

Penetration of Digital Technologies

Section 1 Status of use by the citizens and corporations

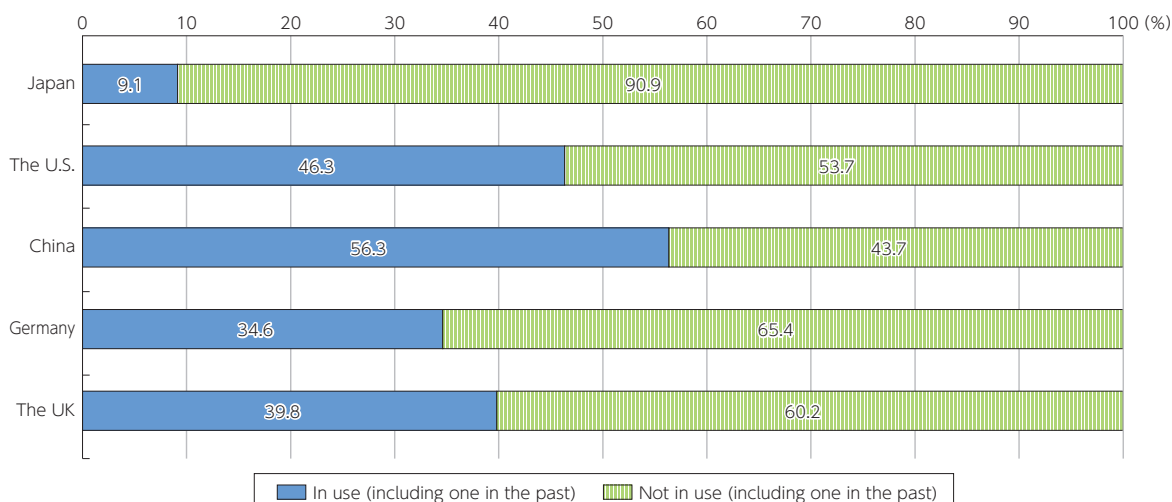
1. Generative AI

(1) Questionnaire to the general public

The penetration of generative AI services into the daily lives of citizens has been a topic of discussion both domestically and internationally. The MIC conducted a survey on the usage of “Digital Technology,” including generative AI, among citizens of Japan, the U.S., China, Germany, and the UK.

According to the survey, the percentage of respondents in Japan who reported “Using” generative AI (including those who have used it in the past) was 9.1%, which was lower compared to other countries (**Figure 1-5-1-1**).

Figure 1-5-1-1 Experiences to use generative AI

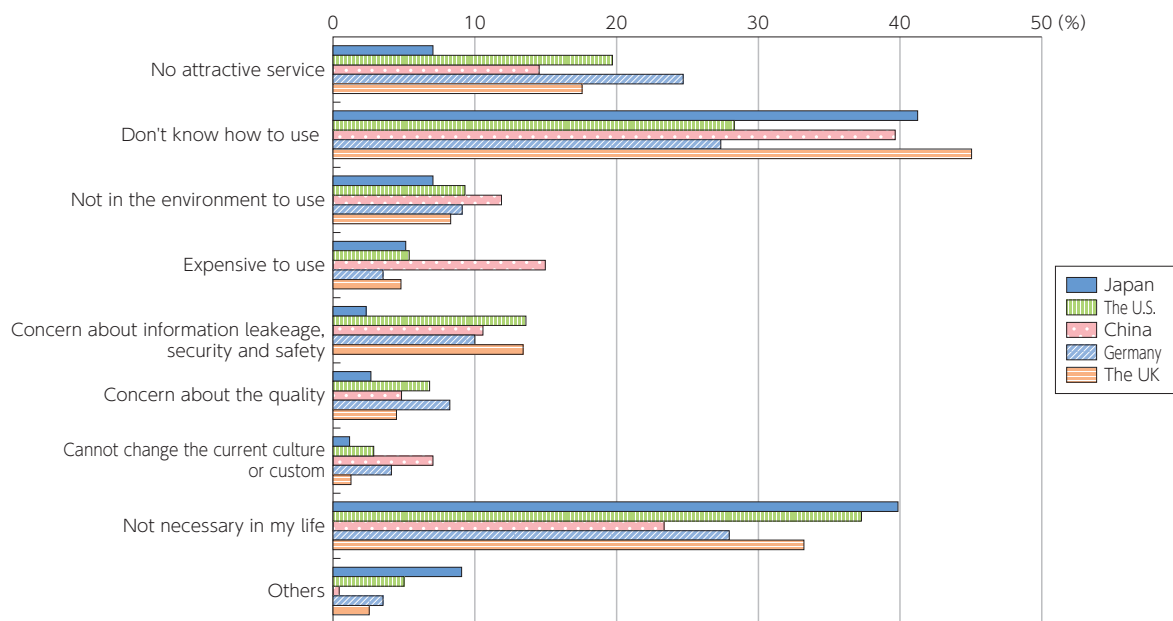


(Source) MIC(2024) “Research and study on the advancement of digital technologies and their utilization”

