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AI Governance Survey

A shift in the ways companies use and invest in AI brought about by changes in the social landscape

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Preface

The novel coronavirus (COVID-19) pandemic has brought about drastic changes to the worldwide economy. Voluntary and governmental restrictions on going outside and traveling abroad for the purpose of controlling the spread of infection have curtailed economic activities. On the other hand, investments have been pouring into digitalization and AI, and both have experienced massive growth, especially in China and the US. COVID-19 has also triggered other new economic trends, such as the rapid growth of tech companies involved in the area of online communication, for which demand has grown significantly under the pandemic.

As for Japan, telecommuting and other forms of work style reform have become more widely adopted. With that said, issues impeding teleworking from taking a stronger hold have been brought into sharp relief at certain companies. For example, the lack of preparation for remote work causing equipment setup to take a long time and the Japanese *hanko* (stamp) culture for recording various approvals gets in the way of relocating the workplace from the office to individual homes. Moreover, the fact that Japan is lagging behind in AI technology development has also been pointed out as a general issue. Insufficient investment into AI and a lack of understanding of relevant research are raised as the causes of this issue.

IT and AI utilization is set to play an important role in taking on unprecedented societal challenges, such as the transition to the New Normal during and/or after the pandemic. Not only is the country as a whole becoming increasingly aware of the need to adopt AI, but "Society 5.0"[1] was also proposed as the future society that Japan should endeavor to become in the government's 5th Science and Technology Basic Plan, which aims to make Japan "the best suited nation in the world to innovation" for science and technology. Society 5.0 calls for the creation of a society in which AI provides necessary information at the right timing, with technologies such as robots and autonomous cars being used to overcome issues such as the declining birth-rate and aging population, depopulation in rural areas, and wealth inequality.

Another point to note is that it's important to not only promote the use of AI, but to also have ways of addressing the risks involved. As AI performance improves, more operations tend to become automated. Going forward, there will be more and more situations where AI makes a decision that is then immediately applied to operations without having a human confirm the decision first. In such cases, the risk of AI prediction accuracy deteriorating over time and potential problems with ownership of training data and AI models, particularly when development is outsourced to a third party. Solidifying governance to combat such risks is yet another issue. In response to the US and Europe releasing their basic philosophy on regulations for AI systems and following up with discussions on what specific regulations would entail, Japan's Ministry of Economy, Trade, and Industry (METI) released its *AI Governance in Japan Ver. 1.0 (Interim Report by the Expert Group on Architecture for AI Principles to be Practiced)*[3] on January 15, 2021. This and other initiatives show how the country is becoming increasingly aware of the need to address AI-related risks.

In response to this recent trend, the Deloitte Tohmatsu Group conducted our AI Governance Survey 2019[2] last year. We expected participating companies to report that while they were running proofs of concept (PoCs), they were stuck at that stage and were unable to progress their initiatives to full-scale application. However, survey results showed that 50% of respondents were in fact stuck at an earlier stage, struggling to conduct PoCs to begin with.

For this year's survey, we anticipated that the situation would be drastically altered from that of last year due to COVID-19 pushing digitalization, among other disrupting factors. Thus, we investigated changes in how companies were using and investing in AI. Moreover, we also predicted what issues would emerge in the midst of these anticipated changes, and surveyed issues preventing use of AI from 5 perspectives: strategy, talent, process, data, and technology. This survey was conducted based on Deloitte's proprietary framework, the "Insight Driven Organization (IDO)," for promoting data analysis activities to help resolve management issues as well as foster management sophistication.

The range of AI applications is expanding at a dizzying pace as computer processing capabilities improve and as innovation in AI technology continues to advance. As AI technology develops, it is crucial for companies to nail down the areas of their business in which to employ AI. As such, it is necessary to properly conduct PoCs and to consider how to progress to full-scale application while also addressing risks in using AI. We hope that this survey will help companies looking to employ AI toward further development of their businesses.

Survey outline

The survey was conducted by the Deloitte Tohmatsu Group between December 8, 2020 and January 31, 2021 to investigate all departments in all industries based in Japan in regards to use of AI as well as their awareness of the risks involved and how they were managing those risks. We received 91 online responses, and the results have been compiled into this report.

As for respondents' job positions, 18% consisted of upper-level management executives, 69% section/department managers, and 13% at or below subsection chief/chief officer. Furthermore, 88% of companies to which respondents belonged make annual sales of over 100 billion yen.

Note: For the purpose of this survey, "AI" refers to a system or software that identifies patterns of fed data to predict future trends or uses data to learn decision criteria in order to make decisions on their own. (See the Ministry of Internal Affairs and Communications' *AI Utilization Guidelines: Practical References for Utilizing AI*[4].)

Note: Respondent answer percentages are rounded to the nearest whole number, so the total does not add up to 100% on some graphs.

Executive Summary

In this section, we summarize survey results into four key points, then discuss issues that organizations should think about as they promote use and governance of AI.

The percentage of respondents using AI has skyrocketed; it is now time to move beyond PoCs and into serious adoption of AI in anticipation of full-scale application.

85% of respondents reported that they were using AI, a significant increase compared to last year's 56%, thus demonstrating that AI utilization has been making significant headway. Of the respondents using AI, 70% said that they had made it to the PoC stage (compared to the 47% from last year). Our survey last year showed that, what the diffusion of innovation calls the "early majority" had just begun using AI, but this year's survey demonstrated that the "late majority" has started using it as well.*

Moreover, of the respondents who had run PoCs, 81% had progressed them to full-scale application (73% last year). Nearly half of all respondents have progressed to full-scale application, indicating that now is the time to move beyond PoC trial operations and into serious adoption of AI in anticipation of full-scale application.

The larger the investment into AI, the greater the effect tends to be. AI investment into new business creation is also on the rise.

The bigger the investment amount, the more substantial the effect in terms of both increasing sales and reducing costs tends to be, thus indicating that companies are currently making appropriate investments. For respondents seeing returns on investment, 51% reported increases in sales while 68% reported reduced costs. While cost reduction tended to be an easier-to-achieve outcome, survey results suggested that adoption of AI is also beginning to lead to increased sales.

In terms of the purposes for adopting AI, as was the case last year, operational efficiency (86%) and cost reduction (58%), both of which entail impacts that are easy to estimate, were the most cited. While last year's survey had creation of new business (45%) being cited less often than growth in sales for existing businesses (50%), this year saw the former (56%) surpassing the latter (49%). AI is evidently starting to be used in new businesses more. This could be understood as a sign that companies are sensing a necessity toward taking on new businesses and transforming themselves as COVID-19 brings about social change.

Although AI adoption is moving forward, organization-level use is insufficient.

We investigated the issues that prevent further use of AI from 5 perspectives: strategy, talent, process, data, and technology.

In terms of the number one issue in strategy, "Our organization does not have a culture of continuously striving for innovation" was the most commonly reported, thus indicating that AI isn't being utilized on an organizational level. On the other hand, the fact that this issue is being raised at all is thanks to AI being adopted by certain parts of the organization (such as on the departmental level), and is evidence that use of AI has advanced.

Respondents felt that organizational challenges were one of the factors hindering further standardization, streamlining, and establishment of governance in terms of talent, process, and data. Respondents have also pointed out the need to move operations in-house, as a major technological challenge that needs to be overcome in order to achieve standardization, streamlining, and governance.

Even if companies are aware of AI-related risks, they are struggling with figuring out how to address them.

When asked about how they were currently addressing risks involved in using AI, around 20% of respondents reported "Such risks are recognized, but we do not know how to address them" on all risk categories. As was the case last year, even when companies are aware of risks in using AI in their businesses, they tend to struggle with figuring out how to address them.

A considerable number of respondents answered that "AI which pose such risks are not used," suggesting that people are adopting AI starting from those that pose the least risk, and are only using AI within a limited scope.

The results of this survey have shown that more companies are running PoCs, and that use of AI has made significant progress compared to where it was last year. Furthermore, some companies have heavily invested into AI and are already seeing significant returns on their investments. We are also seeing a shift toward the creation of new businesses, suggesting that the time has come to employ AI in full scale.

With that said, we found that challenges exist when it comes to using AI on an organizational level and that insufficient consideration is given to addressing risks. While AI investment is expected to increase in the future, large-scale investments require decisions and actions on an organizational level. Thus, it will be crucial to create a culture of continuously striving for innovation while simultaneously strengthening organizational governance to combat risks in order to ensure that big returns are achieved with a high degree of certainty.

*The "early majority" is the group that is relatively cautious about adopting new things, but adopts them earlier on average. The late majority is the group that is skeptical about new things, and waits until they see that many others are adopting them.

