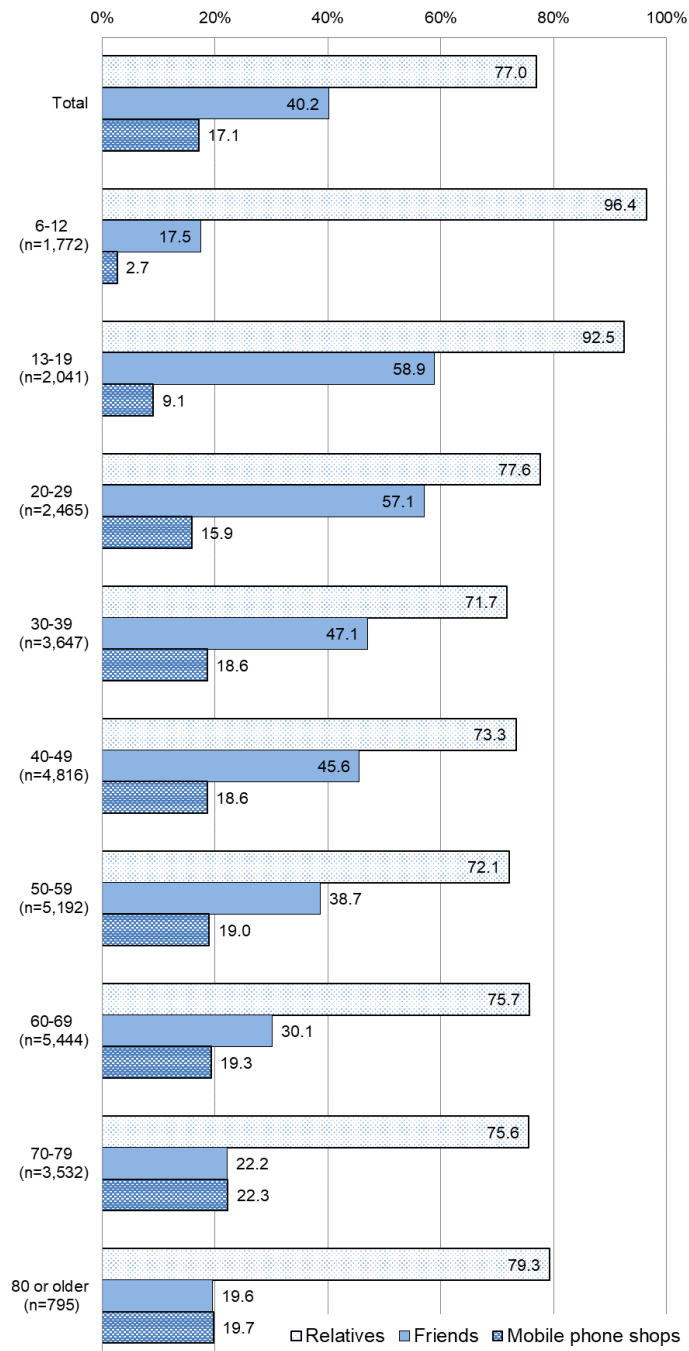
The status of individuals' consultations about internet usage indicates that 87.7% of individuals "Have someone to consult with." The most frequently cited parties to consult with are "Relatives" (77.0%), followed by "Friends" (40.2%) and "Mobile phone shops" (17.1%).
 For all age groups, more than 70% cite "Relatives."

Figure 1-16 Consultations about internet usage (multiple responses accepted)



Responses from Internet users

Figure 1-17 Consultations about internet usage by age group



Only main parties to consult with are shown.

2. Current ICT Usage by Individuals

(1) Purposes of using the internet (individuals)

The most common usage of the internet is “Using social networking services (including free call services),” cited by 80.0%. This is followed by “Sending and receiving email” (78.5%) and “Information search” (73.7%).

By age group, “Using social networking services (including free call services)” and “Sending and receiving email” are highly common usages across all age groups, while there are wide differences between age groups with respect to such usages as “e-learning” and “Using online gaming.”

Figure 2-1: Purposes of using the internet (multiple responses accepted)

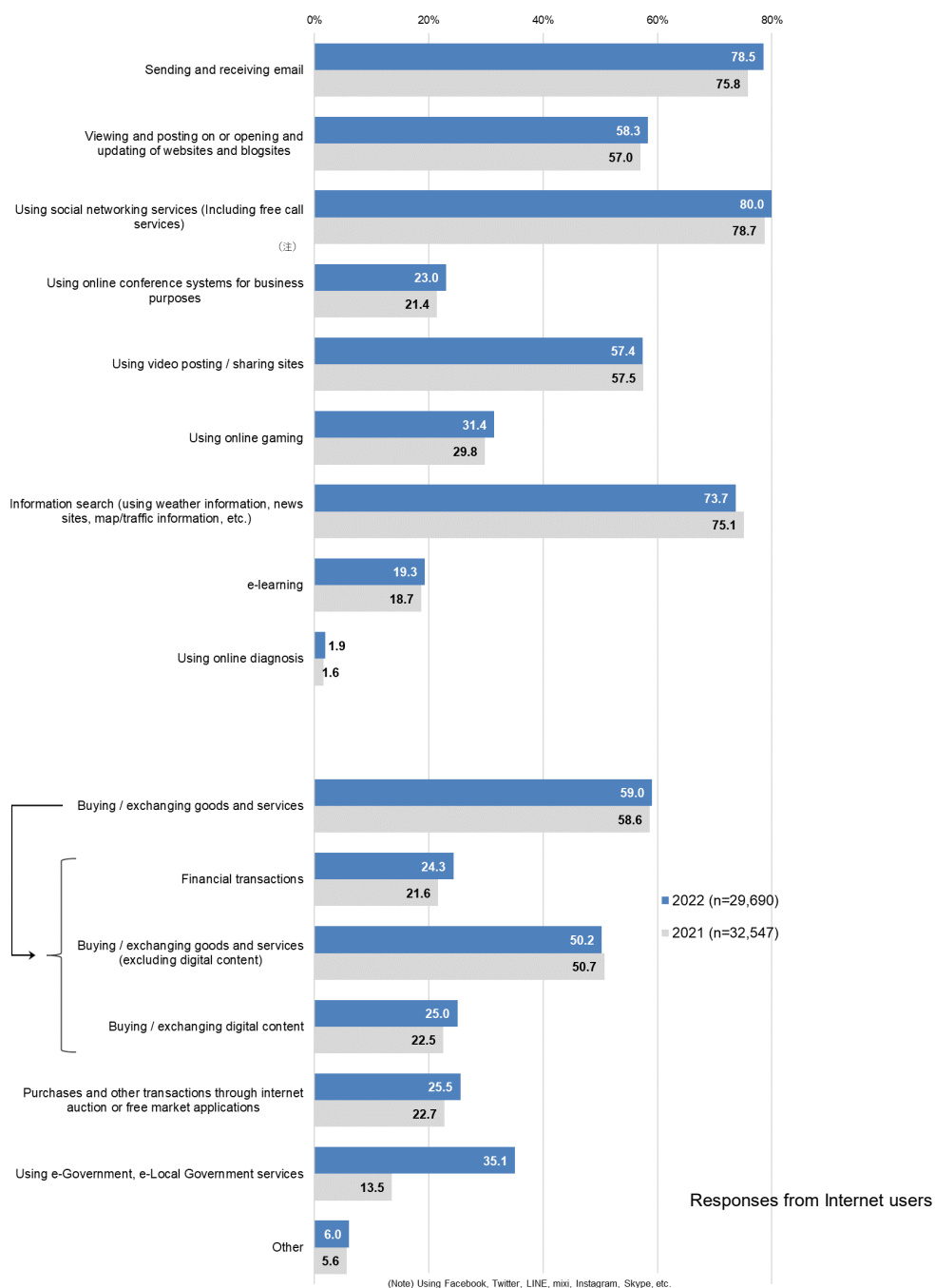
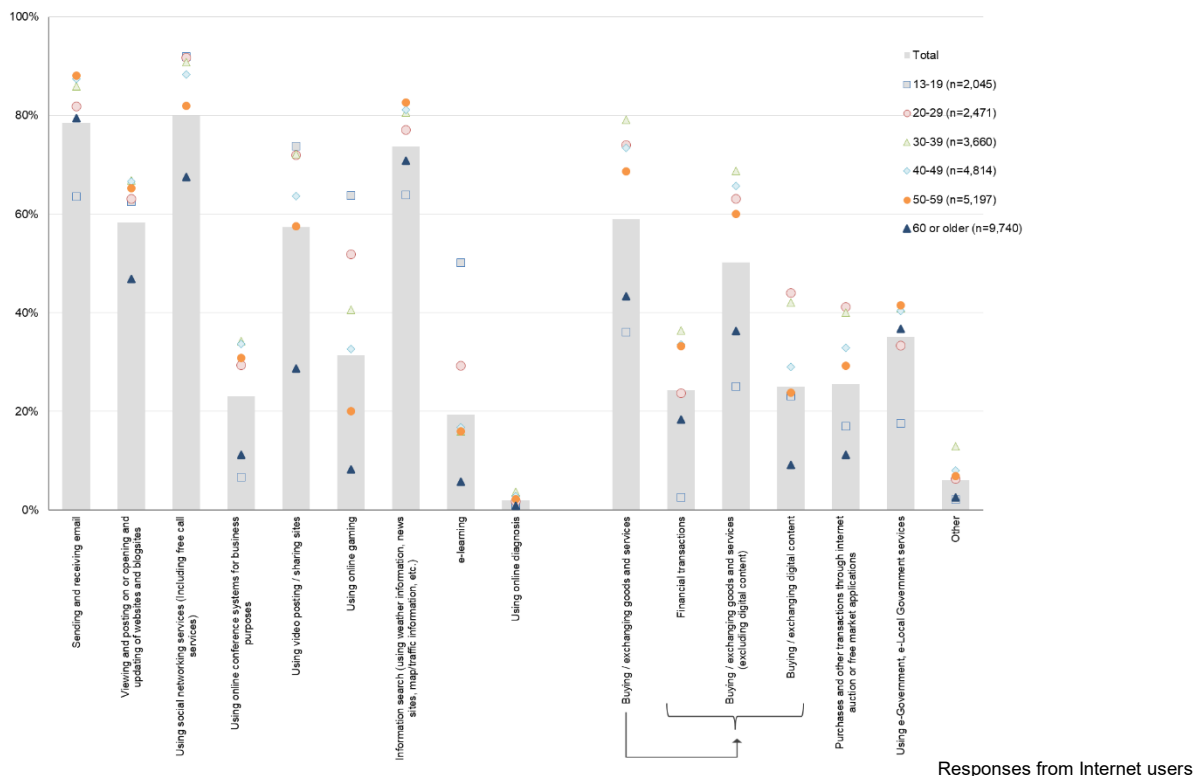


Figure 2-2: Purposes of using the internet by age group (multiple responses accepted) (2022)

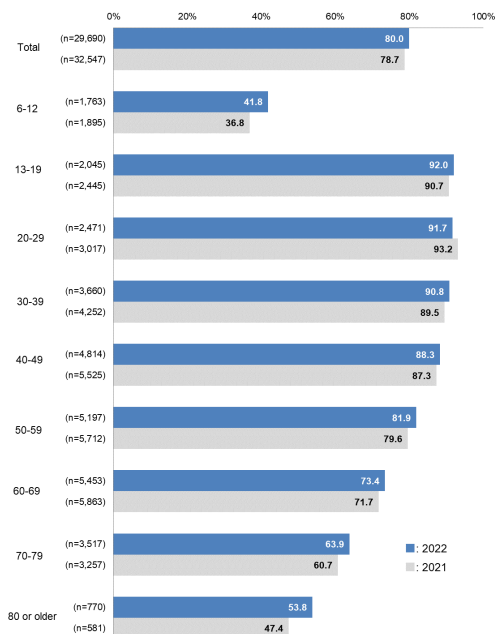


(2) Social networking service usage (individuals)

Of internet users, 80.0% use social networking services, up 1.3 points from the previous year.