The reasons for not using generative AI were similar across the surveyed countries, with many citing “not knowing how to use it” and “not needing it in their daily

lives.” Concerns about “information leakage, safety, and security” were less frequently cited (**Figure 1-5-1-2**).

Figure 1-5-1-2 Reasons not to use generative AI

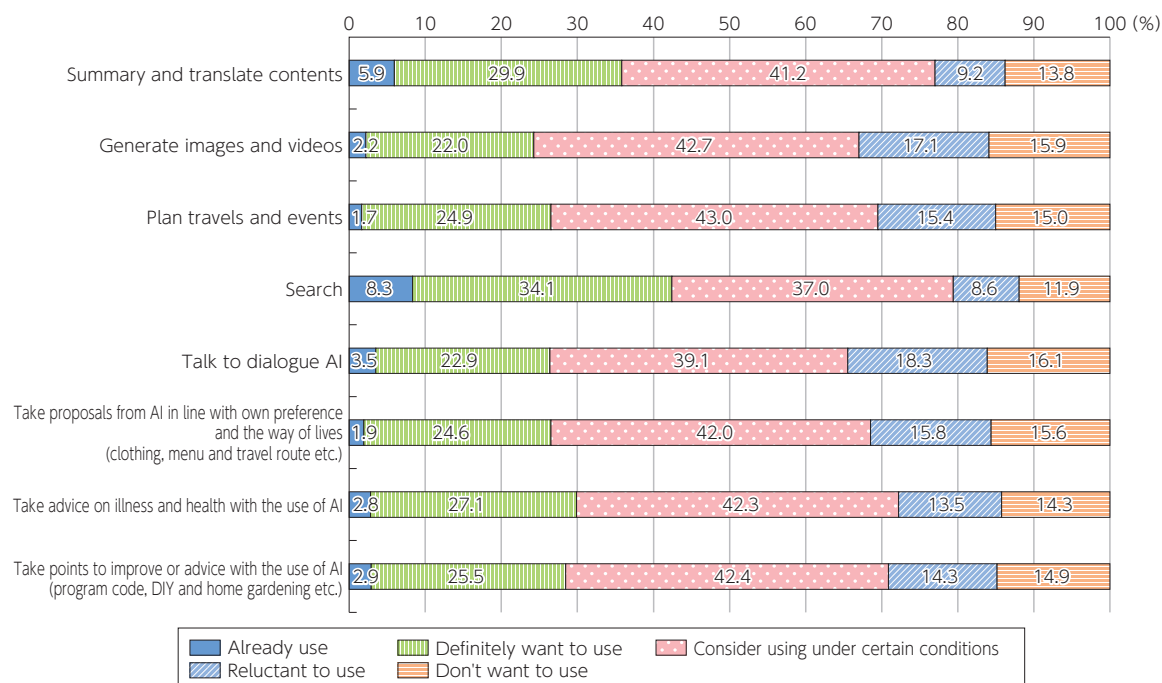


(Source) MIC(2024) "Research and study on the advancement of digital technologies and their utilization"

On the other hand, when asked about their willingness to utilize generative AI in their future lives and leisure activities, the percentage of respondents in Japan who indicated "already using it" was low. However, around 60-70% expressed an interest in using generative

AI in the future, with some stating that they would "definitely like to use it" or "consider using it depending on the conditions," indicating potential demand for such services (Figure 1-5-1-3).

Figure 1-5-1-3 Willingness to use generative AI



(Source) MIC(2024) "Research and study on the advancement of digital technologies and their utilization"



Figure (related data) Willingness to use generative AI (by topic)

URL: <https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/r06/html/datashu.html#f00060>