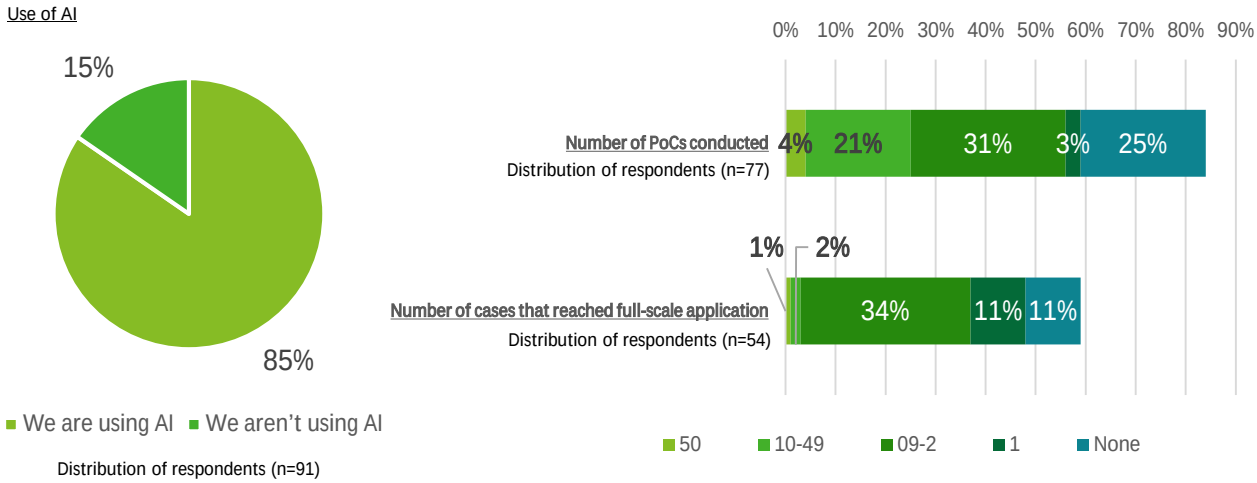
How AI is being used

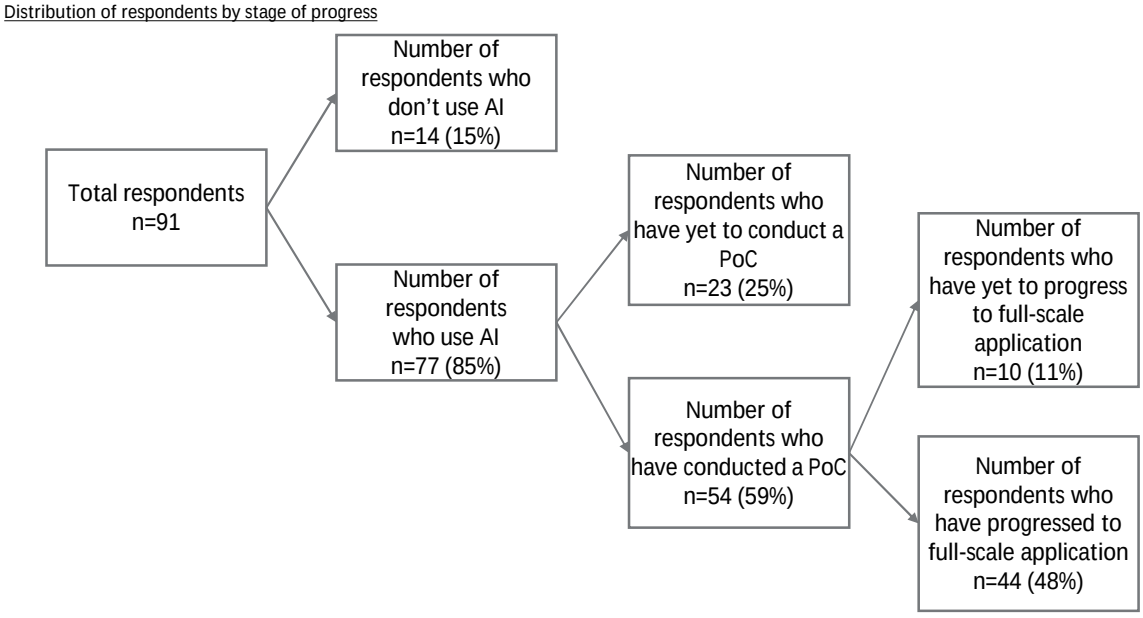
Percentage of companies putting AI to use

When asked "In which areas of your business does your company use AI?", 15% of survey respondents answered that they don't use AI at all (e.g., "We have yet to use it") while 85% answered that they were currently using AI (compared to 56% in last year's survey). Looking at another question, "How many ongoing and past AI initiatives have you conducted a PoC?", 30% of respondents using AI said "None." From this, we can see that 70% (as opposed to 47% last year) of respondents currently using AI have made it to the PoC stage. Our survey last year showed that, what the diffusion of innovation calls the "early majority" had just begun using AI, but this year's survey demonstrated that the "late majority" has also started using it as well.

Looking at one last question, in response to "How many of your PoCs have made it to full-scale application?", 81% (as opposed to 77% last year) of respondents who conducted a PoC had progressed to full-scale application. Nearly half of all respondents have progressed to full-scale application, indicating that now is the time to move beyond PoC trial operations and into serious adoption of AI in anticipation of full-scale application.

Figure 1 Percentage of respondents who have adopted AI and the stages they are at





Note: Percentages refer to the percentage of total respondents

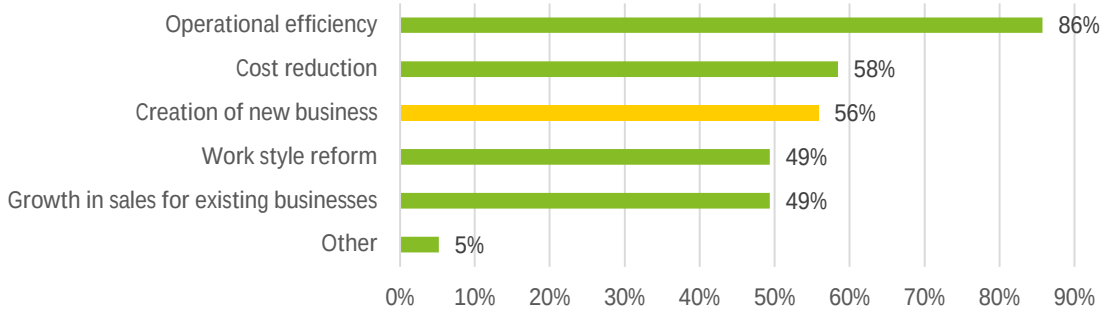
Purpose and area of use

As was the case last year, respondents who reported that they were using AI most often cited operational efficiency (86%) and cost reduction (58%) as their purpose for doing so, both of which entail impacts that are easy to estimate. However, more cited creation of new business (see orange bar below – 56% compared to 45% last year) than growth in sales for existing businesses (49% compared to 50% last year), suggesting that AI is starting to be used in new businesses more.

Once again, as in the previous year, many companies are using AI in areas where it is easy to reduce costs and improve operational efficiency, such as clerical (39%), marketing (27%), and manufacturing (23%). This year's survey was characterized by an increase in research & development (see orange bar below – 32% compared to 25% last year), indicating that AI utilization is spreading into areas where it has not been used as much in the past.

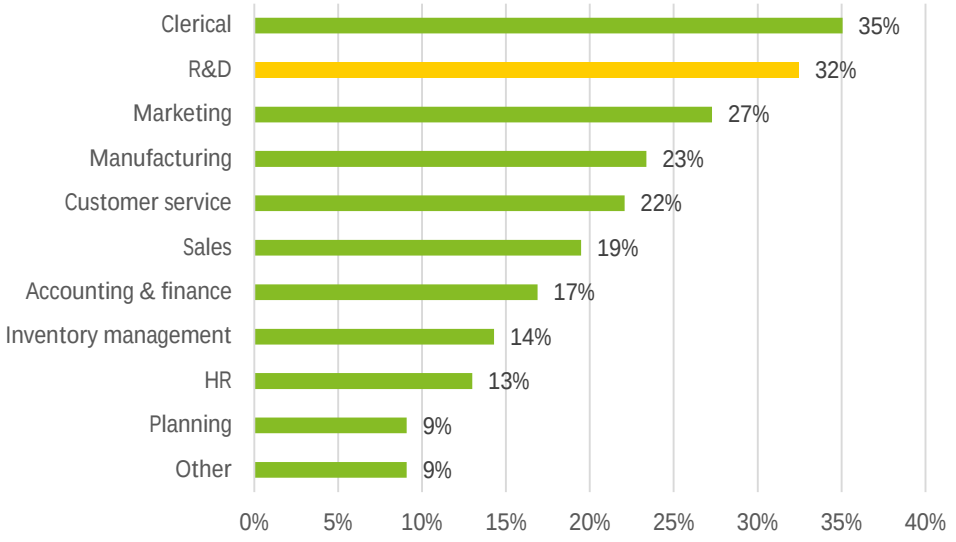
Figure 2 AI utilization purpose and operational areas in which it is being used

Purpose of adopting AI



Distribution of respondents (n=77) Note: As respondents were allowed to select multiple answers, the total exceeds 100%

Operational areas in which AI is being used



Distribution of respondents (n=77) Note: As respondents were allowed to select multiple answers, the total exceeds 100%