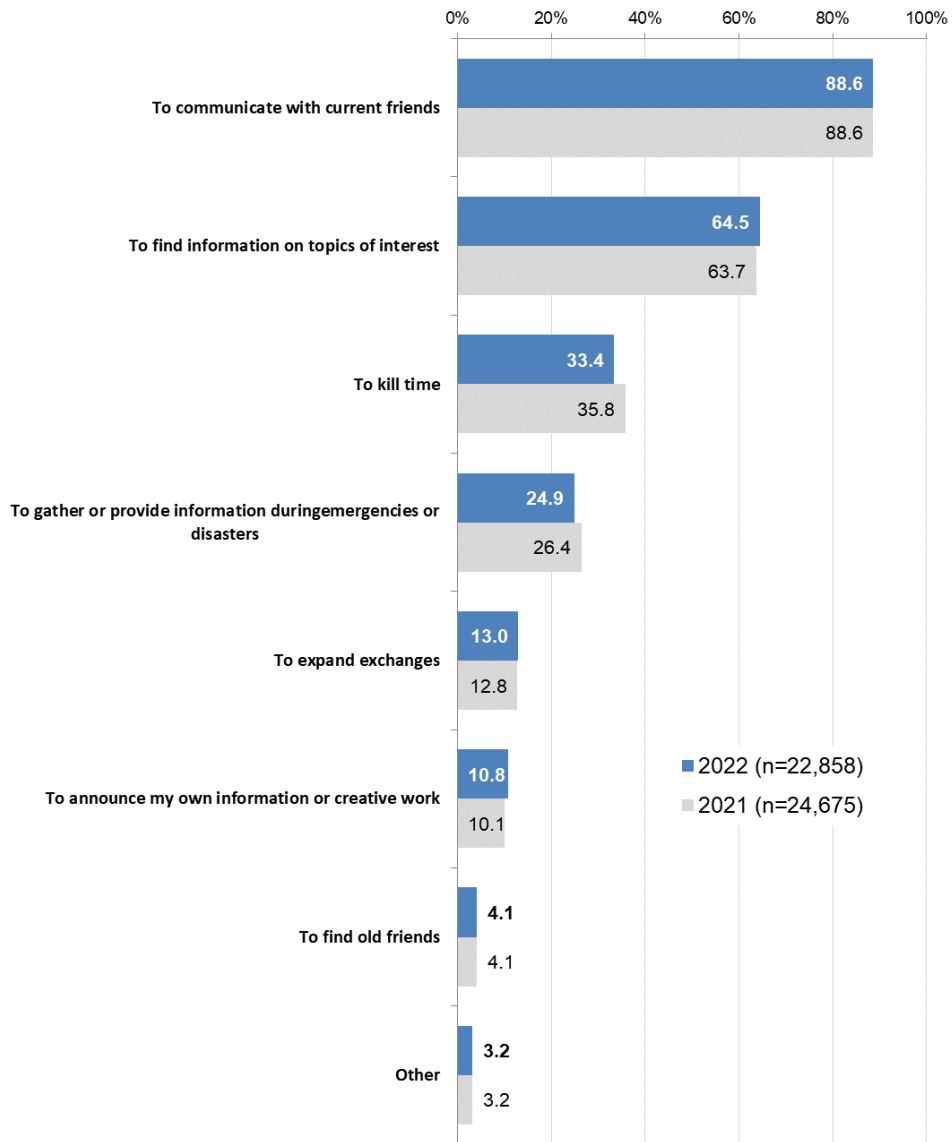
Among purposes of social networking service usage, “To communicate with current friends” (88.6%) is the most frequently cited, followed by “To find information on topics of interest” (64.5%).

Figure 2-3: Social networking service usage



As a percentage of Internet users

Figure 2-4: Purposes of social networking service usage (multiple responses accepted)

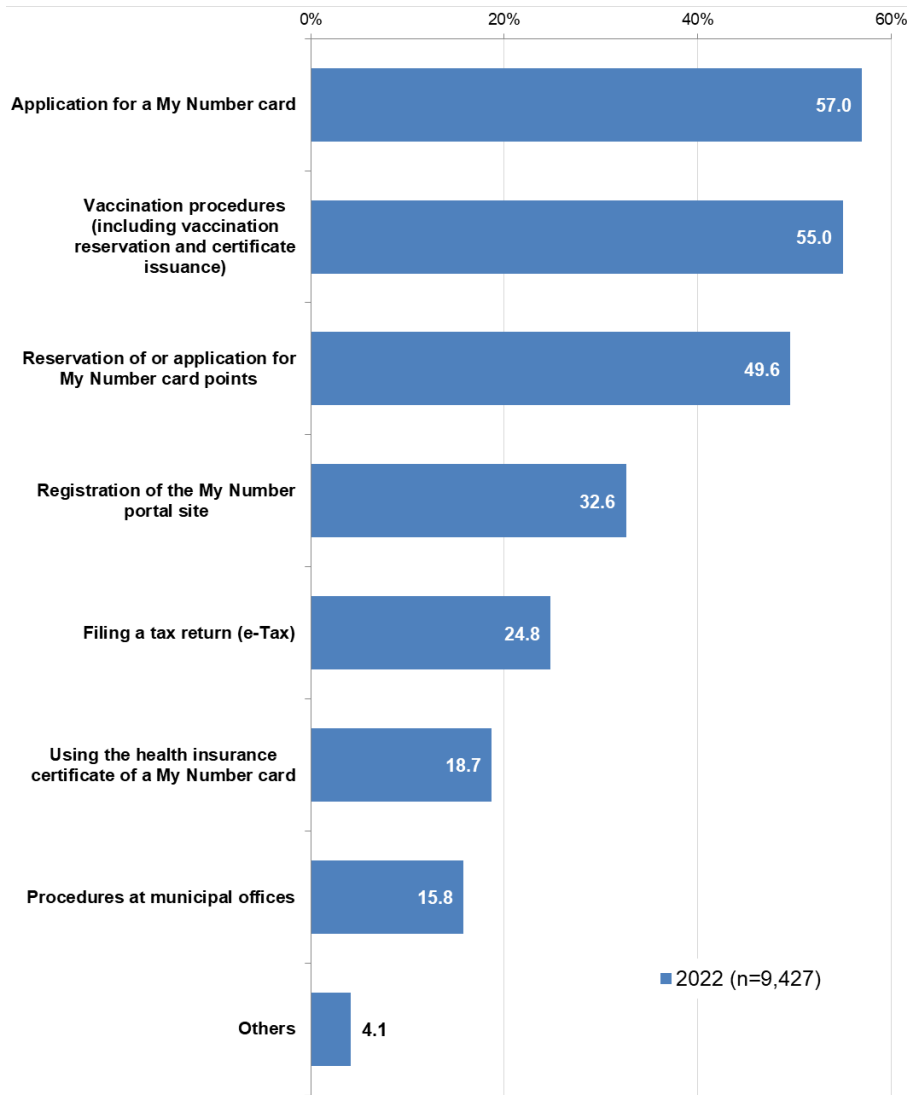


Responses from social networking service users

(3) Use of e-government/municipality (individuals)

The most frequently used e-government/municipality procedure is “application for a My Number card” (57.0%), followed by “vaccination procedures (including vaccination reservation and certificate issuance)” (55.0%) and “reservation of or application for My Number card points” (49.6%).

Figure 2-5 Administrative procedures used at e-government/municipality sites (multiple responses accepted)



■ 2022 (n=9,427)

Responses from Internet users

3. Introduction and Implementation of Telework

(1) Introduction of telework (businesses)

The share for businesses having introduced telework comes to 51.7%, down 0.2 points from the previous survey. The share for those that have not introduced telework but have specific plans to do so stands at 3.5%, being in a downward trend.

Among types of telework that have been introduced, “Working from home” is the most frequently cited (91.3%).

By industry, most (97.6%) businesses in the “Information and communications” industry have introduced telework. The telework introduction rate is also high in the “Financial/insurance” industry (84.3%).

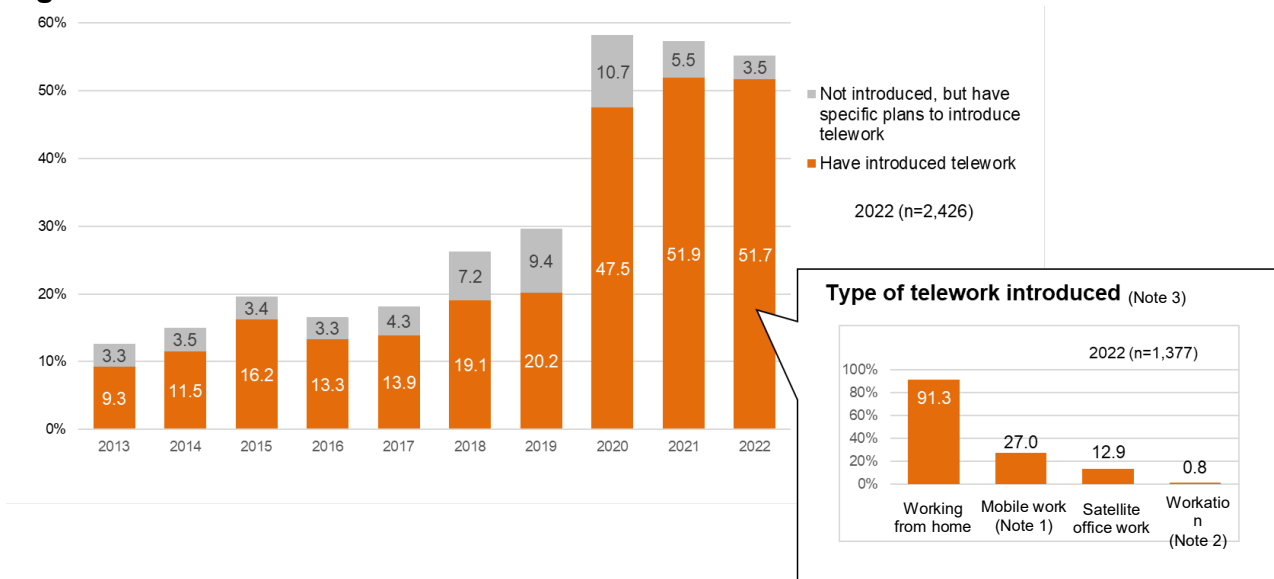
By capitalization, businesses capitalized at 1 billion to less than 5 billion yen post the highest telework introduction rate of 91.9%. Of businesses that have introduced telework, those with telework employees’ percentage at 80% or more account for 13.5%, down 1.3 percentage points from the previous survey. Those with the percentage at less than 5% account for 34.1%, up 7.2 points.