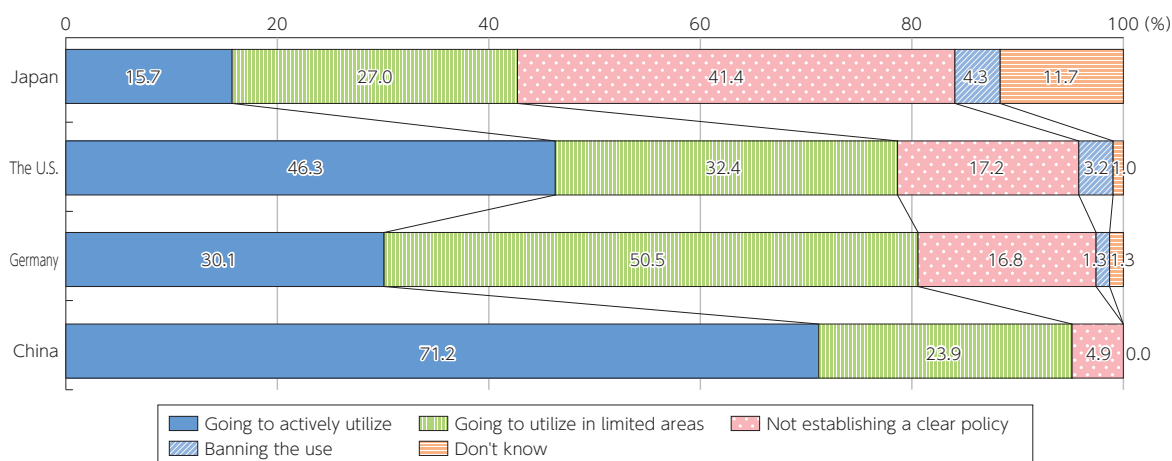
(Data collection)

(2) Questionnaire to corporates

Subsequently, a survey was conducted targeting businesses in each country to inquire about the utilization of generative AI in their operations. When asked whether they had established a policy for utilizing generative AI, 42.7% of Japanese companies responded that they had

“established a policy for utilizing it” (combining those who actively utilize it and those who use it in limited areas), which was approximately half the percentage compared to the U.S., Germany, and China, where over 80% had established such a policy (**Figure 1-5-1-4**).

Figure 1-5-1-4 Status to establish a policy for utilizing generative AI

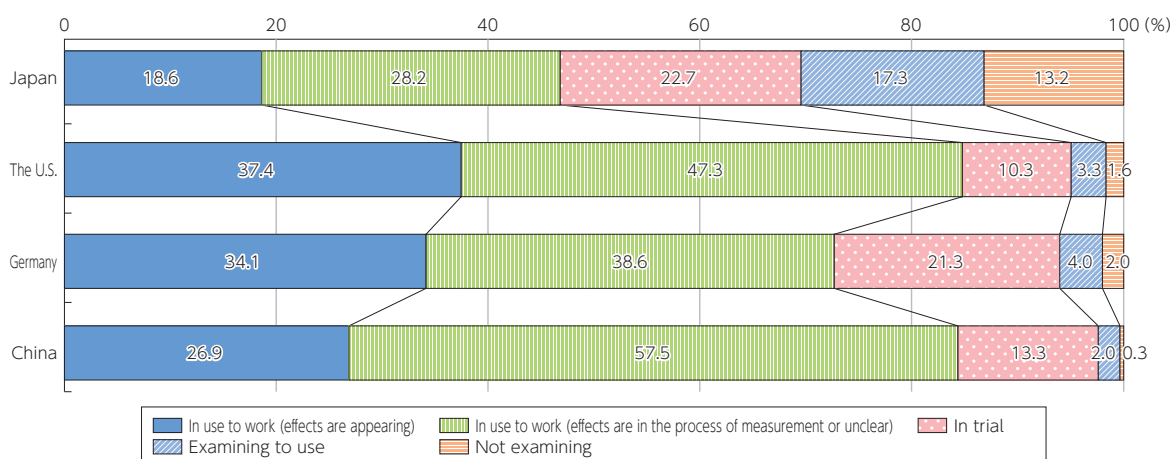


(Source) MIC(2024) “Research and study on the latest trends in information and communication technology research and development, as well as digital utilization, both domestically and internationally”

When asked about the utilization of generative AI in specific business operations, such as “assistance in email, meeting minutes, and document creation,” 46.8% of Japanese companies reported using generative AI in their operations. However, when including those in the trial phase, around 90% of companies in the U.S., Ger-

many, and China were using it, indicating that overseas, active utilization has begun in various areas, including customer support, while Japanese companies are proceeding with cautious adoption, particularly for internal operations (**Figure 1-5-1-5**).