Returns on investment into AI

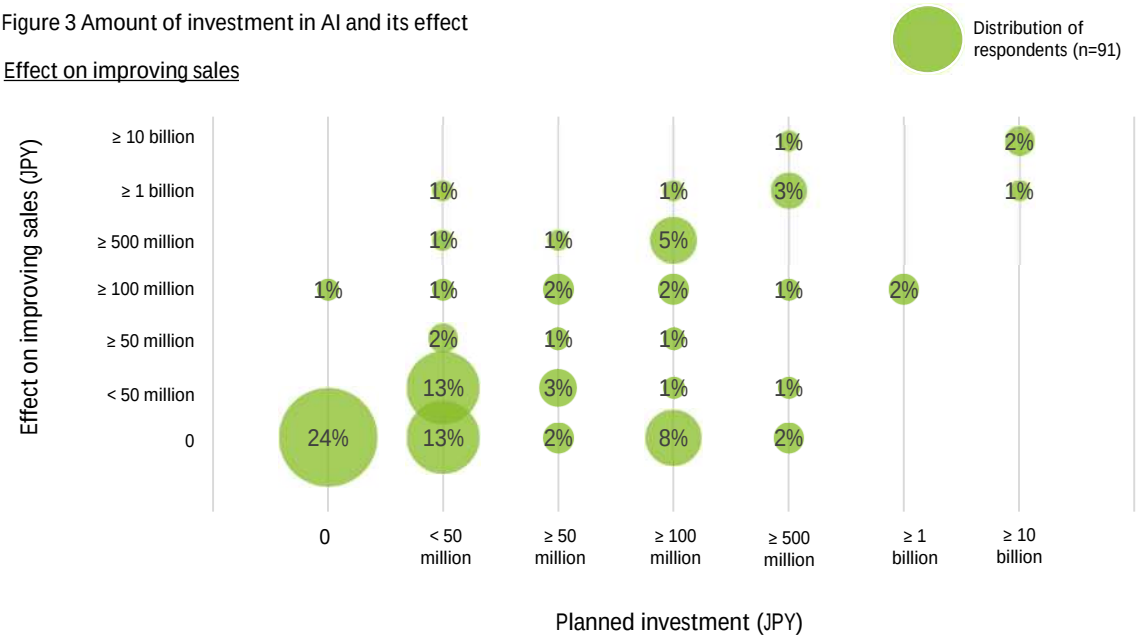
We surveyed the characteristics and effects of investments in 3 questions: “What is the approximate amount that your organization plans to invest into AI technology in the next year?”, “Approximately how much have investments into AI technology improved your annual sales figures?”, and “Approximately how much have investments into AI technology reduced your annual costs?”

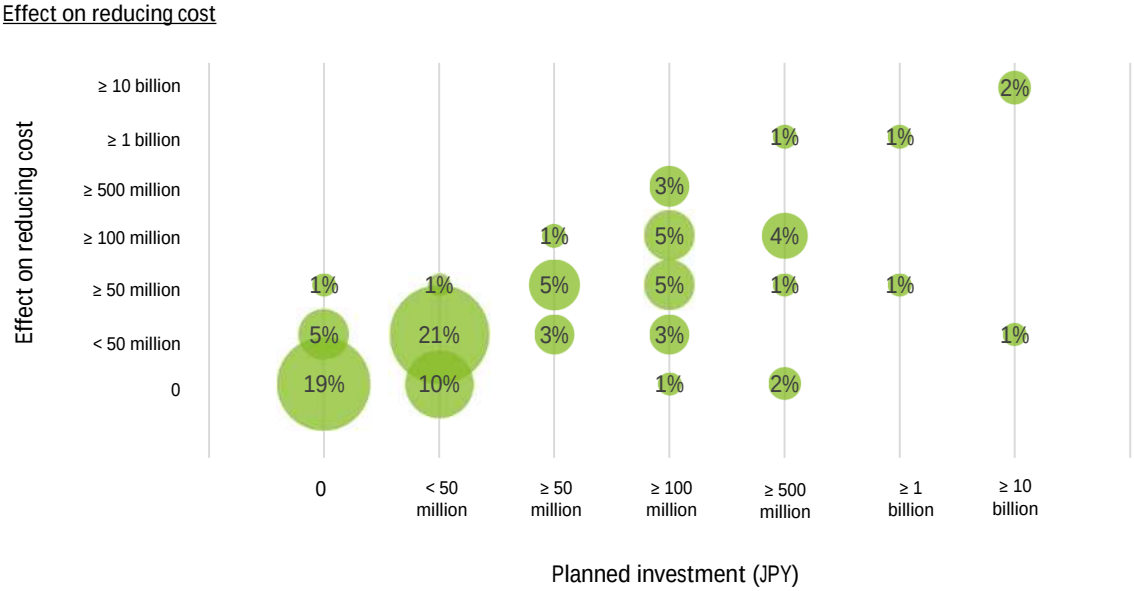
Of the respondents who saw returns on their investments, 51% saw an improvement in sales figures while 68% saw a reduction in costs, so it seems that—between the two—it is generally easier to reduce costs. The fact that it is comparatively easier to predict cost reductions could have been a factor leading to this result.

However, we can see that, as awareness of the need to create new businesses increases, use of AI is beginning to improve sales as well.

Despite the overall tendency of larger investments producing greater results, it is necessary to make appropriate investments while considering the risks associated with AI, as larger investments also means a greater degree of variance in the produced results.

Figure 3 Amount of investment in AI and its effect





Spread of AI adoption

When performing this AI survey last year, we hypothesized that most respondents would be "stuck in the PoC stage – repeating PoCs over and over again and struggling to make it to full-scale application. However, last year's survey results indicated that many respondents had not even reached the getting "stuck at the PoC stage" because they were unable to conduct PoCs to begin with.

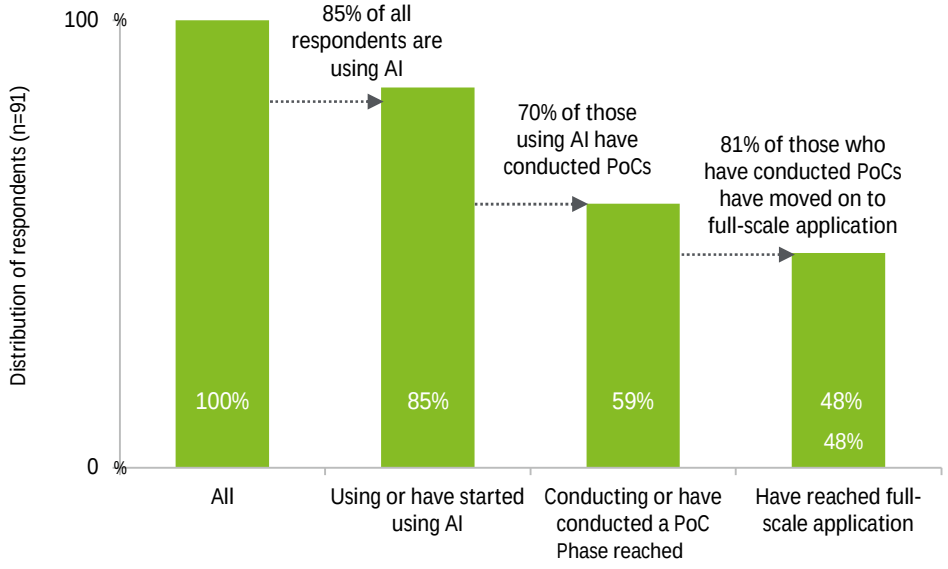
This year's survey results reveal a different picture on how the progress of AI adoption has changed in just one year.

- 85% of all respondents are currently using AI (compared to last year's 56%)
- 70% of all respondents using AI are conducting/have conducted a PoC (compared to last year's 47%)
- 81% of all respondents conducting a PoC also made it to full-scale application (compared to last year's 73%)

In the last survey, only 26% of total participants indicated that they had conducted a PoC, but that number jumped to 59% this time around, so we can see that the issue of companies not being able to conduct a PoC has improved.

Furthermore, as 81% of respondents who conducted a PoC also reached full-scale application, we can say that adoption of AI has spread and we have entered the stage of practical use. Despite the increase in the percentage of respondents conducting PoCs, the percentage of respondents who have reached full-scale application has also increased, indicating that PoCs are being conducted appropriately. By building up experience with planning and conducting PoCs, companies are expected to become able to achieve positive results regardless of whether their goal is to reduce costs, increase sales, or something else.

Figure 4 Distribution of respondents who have reached each stage



In this section, we have observed the following trends in the use of AI:

- Efforts toward adopting AI were limited to the early majority last year, but have since expanded to the late majority this year.
- Nearly half of all respondents have progressed to full-scale application, suggesting that it is time to move beyond PoC trials and into full-scale AI application.
- In terms of purpose, respondents continued the trend from last year in that many were launching their efforts in areas where results are easier to see (e.g., operational efficiency, cost reduction). However, AI use in creating new businesses exceeded that in promoting growth of sales for existing businesses, suggesting that AI is increasingly being used in new businesses. Use of AI has also seen expansion into areas where progress had not been seen in the past.
- As for returns on investment, it was generally easier to achieve results with cost reduction, but companies are starting to see an improvement to sales as well.
- 85% of all respondents said they were using AI, and with PoCs and full-scale applications underway, it seems that AI has entered the practical application stage.