The most frequently cited purpose for introducing telework is to “Respond to COVID-19 (prevention of infections and business continuation),” cited by 87.4%. On the other hand, to “Shorten workers' traveling time and avoid congestion” was cited by 30.3%, down 6.7 points.

Concerning the intended effects of telework introduction, 79.8% recognize either “Very beneficial” or “Somewhat beneficial” effects.

Of businesses that have not implemented telework, “Work is not suited to telework” is cited by the largest percentage, 82.3%, as the reason for not introducing telework.

Figure 3-1: Telework introduction



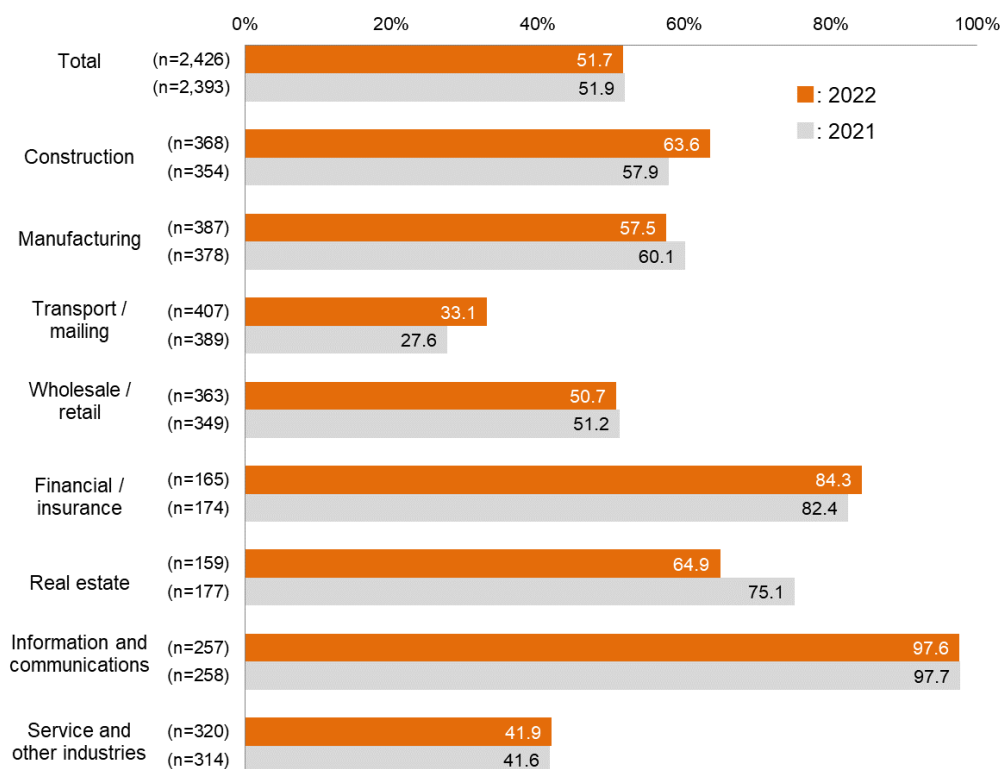
(Note 1) Mobile work refers to sales and other types of work done out of the office, including email and journal creation at transportation facilities or cafes.

(Note 2) Workation means that workers take advantage of telework to spend time on personal vacation while working at places other than their usual workplaces and homes.

(Note 3) The total includes respondents that made no response to the question on the type of telework introduced.

Figure 3-2: Telework introduction by industry and capitalization

By industry



By capitalization

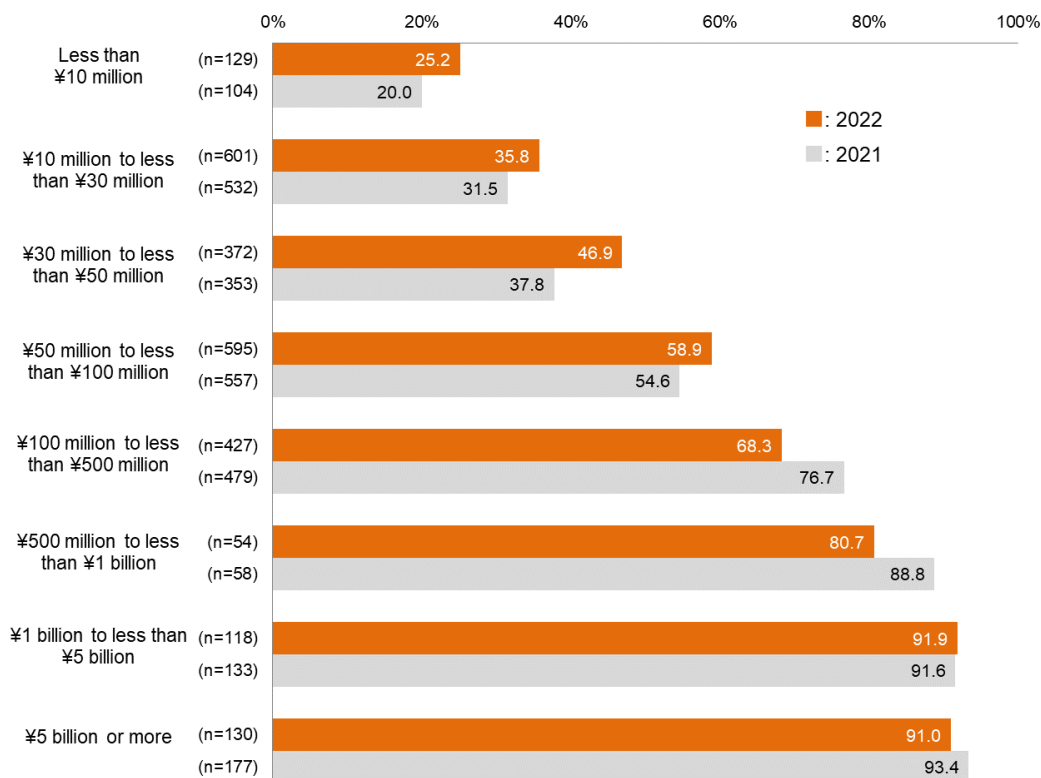
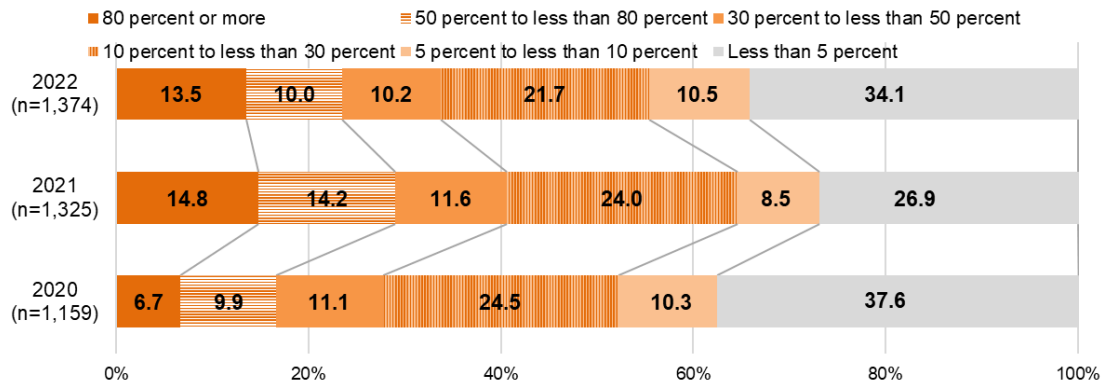
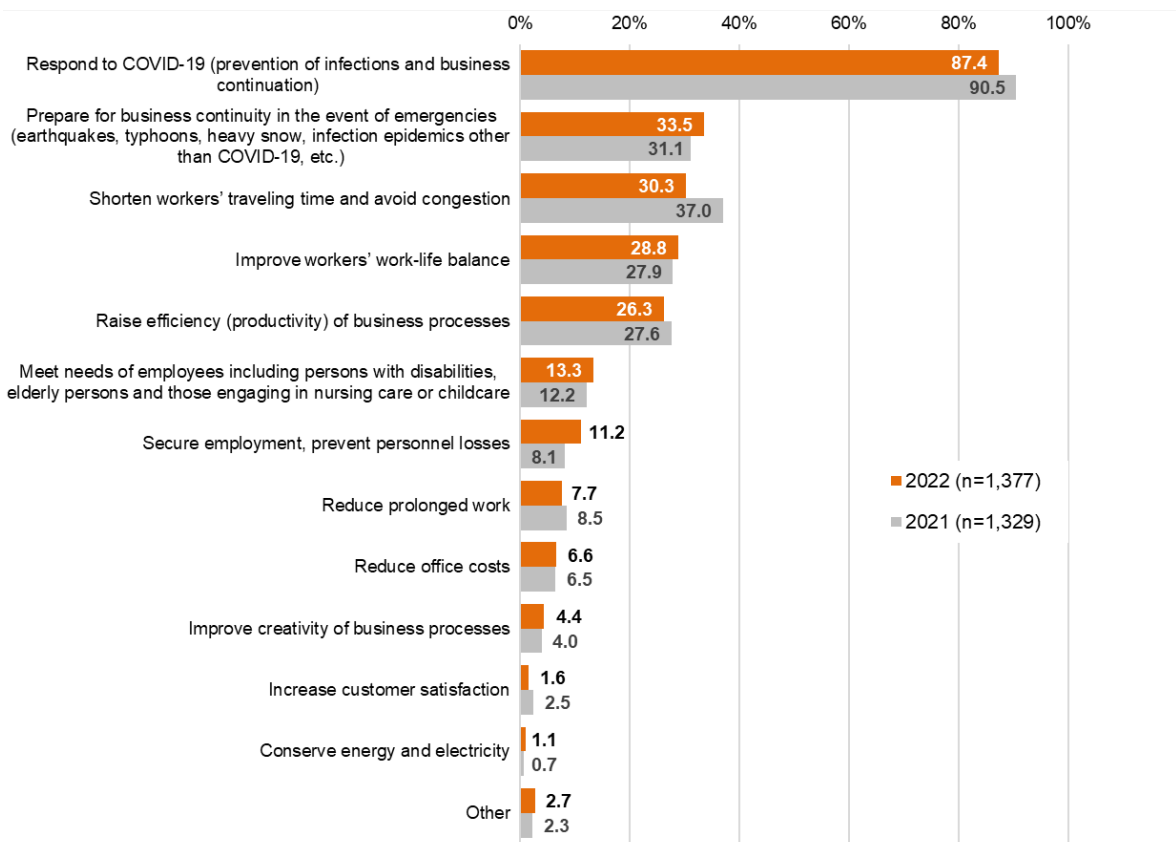