Figure 1-5-1-5 Status to utilize generative AI in business operations (support for creation of mail, minutes and material)



(Source) MIC(2024) “Research and study on the latest trends in information and communication technology research and development, as well as digital utilization, both domestically and internationally”

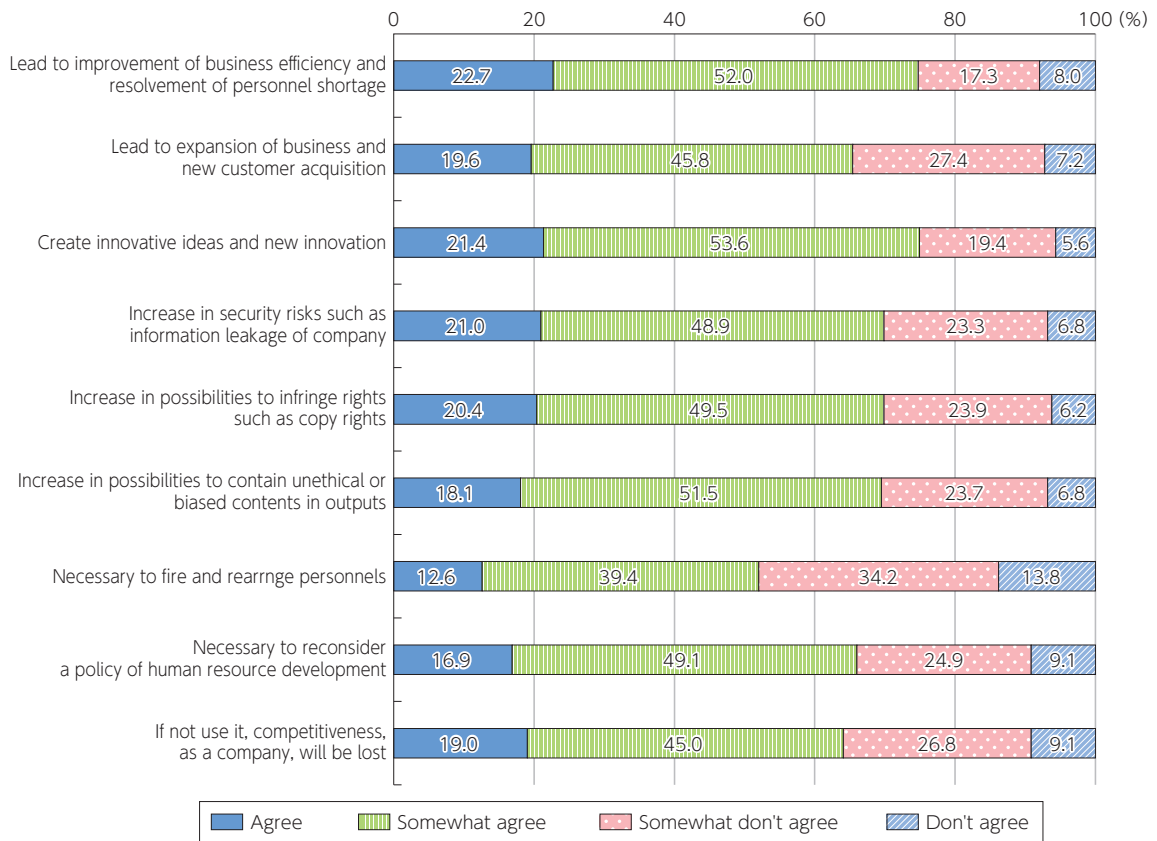


Figure (related data) Status to utilize generative AI in business operations (other business operation)

URL: <https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/r06/html/datashu.html#f00063>
(Data collection)

Regarding the effects and impacts of utilizing generative AI, approximately 75% of companies believed that it would lead to “improving business efficiency and addressing labor shortages.” However, around 70% of companies also expressed concerns about the risks associ-

ated with generative AI, such as “an increase in security risks, such as internal information leakage” and “the potential for copyright and other rights infringement” (**Figure 1-5-1-6**).

Figure 1-5-1-6 Effects and influences by utilization of generative AI (Japan)

(Source) MIC(2024) "Research and study on the latest trends in information and communication technology research and development, as well as digital utilization, both domestically and internationally"

**Figure (related data) Effects and influences by utilization of generative AI (by topic)**

URL: <https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/r06/html/datashu.html#f00065>
(Data collection)