In the next section, we will further clarify the challenges that companies face in furthering the use of AI based on the results of the survey.

Issues preventing further use of AI

We asked survey respondents about the challenges they face when furthering use of AI from 5 perspectives: strategy, talent, process, data, and technology.

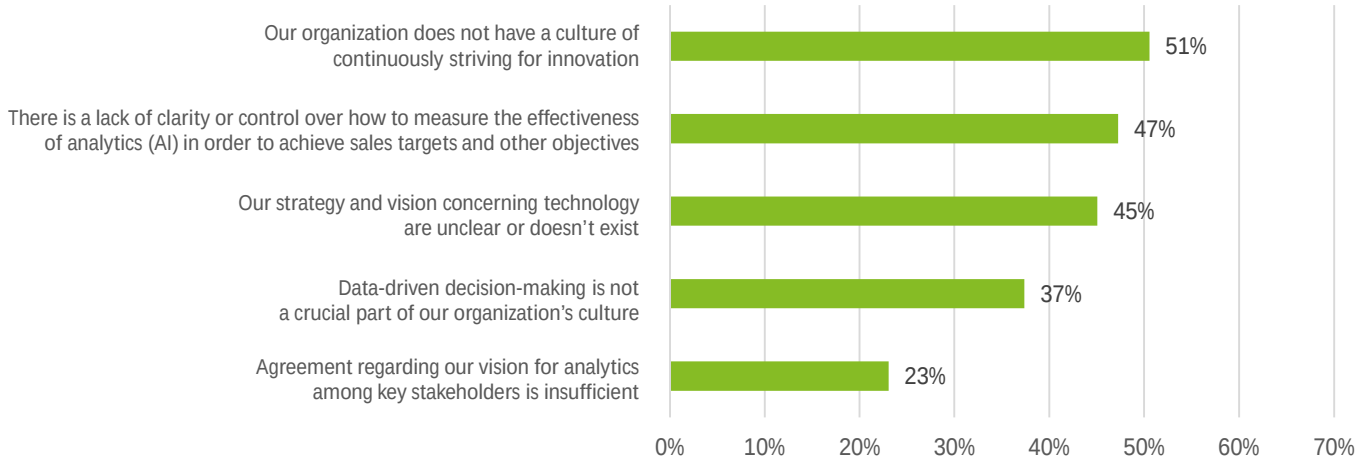
In terms of issues in strategy, the most commonly cited answer was “Our organization does not have a culture of continuously striving for innovation.” As indicated in the previous section, which looks at how AI is being used, while we can say that progress is being made on conducting PoCs and implementing full-scale application, this progress is only happening at the departmental level. Evidently, use of AI at the organizational level is still in its infancy.

As a result, not much headway is being made in terms of standardization, streamlining, or governance. When looking at the questions we posed regarding talent, process, and data, we can see that a large percentage of respondents felt that “There isn’t anyone who can drive organizational change using analytics (AI)” for talent, “An agile process for making use of analytics (AI) does not exist or is not sufficiently established” for process, and “Data isn’t subject to quality control or maintenance, and this is hindering our ability to use AI” for data.

Furthermore, a considerable number of respondents answered that “We are not making progress on bringing operations in-house, and the scope to which we should do this is not clear” for technology. This indicates that there is a sense that more operations must be brought in-house in order to standardize, streamline, and administer governance.

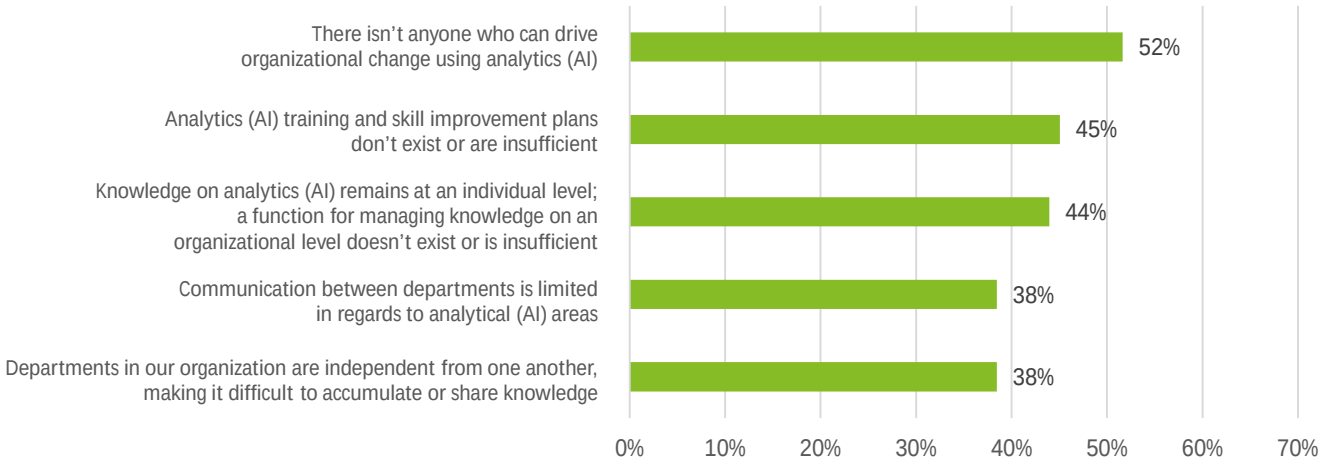
Figure 5 Issues preventing further use of AI

Strategy



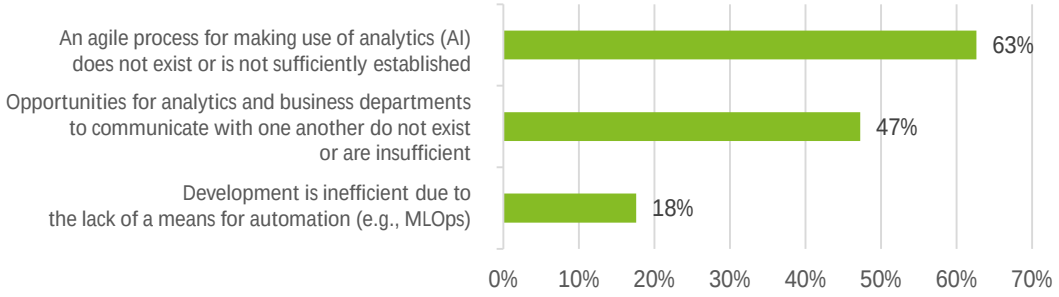
Distribution of respondents (n=91) Note: As respondents were allowed to select multiple answers, the total exceeds 100%

Talent



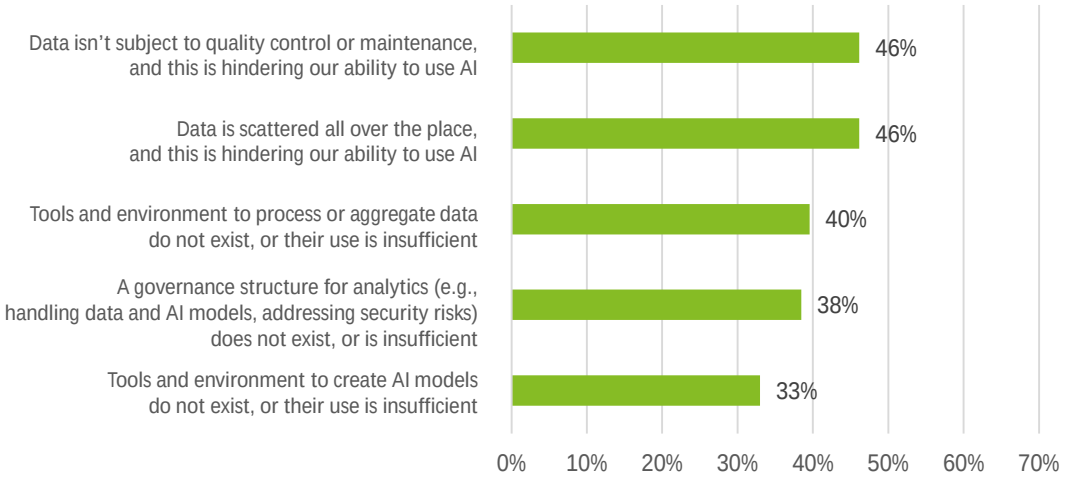
Distribution of respondents (n=91) Note: As respondents were allowed to select multiple answers, the total exceeds 100%