Figure 3-3: Percentage of telework employees



Responses from businesses having introduced telework

Figure 3-4: Purposes of introducing telework (multiple responses accepted)



Responses from businesses having introduced telework

Figure 3-5: Telework benefits (2022)

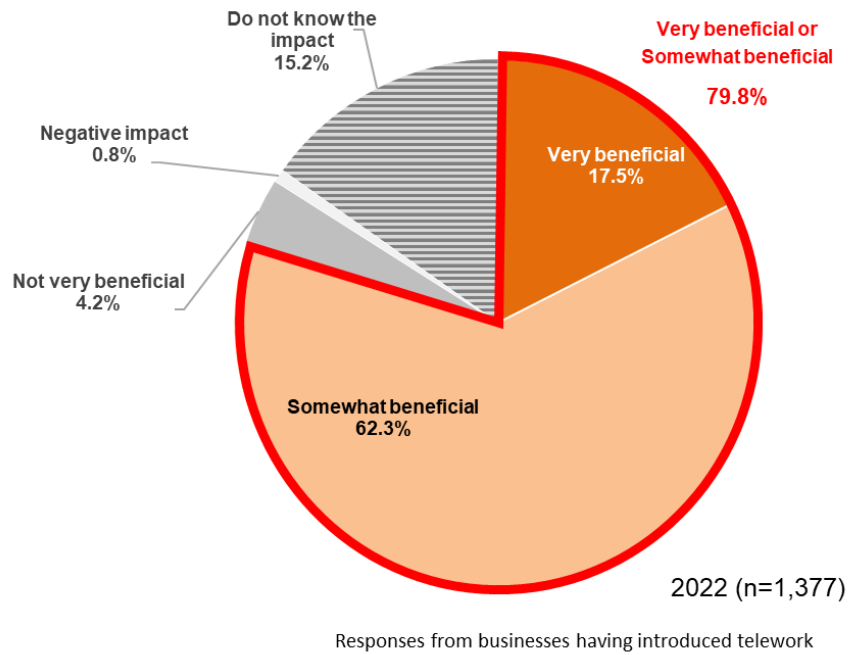
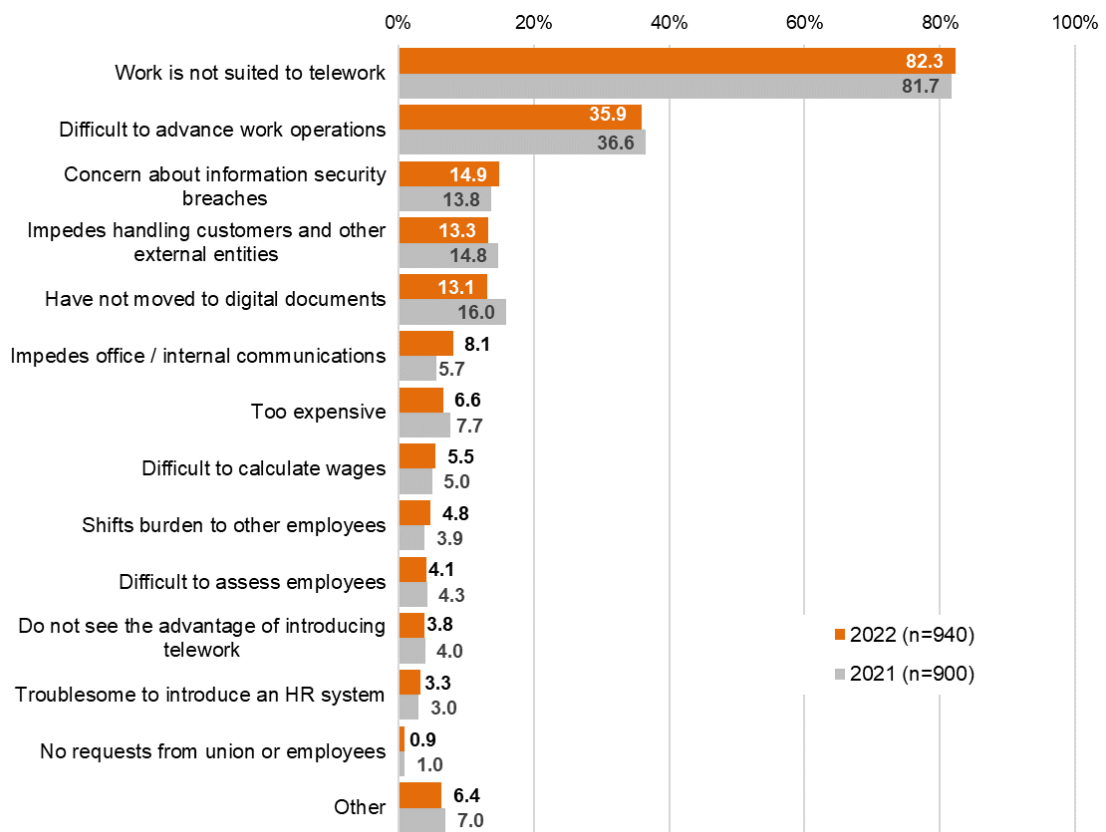


Figure 3-6: Reasons for not introducing telework (multiple responses accepted)



Responses from businesses that have not introduced telework or made plans to do so.

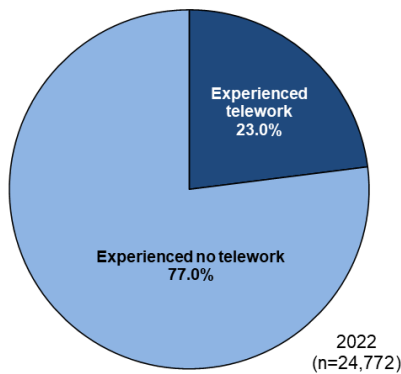
(2) Engagement in telework (individuals)

Of individuals aged 15 or older working for businesses or other organizations, 23.0% have the experience of engaging in telework. The percentage of respondents citing “Working from home” among telework types is the highest at 93.2%.

Of individuals who have not engaged in telework, those hoping to engage in telework account for 15.5%.

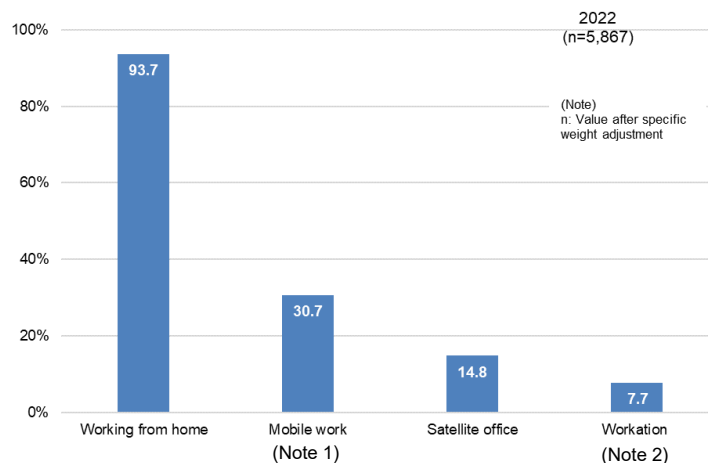
The most frequently cited reason for failing to engage in telework is that “Work is not suited to telework” (52.7%), followed by the reason that “There is not a telework system at the employer” (26.9%)

Figure 3-7: Having engaged and hoping to engage in telework



As a percentage of individuals aged 15 or older and working for businesses and other organizations

Figure 3-8: Type of telework (multiple responses accepted)

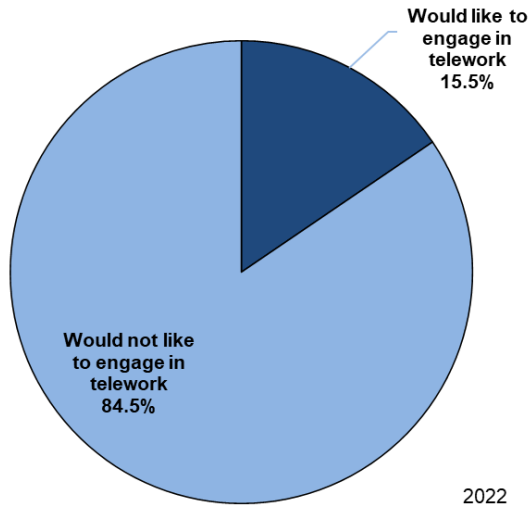


(Note 1) Mobile work refers to sales and other types of work done out of the office, including email and journal creation at transportation facilities or cafes.

(Note 2) Workation means that workers take advantage of telework to spend time on personal vacation while working at places other than their usual workplaces and homes.

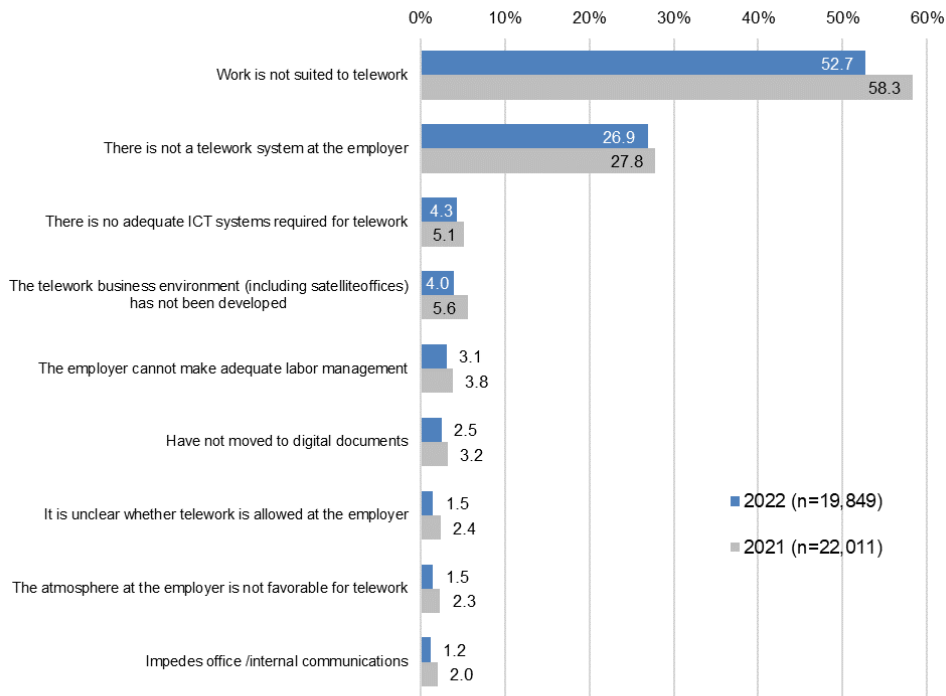
Responses from employees who are aged 15 or more and have engaged in telework.

Figure 3-9: Whether or not individuals would like to engage in telework (2022)



2022 (n=20,273) Responses from employees who are aged 15 or more and have not engaged in telework.

Figure 3-10: Reasons for not engaging in telework (multiple responses accepted)



Responses from employees who are aged 15 or more and have not engaged in telework.

4. Current ICT Usage by Businesses

(1) Cloud computing service usage (businesses)

The share for businesses using at least some cloud computing services (hereafter referred to as “cloud services”) rises to 72.2%.

The most frequently cited among cloud services is “File storage / data sharing” (64.1%), followed by “Information sharing / portal” (53.0%) and “email” (52.5%).

The most frequently cited reason for using cloud services is that “The same services are available irrespective of location or equipment” (51.1%), followed by the reason that “No need to have internal asset and storage systems” (42.5%).

As for the effects of the use of cloud services, 89.0% recognized either “Very beneficial” or “Somewhat beneficial” effects.

Figure 4-1: Transitions in cloud service usage

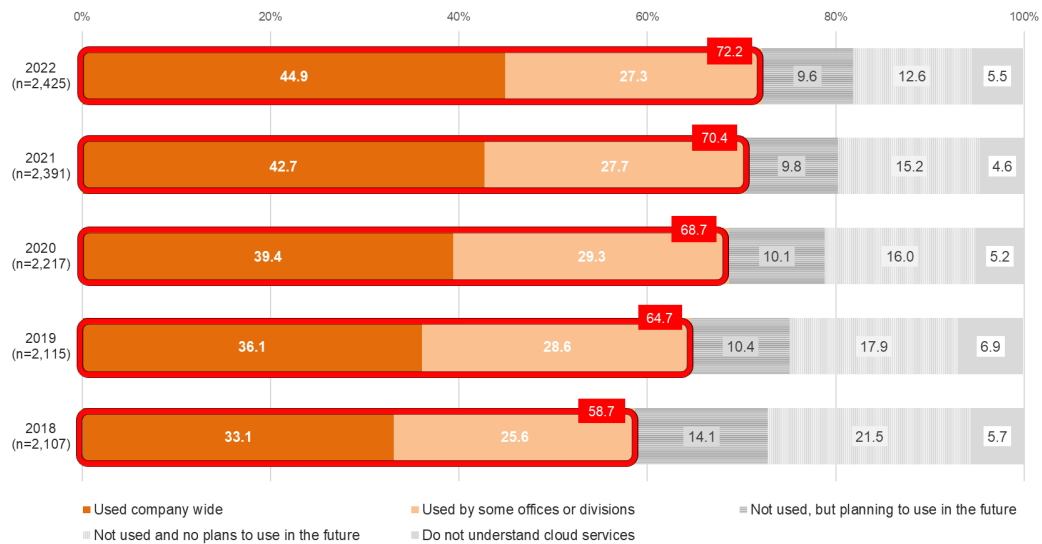


Figure 4-2: Cloud service usage by industry and capitalization

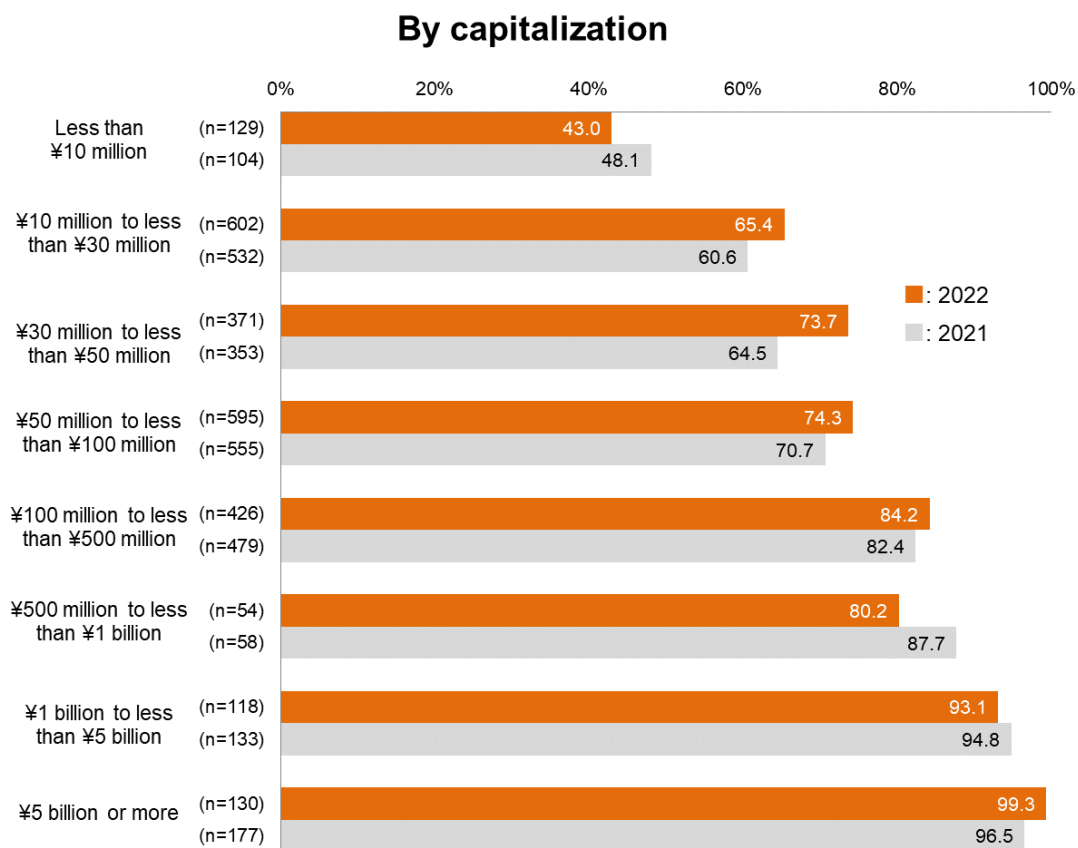
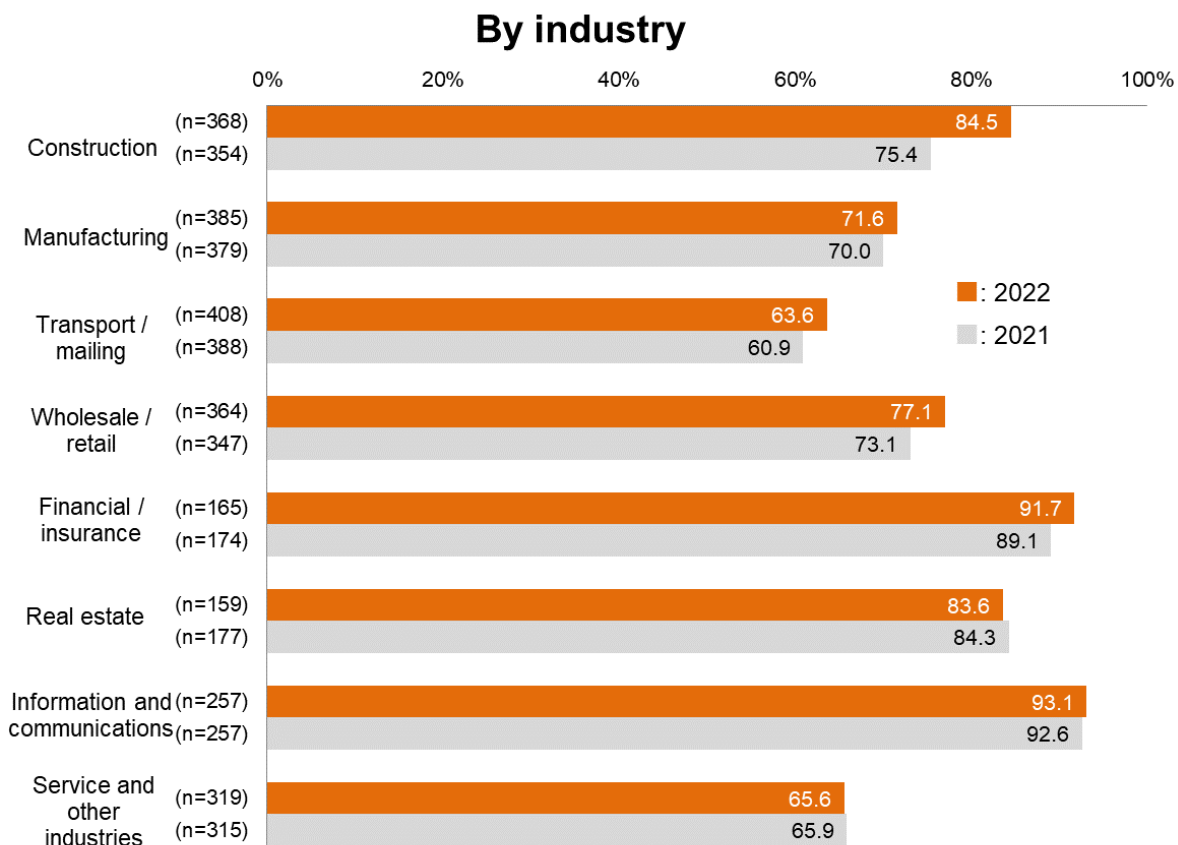


Figure 4-3: Cloud services used by businesses (multiple responses accepted)