Process



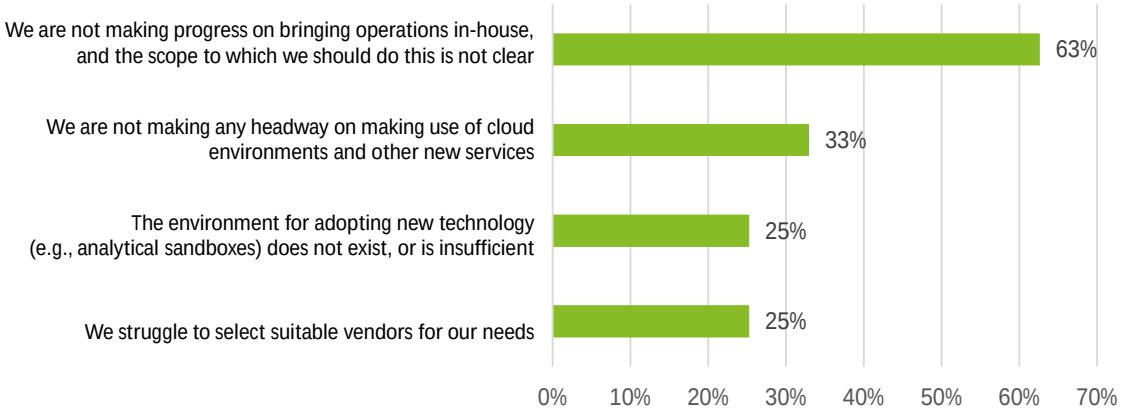
Distribution of respondents (n=91) Note: As respondents were allowed to select multiple answers, the total exceeds 100%

Data



Distribution of respondents (n=91) Note: As respondents were allowed to select multiple answers, the total exceeds 100%

Technology



Distribution of respondents (n=91) Note: As respondents were allowed to select multiple answers, the total exceeds 100%

Awareness of the risks in using AI and how the risks are being controlled

In the previous sections, we have focused on shedding light on how AI is being used as well as issues preventing further use of AI. As use of AI progresses further, risks such as those described below must be identified and controlled. In this section, we look at an overview of survey results in regards to what extent risks that may lie ahead have been recognized, and whether those risks are being managed or not.

Table 1 Risks in using AI

Type of risk	Risk details
Malicious intent	The risk of someone maliciously inputting information into the AI so that it makes errors in judgment that could lead to an incident or spark criticism from society
Data pollution	The risk of someone, either maliciously or not, having the AI learn on inappropriate data which then causes the AI to make errors in judgment that could lead to an incident or spark criticism from society
Data/model theft	The risk of intellectual property leaking from a publicly available AI, if an external party uses the AI to make a large number of decisions and analyzes the results to identify the data and decision models that constitutes the AI
Fairness	The risk of sparking criticism from society should the AI make unfair decisions toward specific groups based on factors such as gender and nationality
Safety	The risk of bodily harm or damage to property should the AI make faulty decisions
Precision deterioration	The risk that an AI's prediction accuracy will deteriorate over time
The ability to explain oneself	The risk of having to explain the rationale behind an AI's decision should a user request it
Contractual	The risk of potential problems arising regarding ownership of training data and models when AI development is outsourced
Invasion of privacy	The risk that an AI's advanced profiling of users will infer sensitive information about them, thus violating their privacy

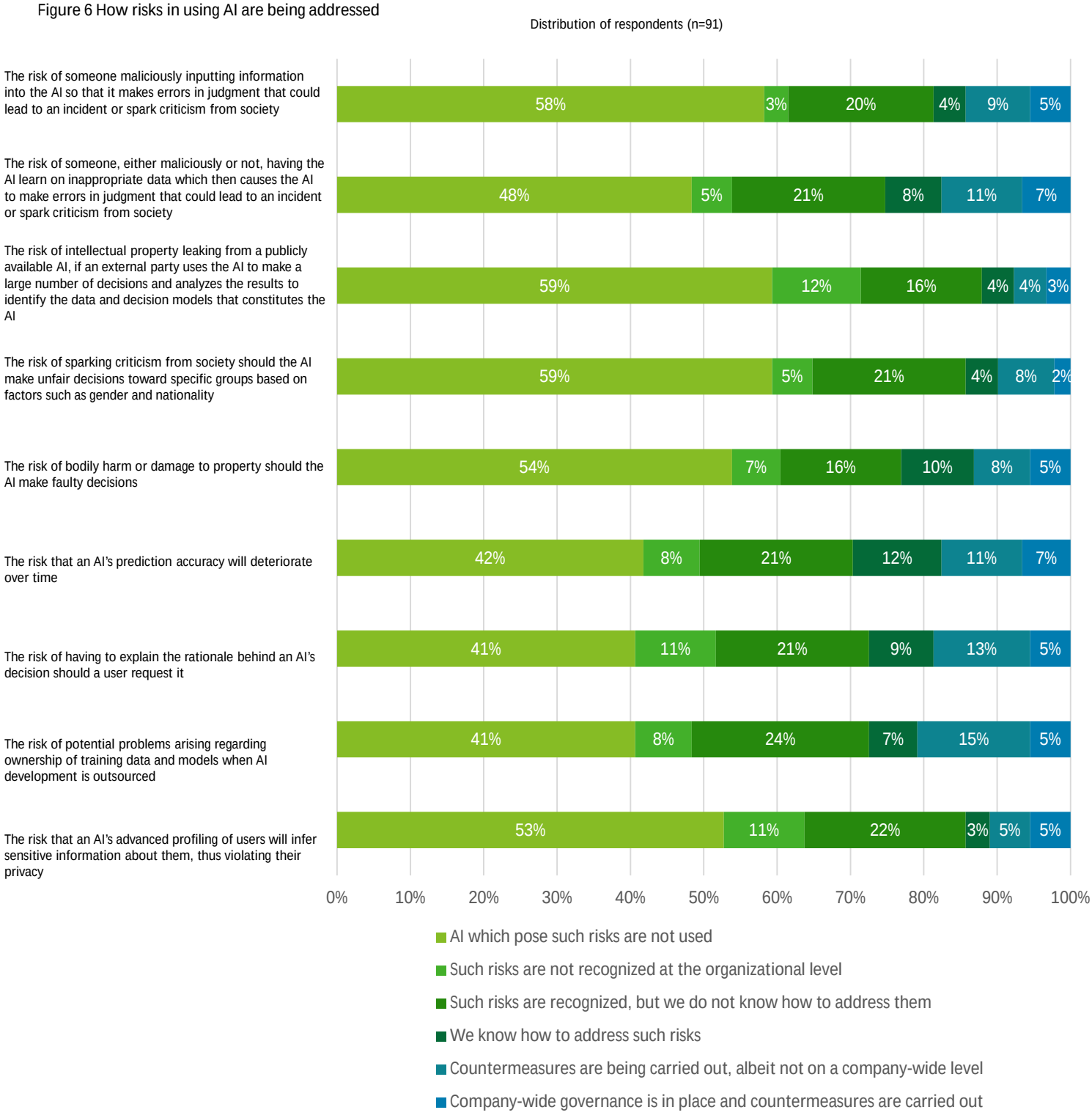
When respondents were asked about how they were currently addressing risks in using AI, around 20% reported that "Such risks are recognized, but we do not know how to address them" on all risk categories. Even if respondents were aware of the risks involved in using AI for commercial purposes, they tended to struggle with how to address them.

Although use of AI is indeed progressing as shown in previous sections, a considerable number of respondents answered that "AI which pose such risks are not used," suggesting that companies are adopting AI starting from those that pose the least risk, and thus the scope of AI use is limited.

When looking at individual types of risks, risks associated with deterioration of precision appears to be fairly under control, with the percentage of respondents who answered that they were making progress on addressing this type of risk greatly exceeding that of those who answered that they were not making progress (respondents who selected "Company-wide governance is in place and countermeasures are carried out", "Countermeasures are being carried out, albeit not on a company-wide level ", or "We know how to address such risks" were assumed to have been making progress on this topic, whereas those who selected "Such risks are recognized, but we do not know how to address them" were assumed otherwise). The increase in the percentage of those who have reached full-scale application in adopting AI could be understood as the factor that has lead to the increase in awareness of precision deterioration risks and thus, progress in addressing such risks.

However, when it comes to contractual risks, the percentage of respondents taking action compared to those who are not is around the same level, so it seems that companies differ in the degree to which they have this type of risk under control. As more companies start to reach the stage of full-scale application, they will need to strengthen countermeasures for contractual risks at an organizational level, and the importance of promoting governance, such as standardizing the contracting process, will increase.

Figure 6 How risks in using AI are being addressed



Deeper analysis by industry

In the sections thus far, we have covered overall survey results without taking industry into account. In this section, we will look at differences in how AI is being used by dividing the responses into the top 4 industries that received the most responses (manufacturing, trading, finance, life sciences/healthcare), and the 5th "Others" category that combines all other industries.

Comparing by question

In terms of the number of PoCs conducted, over 50 cases of PoCs were reported by companies in manufacturing and life sciences/healthcare, indicating that these two industries will be the ones driving use of AI. In comparison, trading companies tended to have relatively fewer cases of PoCs. Furthermore, the more cases of PoCs an industry had, the more likely it was to have reached full-scale application.