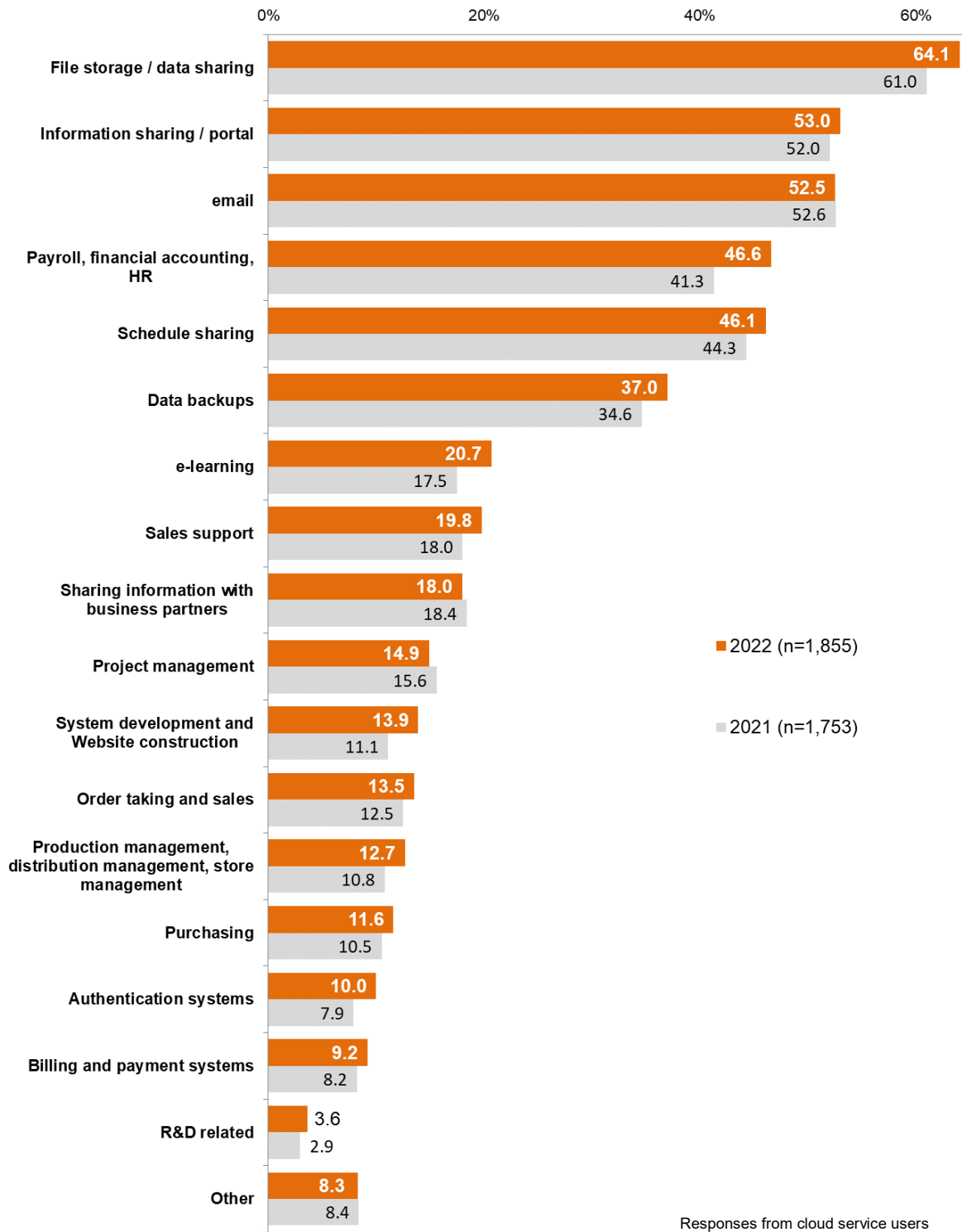


Figure 4-4: Reasons for using cloud services (multiple responses accepted)

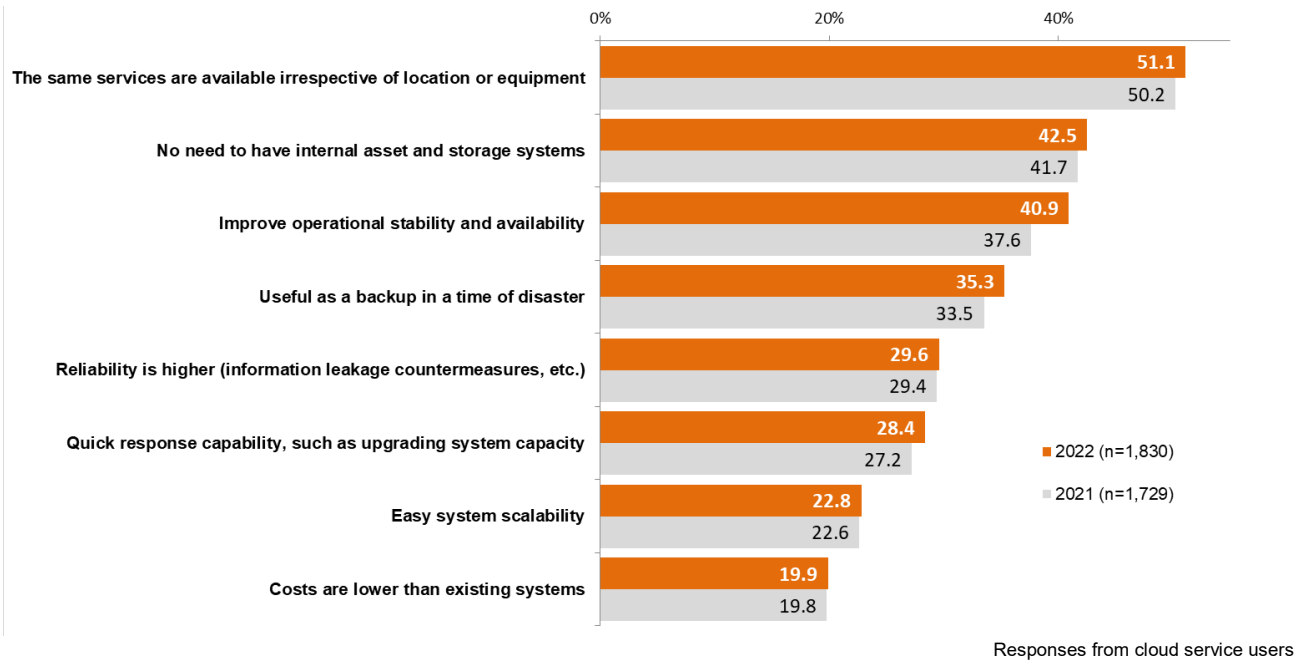
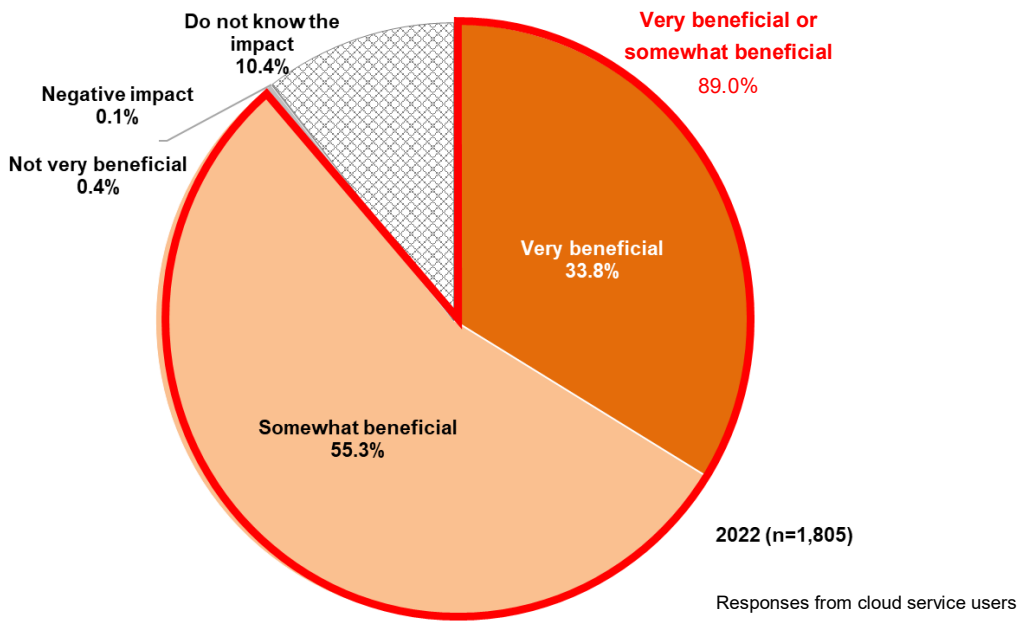


Figure 4-5: Impact of cloud computing services (2022)



(2) Introduction of IoT/AI systems/services (businesses)

Businesses that have introduced IoT and AI systems or services to collect and analyze digital data account for 13.5% of respondents. The percentage of those that have done so and are planning to do so is 24.0%.

Among purposes of digital data collection/analysis with IoT/AI systems, “Improvement of business efficiency/operations” is the most frequently cited (86.4%), followed by “Improvement of customer services” (37.4%) and “Overall optimization of business operations” (28.1%).

Those saying that the introduction of IoT and AI systems or services has been “Very effective” or “Somewhat effective” account for 85.9% of respondents

The most frequently cited among components of IoT and AI systems or services that have been introduced are “Surveillance cameras” (36.9%), followed by “Physical security devices” (33.3%) and “Non-contact IC cards” (28.4%). Among networks for IoT and AI systems, the most frequently cited is “Wired networks” (65.3%). The percentage for “Wireless LAN (WiFi)” has increased to 61.3%.

Figure 4-6: Introduction of IoT and AI systems or services

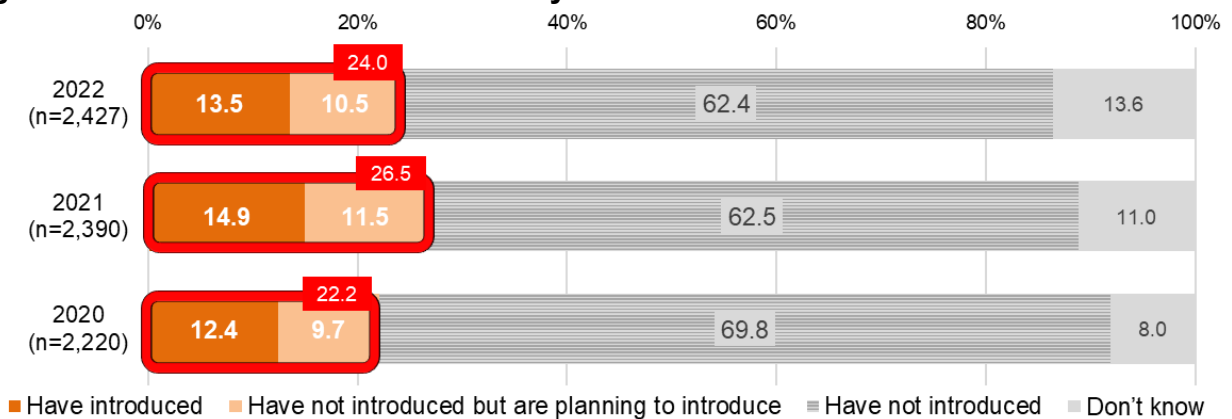
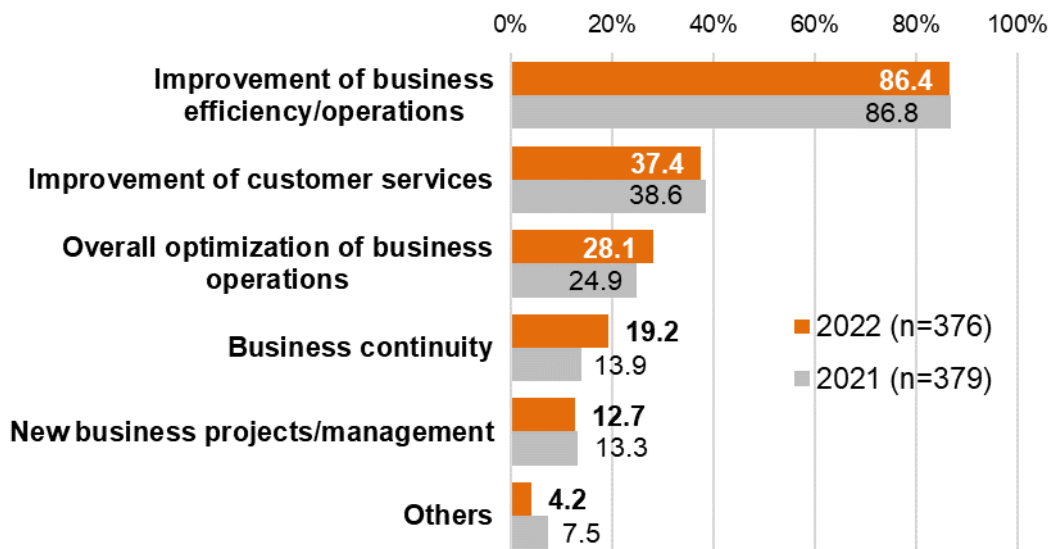


Figure 4-7: Purposes of digital data collection/analysis (multiple answers accepted)



Responses from IoT, AI and other system service users

Figure 4-8: Effects of IoT/AI system/service introduction (2022)

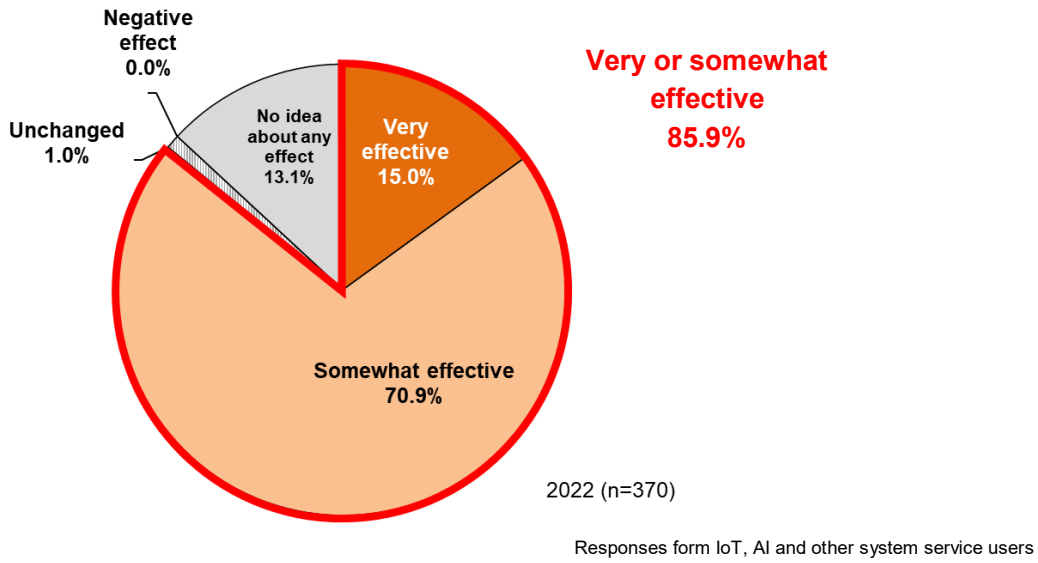


Figure 4-9: Components of AI/IoT systems/services (multiple answers accepted)

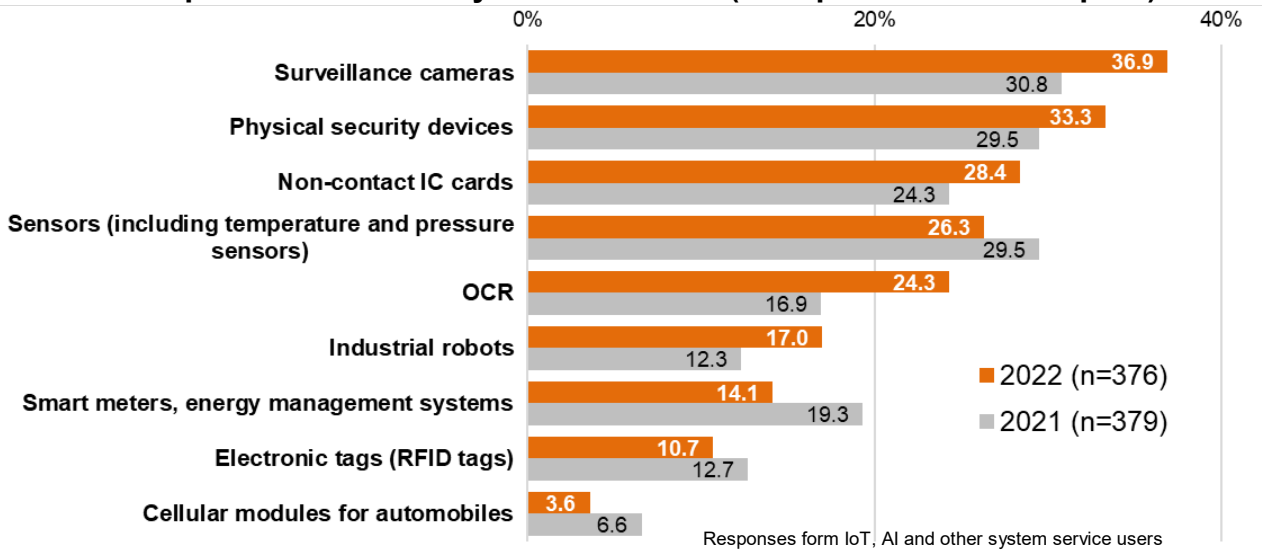
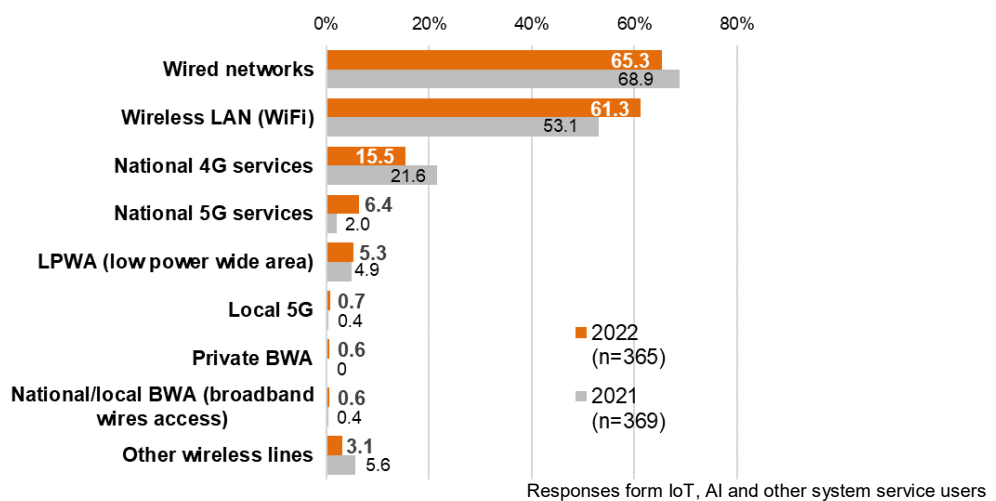


Figure 4-10: Networking IoT and AI systems (multiple answers accepted) (2022)

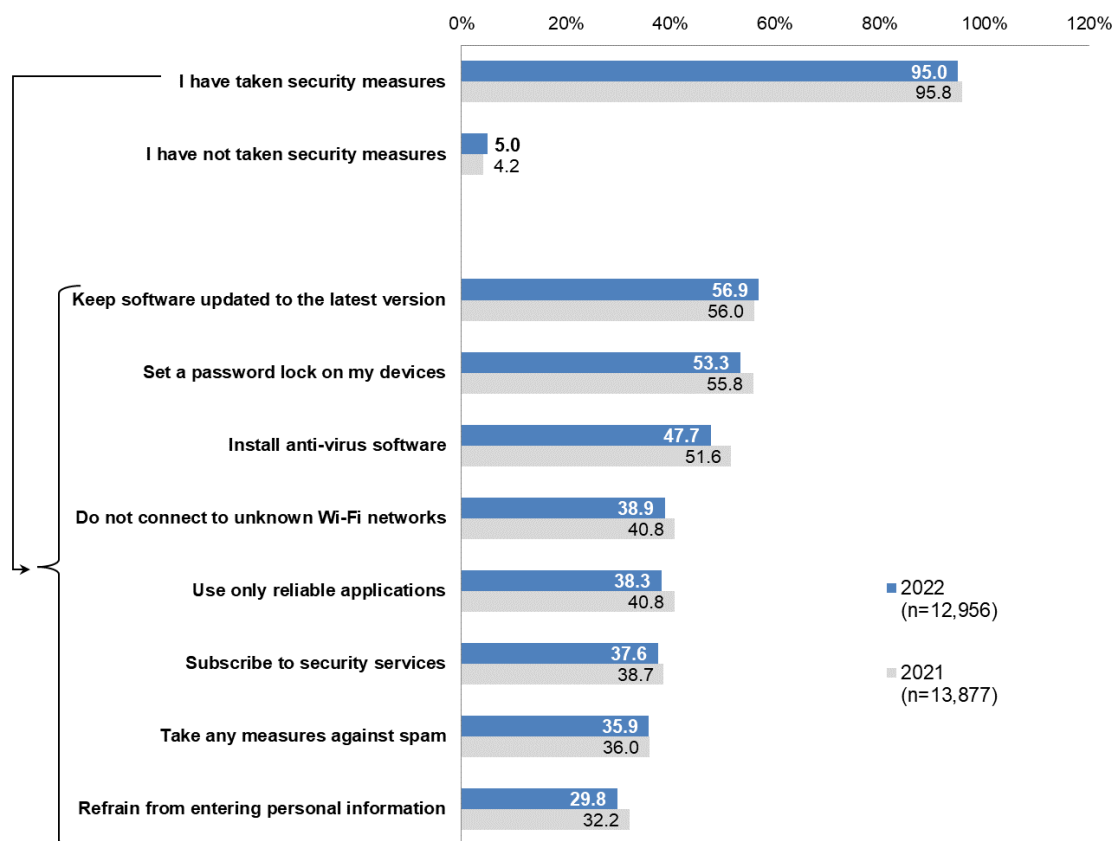


5. Safety and Security Efforts

(1) State of security measures (households)

Of households that use the internet, 95.0% have taken some security measures. The most common security measures taken are “Keep software updated to the latest version,” at 56.9%. This is followed by “Set a password lock on my devices” (53.3%) and “Install anti-virus software” (47.7%).