Regarding companies' policies regarding data sharing businesses, we asked whether they have considered starting a business that shares their data with other companies. From the responses, we can see that data sharing businesses are already turning a profit in trading, finance, and other industries, showing that data itself is taking on value as use of AI further spreads. On the other hand, manufacturing and life sciences/healthcare were not seeing a profit from their data sharing businesses, and a large percentage of respondents were not even considering to start such a business. However, in light of factors such as the increase of IoT devices and the sharing of medical information as stipulated by the Next Generation Medical Infrastructure Law, data sharing businesses are anticipated to expand in the future for both industries.

For returns on investment, results were significant for manufacturing and life sciences/healthcare, both of which are industries with better large-scale investment opportunities.

Manufacturing

We could say that use of AI is booming in this industry. The reason for this is that production sites possess a keen level of awareness toward increasing efficiency, and that the industry provides better opportunities for making large-scale investments. Furthermore, it could be said that the industry was already predisposed toward AI adoption, due in part to the fact that companies own a great volume of data and employ engineers. The survey showed that both the number of cases of PoCs and full-scale application are high and that heavy investment is being made into AI, which is producing considerable success.

This industry is also a hotbed for stories on how AI was adopted, such as predicting breakdowns using data from factory equipment and achieving autonomous driving. Manufacturing will likely continue to be one of the industries leading the use of AI.

Trading

Trading is considered to be an industry where AI adoption has made relatively little headway. According to survey results, cases of PoCs and full-scale applications are rare, with AI making less impact in comparison to other industries. However, trading companies are already turning a profit on their data sharing businesses, and have begun making large-scale investments. Unlike other industries, this industry has the potential to create business models centered around sharing data rather than the actual use of AI.

Finance

This industry is making steady progress on AI adoption. The number of PoCs conducted and planned investment amounts exceed those of the "Others" category, and it is the only industry that achieved solid results (no respondents selected "None"). Although few cases progressed to full-scale application, perhaps as a result of finance being an industry that makes steady investments, the percentage of respondents considering data sharing business ideas was the highest among the four industries, and one company have even started to generate profit from such business. Further development is expected to be made in this industry.

Finance also ranked first of industries using AI for the purpose of creating new businesses. We could say that awareness of this need has considerably grown as a result of the development of Fintech (e.g., blockchains) and companies from other industries entering the market.

Life sciences/healthcare

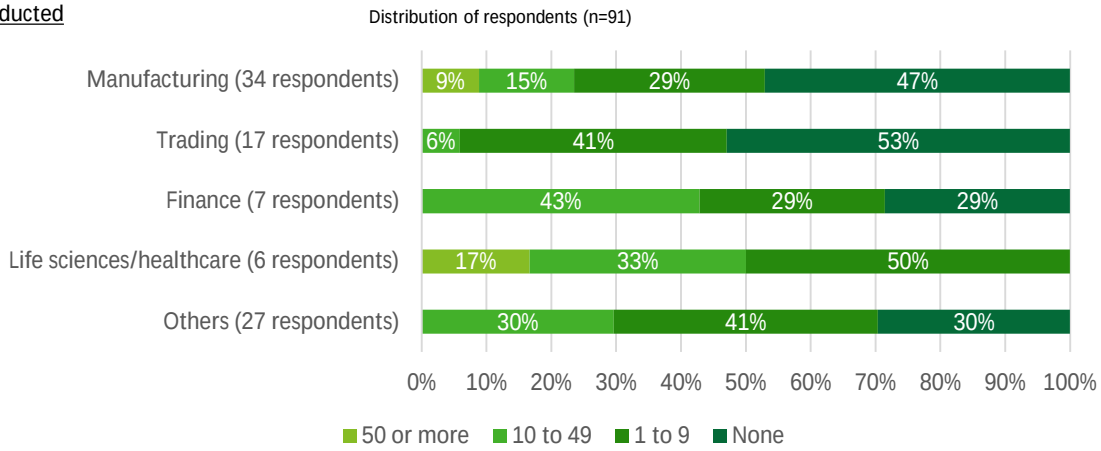
We could say that use of AI is booming in this industry. As large investments were already a character of the industry due to activities such as drug discovery, investments in AI is also expected to be active and use of AI is anticipated to generate significant results. Both the number of cases of PoCs and full-scale application tended to be higher than other industries. The percentage of respondents who answered as having been making massive investments of 10 billion yen or more was high, and some companies even reported increased sales and reduced costs of 10 billion yen or more. Use of AI in this industry is expected to continue to grow.

In terms of the purpose for using AI, streamlining of current operations (work style reform, operational efficiency) ranked high. We could say that, as society further ages and workforce shortages become an issue, the industry is promoting efficiency through the use of AI by, for example, using nursing care robots, providing doctors with imaging analysis and diagnostic support, and using technologies such as deep learning in drug development.

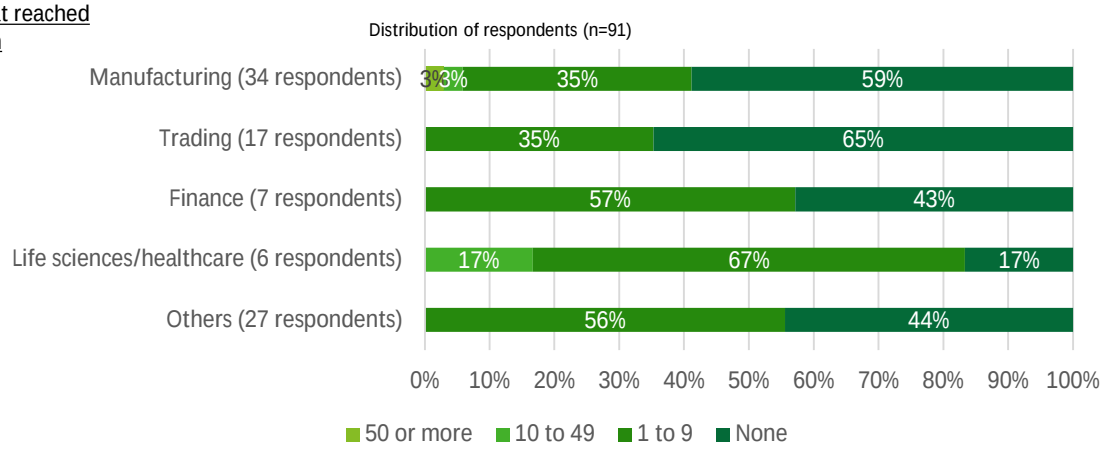
In this section, we have seen how the manufacturing, life sciences/healthcare, and finance industries appear to be thriving in regards to using and investing in AI. Although certain factors may be hindering adoption of AI for some fields, such as the high barrier of entry that must be overcome to invest in new fields, the fact remains that use of AI is advancing forward as a whole. In order to differentiate oneself from other companies in such a landscape, it is crucial that each company designs PoCs and full-scale applications that leverage their own unique characteristics based on their strategy and corporate culture.

Figure 7 Number of cases testing AI application and companies' policies regarding data sharing businesses

Number of PoCs conducted



Number of cases that reached full-scale application



Companies' policies regarding data sharing businesses

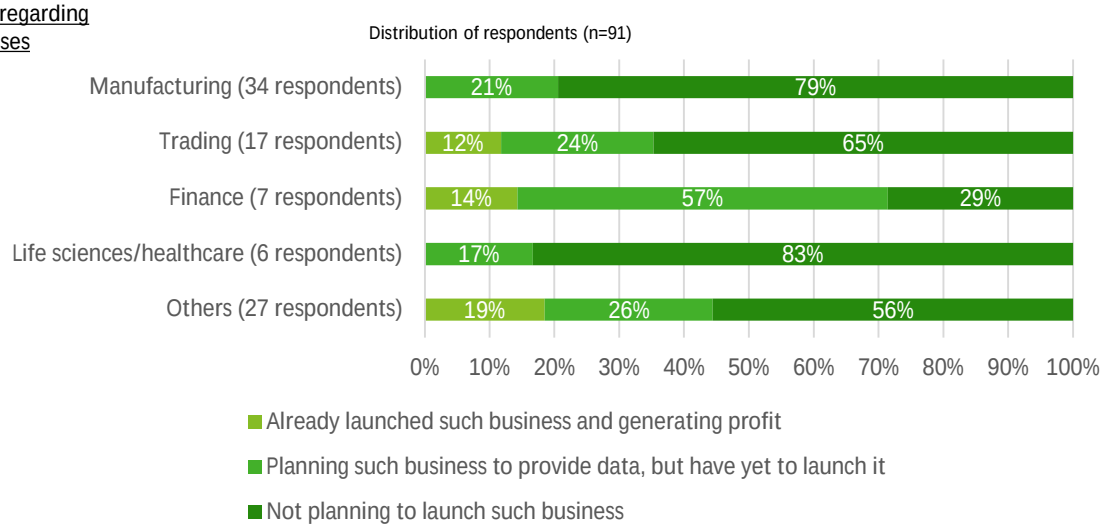
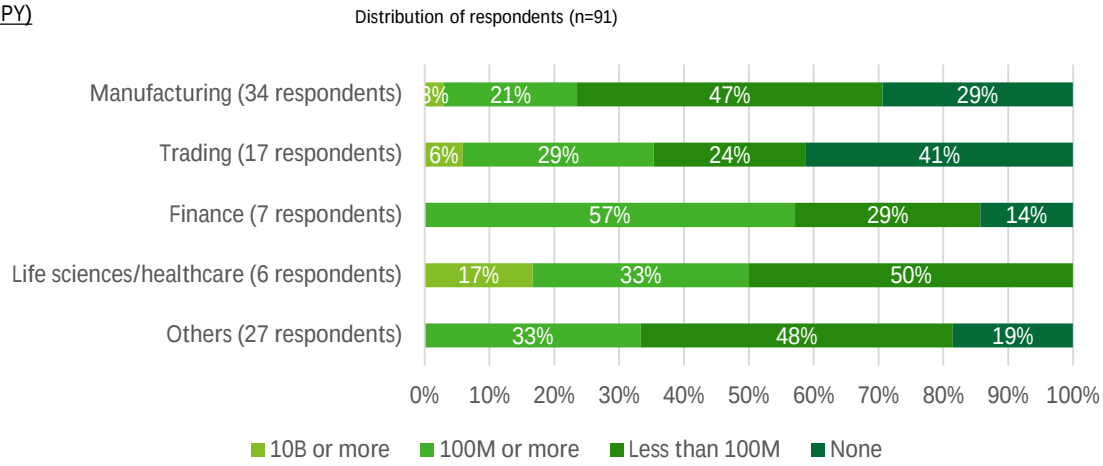
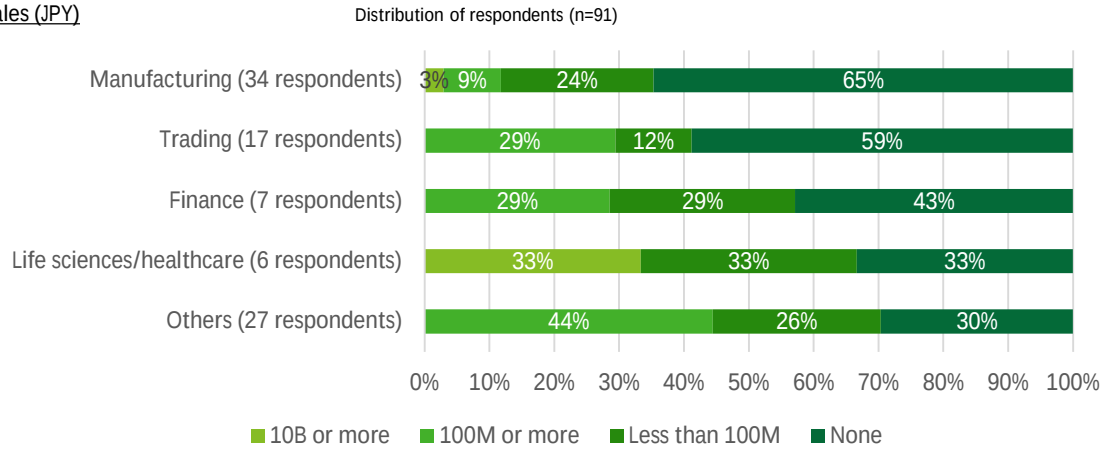


Figure 8 Investment and its effect by industry

Planned investment (JPY)



Effect on improving sales (JPY)



Effect on reducing cost (JPY)

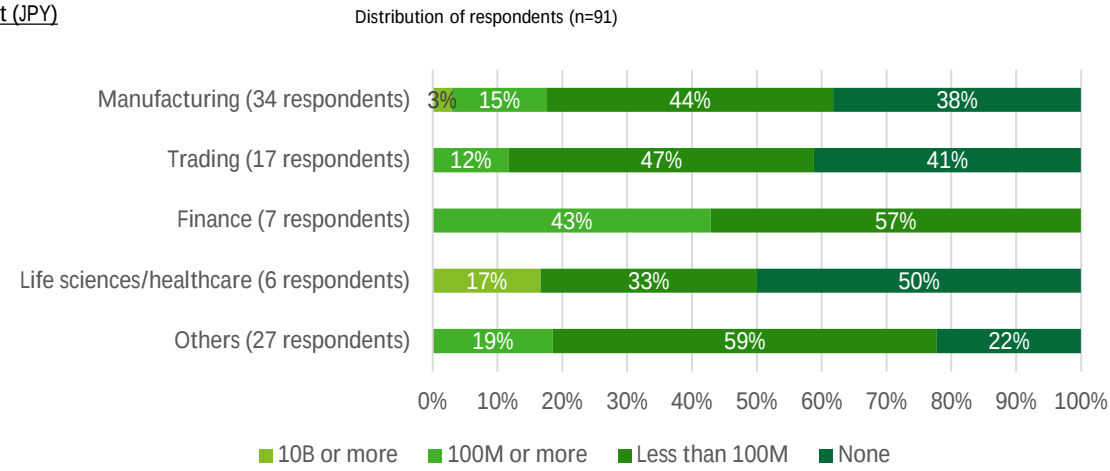
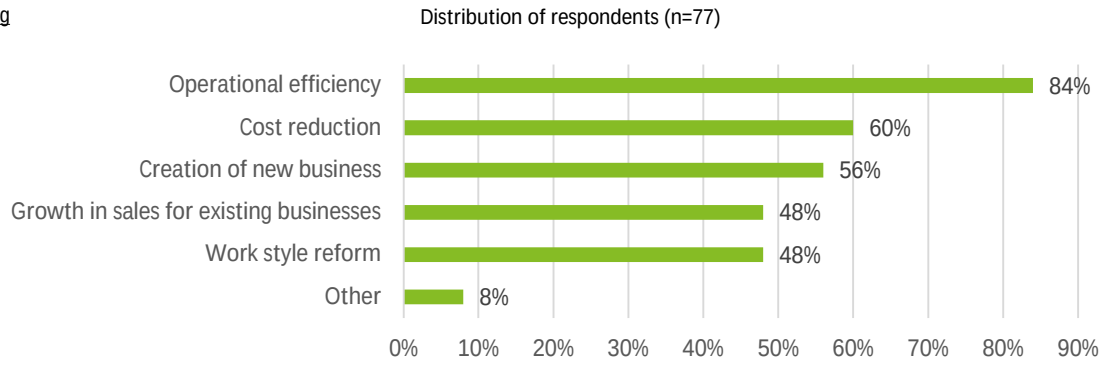
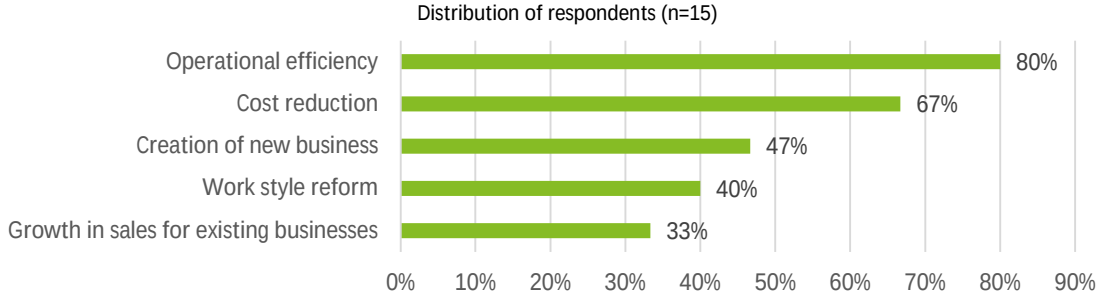


Figure 9 AI utilization purpose by industry

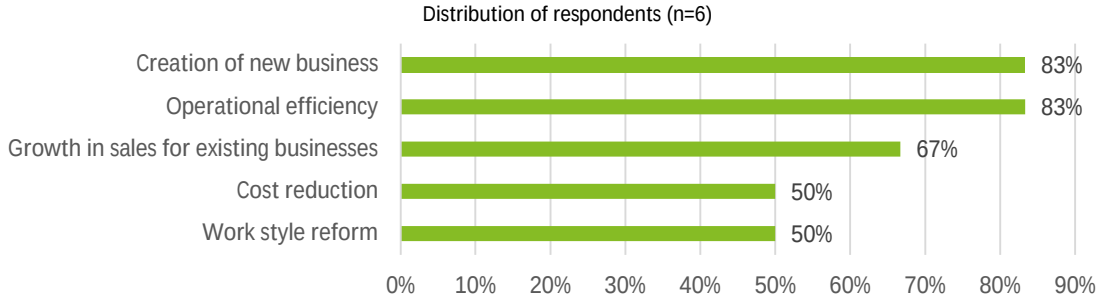
Manufacturing



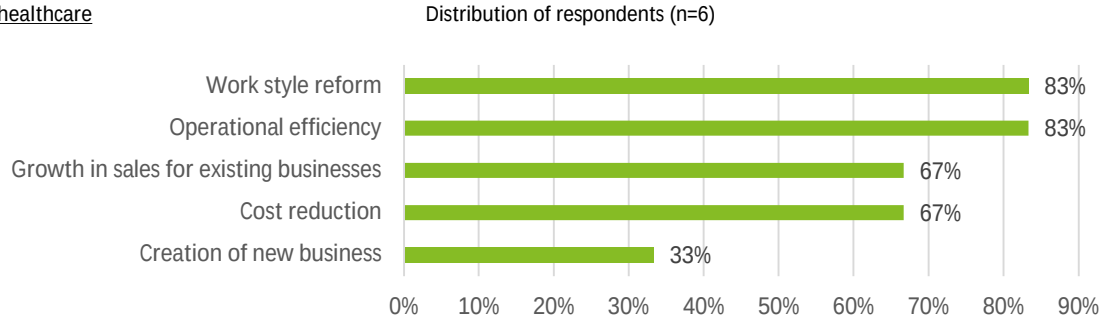
Trading



Finance



Life sciences/healthcare



Closing

The world is changing dramatically as a result of COVID-19. Economic activities have also been greatly affected due to work style reforms (e.g., teleworking) and other such disrupting factors. In this shifting landscape, companies will also be required to transform themselves, and adoption of AI is poised to play a crucial role in this transformation.