Figure 5-1: State of security measures (multiple responses accepted)



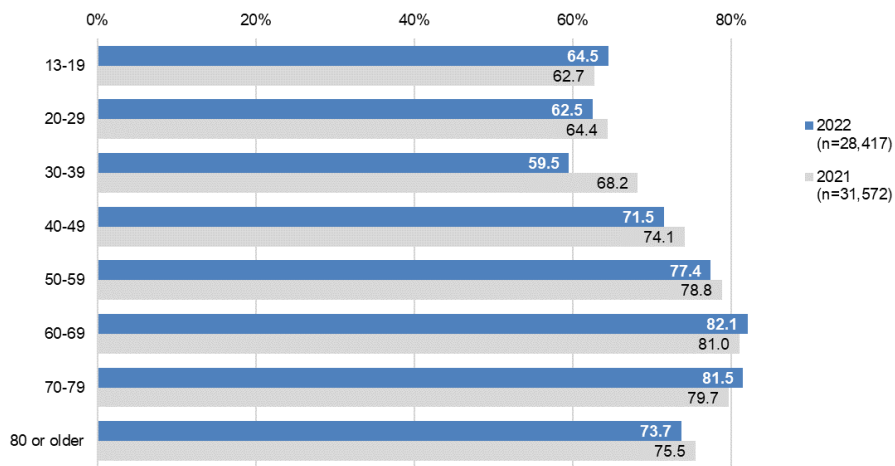
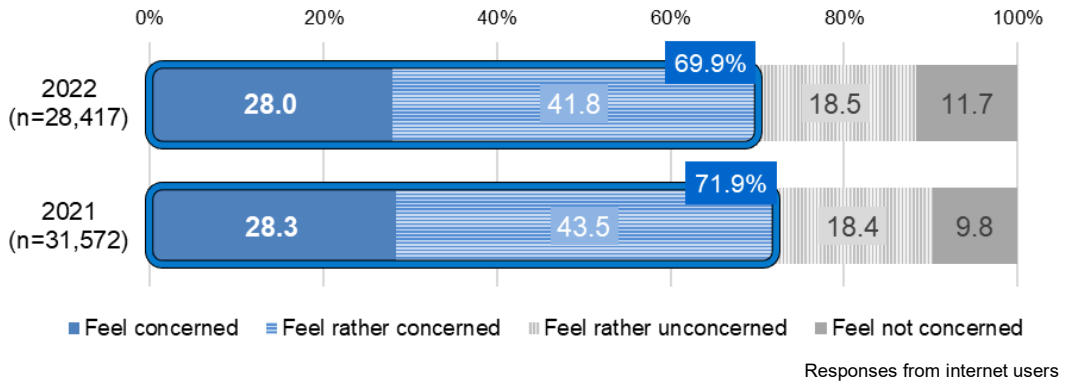
Tabulating responses from households that have at least one member who has used the internet in the past year

(2) Concerns about using the internet (individuals)

The combined percentage of internet users who “Feel concerned” and “Feel rather concerned” during internet use stands at 69.9%.

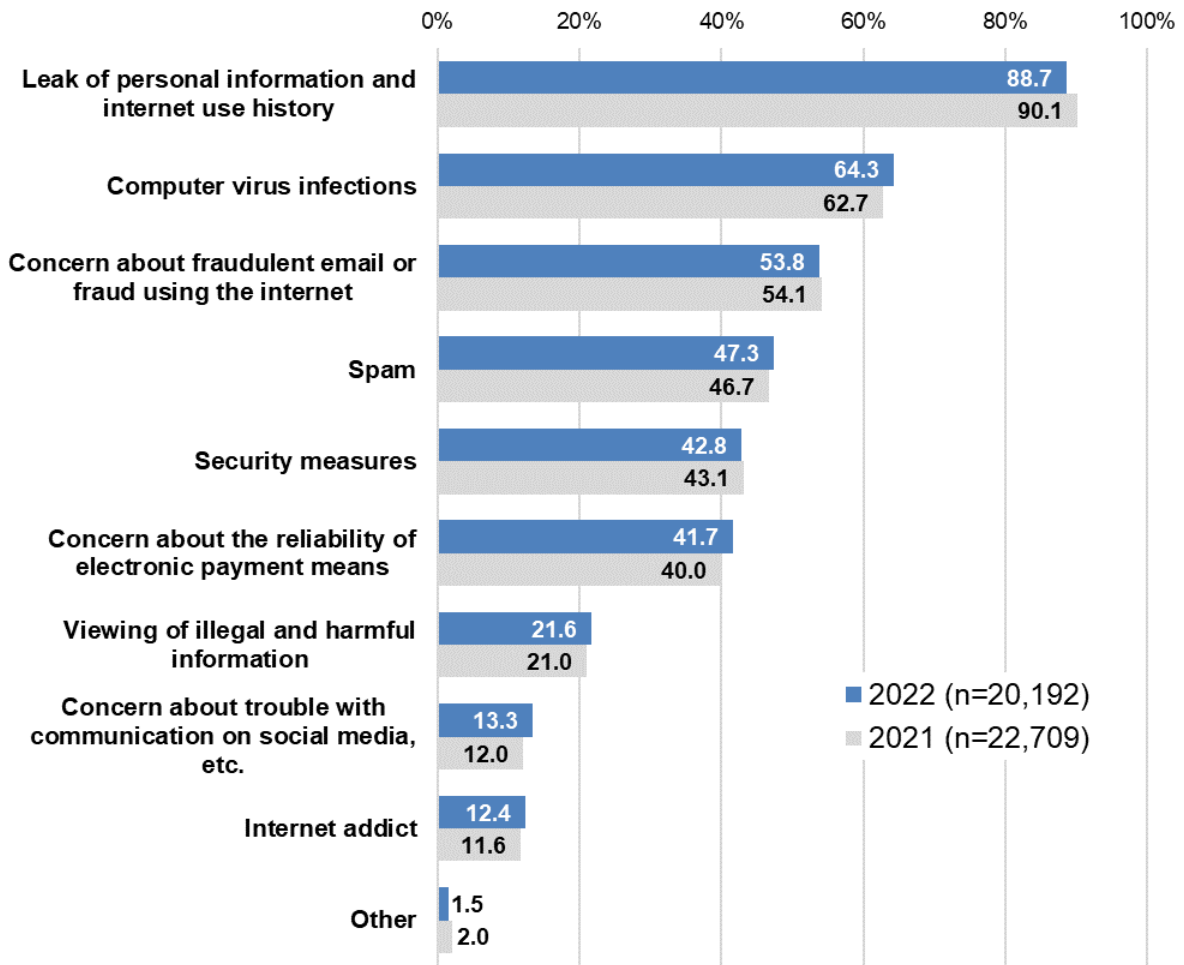
The most frequently cited type of concern about using the internet is “Leak of personal information and internet use history” (cited by 88.7%), followed by “Computer virus infections” (64.3%) and “Concern about fraudulent email or fraud using the internet” (53.8%).

Figure 5-2: Concerns about using the internet



As a percentage of internet users who “Feel concerned” and “Feel rather concerned”

Figure 5-3: Types of concerns about using the internet (multiple responses accepted)



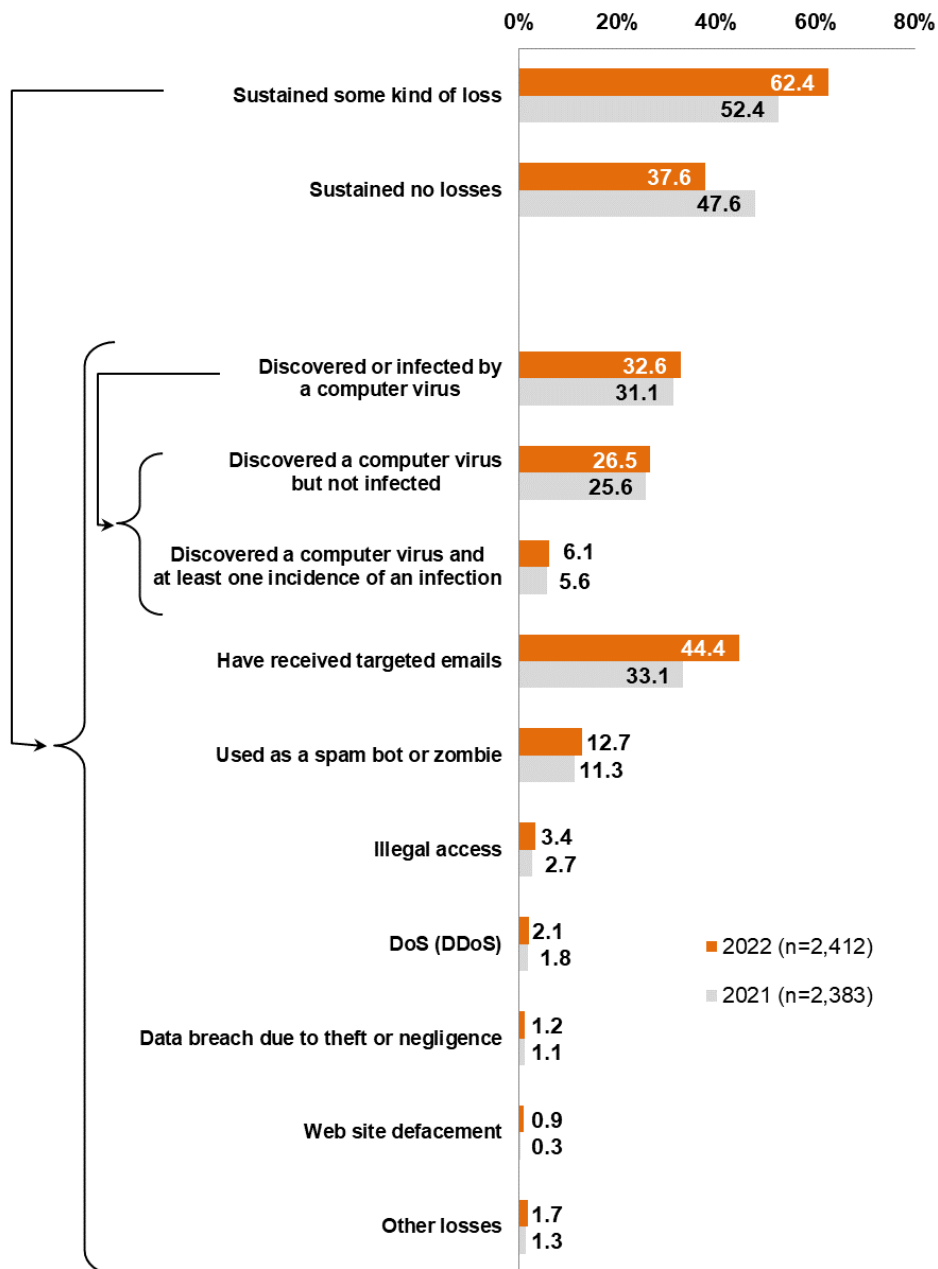
Responses from individuals who have used the internet and have concerns

(3) Security breaches against information-communication networks and security measures implemented (businesses)

As for security breaches that occurred in the past year during the use of information-communication networks, the percentage of businesses that “Sustained some kind of loss” comes to 62.4%, up 10.0 points. The most frequently cited type of security breach is “Have received targeted emails” (cited by 44.4%), followed by “Discovered or infected by a computer virus” (32.6%).

The percentage of businesses that implement some security measures is 98.4%. By type of security measure, the implementation rate is the highest at 84.3% for “Install anti-virus programs on computers and other devices (operating systems, software, etc.)”, followed by 57.7% for “Install anti-virus programs on servers” and 57.2% for “Control access with IDs, passwords, etc.”

Figure 5-4: Security breaches that occurred in the past year during the use of information-communication networks (multiple responses accepted)



Responses from businesses using the internet

Figure 5-5: State of security measures (multiple responses accepted)