Perhaps in response to such global transformation, use of AI has significantly changed over the past year. In last year's survey, the "early majority" as referred to in the theory of diffusion of innovations had just started using AI, but in this year's survey, the "late majority" had also started using AI, indicating that AI adoption has progressed leaps and bounds. Nearly half of all respondents have progressed to full-scale application, suggesting that now is the time to move beyond PoC trial operations and into serious adoption of AI in anticipation of full-scale application.

Data sharing businesses are also expanding, and some companies are already generating profit from them. Going forward, data sharing businesses are expected to expand further, as sharing of data that had not been easily shared thus far will be pushed forward with the Next Generation Medical Infrastructure Law driving sharing of medical information in the life sciences/healthcare sector and information being shared through information banks in the financial sector.

We have also confirmed that more investments into AI are being made for the purpose of new business creation, which is a sign that companies are seeking to change. With regard to investment scale, the larger the investment, the greater the effect. On the whole, companies were making appropriate investments. Cost reduction tended to be easier to achieve, but survey results also showed that companies are also starting to succeed in increasing sales.

On the one hand, AI utilization is making considerable progress, but on the other hand, this has highlighted organizational issues, such as organizations not having a culture of seeking continuous innovation. Another issue raised is companies feel that organizational issues are hindering standardization, streamlining, and establishment of governance. This has lead to an increase in the need for bringing operations in-house.

Companies are also facing issues in terms of risks in using AI. As was the case last year, companies tended to struggle with figuring out how to address risks when using AI in their businesses, even if they were aware of said risks. Survey results also suggested that companies are starting with low-risk AI, which may be limiting the scope in which AI is being used. As for individual types of risks, we found that companies are making progress in addressing risks associated with deterioration of precision as full-scale AI application moves forward.

Adoption of AI has made serious headway, and investment into AI is expected to only grow in the future. In this changing landscape, what should companies be aware of in order to make suitable returns on their investments? In light of survey results, we believe that far-reaching investment and governance are crucial.

As a result of COVID-19, among other disrupting factors, companies are expected to transform, thus requiring investments to be made into creating new businesses as well as research & development. We expect investments to grow in scale in the future, and companies that are only investing in cost reduction—something which is relatively easy to achieve—should also consider investing to increase sales in order to expand the scope of their use of AI. In addition, due to the rapid development of AI technology, companies will be required to conduct many PoCs, and they will be expected to be swift about it. Given the fact that it is not realistic to make large-scale investments and achieve success in a short period of time, we are of the mind that building up successful experience by conducting PoCs in a variety of areas and for a variety of purposes before increasing the scale of investment into AI will increase the company's value as a user of AI.

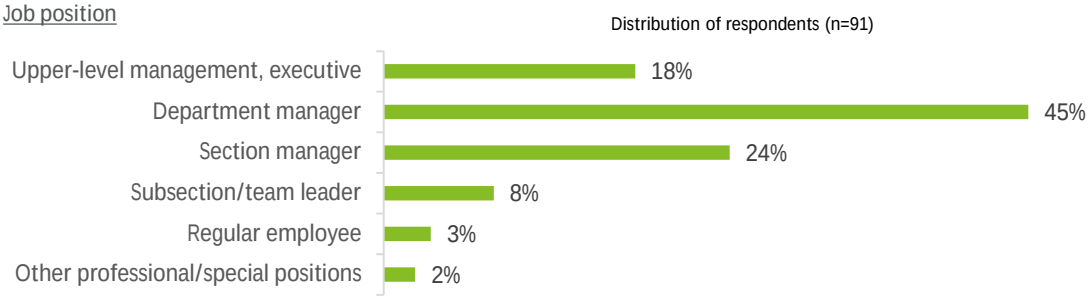
The larger the investment, the more the effort will need to be made at an organizational level. When this happens, it will be crucial to standardize the procedures for conducting a PoC and strengthen governance for addressing risks in order to increase the likelihood of the investment's success. Preventing problems before they arise instead of addressing them after they appear will lead to greater efficiency and speed, and will make it possible for companies to stay ahead of their competition.

In a world that demands transformation from companies, AI is essential in differentiating oneself from other companies. Companies will need to employ AI to generate innovation. Those that are able to make full use of what AI has to offer to establish their new positions in both the world under and after COVID-19 will maintain their market superiority and continue to grow into the future.

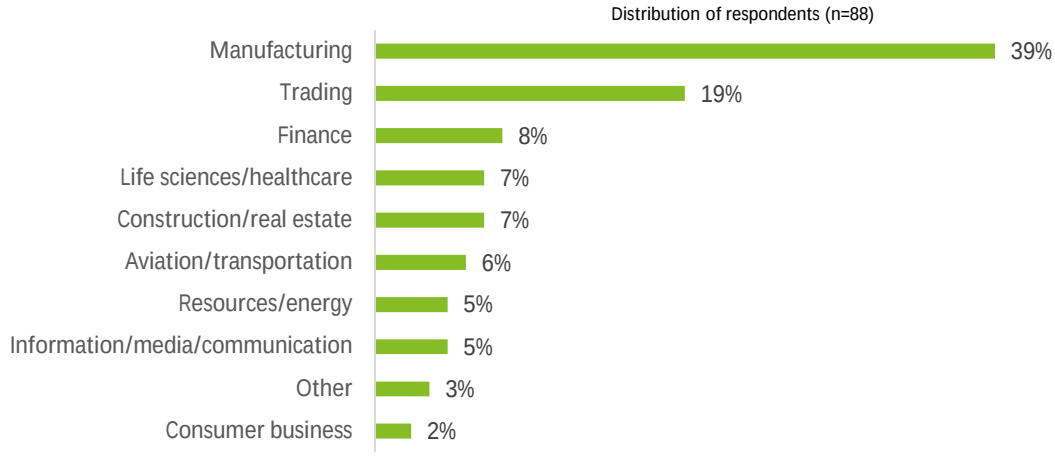
Appendix

■ Respondent demographics

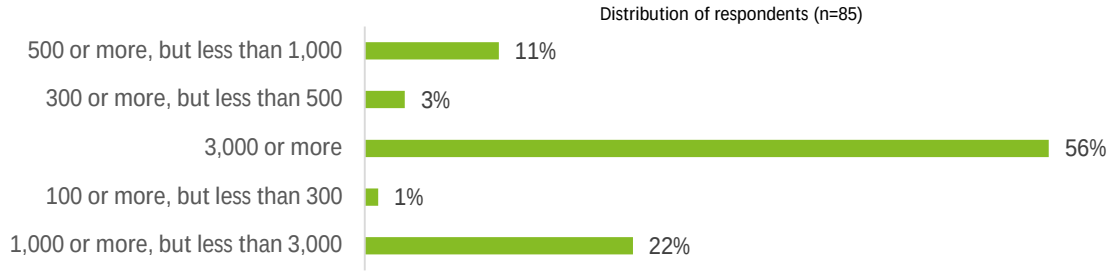
Job position



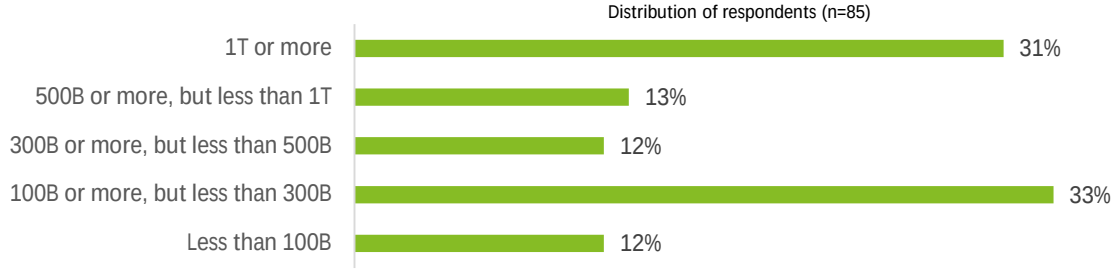
Industry



Number of employees at their company



Annual sales bracket (JPY)



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