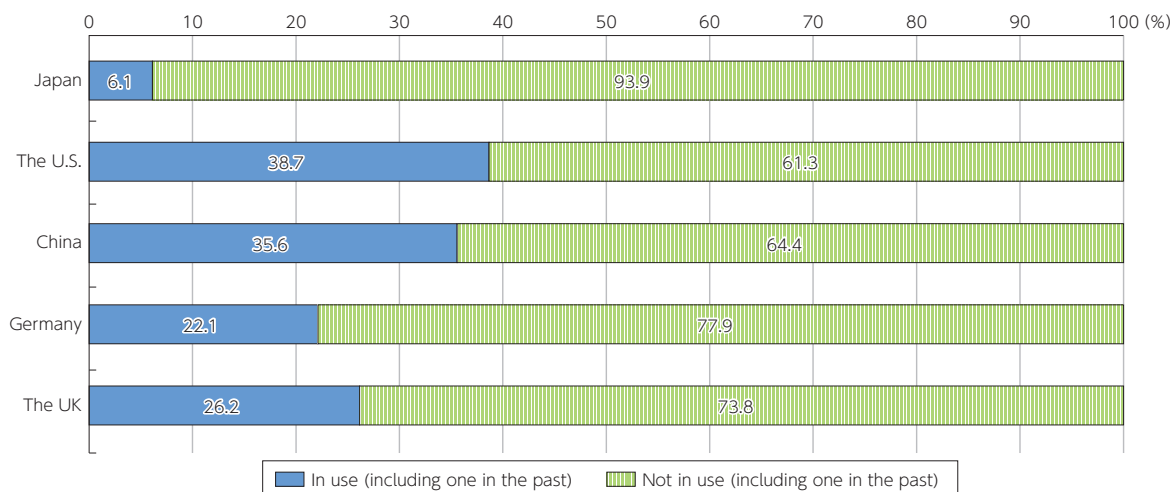
2. Metaverse

(1) Questionnaire to the general public

When asked about their experience with using the metaverse, the percentage of respondents who an-

swered “using it” (including those who have used it in the past) was low in Japan at 6.1% (**Figure 1-5-1-7**).

Figure 1-5-1-7 Experiences to use the metaverse

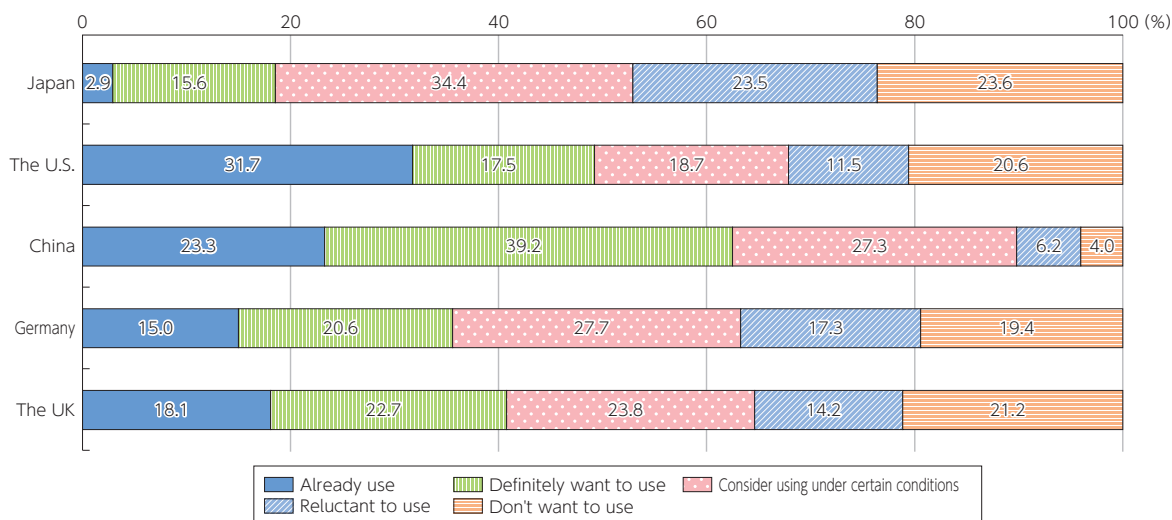


(Source) MIC(2024) “Research and study on the advancement of digital technologies and their utilization”

When asked about the usage status and intentions for specific scenarios, the percentage of respondents who answered “already using” for “communication between users in virtual space” was 2.9% in Japan, which was lower compared to other countries where the percent-

age was around 15-30%. However, when combined with positive responses for future use (“definitely want to use” and “consider using depending on the conditions”), the potential demand was 52.9%, indicating potential interest in usage (**Figure 1-5-1-8**).

Figure 1-5-1-8 Willingness to use the metaverse (communication among users)



(Source) MIC(2024) “Research and study on the latest trends in information and communication technology research and development, as well as digital utilization, both domestically and internationally”



Figure (related data) Willingness to use the metaverse (other scene to use)

URL: <https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/r06/html/datashu.html#f00068>
(Data collection)

(2) Questionnaire to corporates

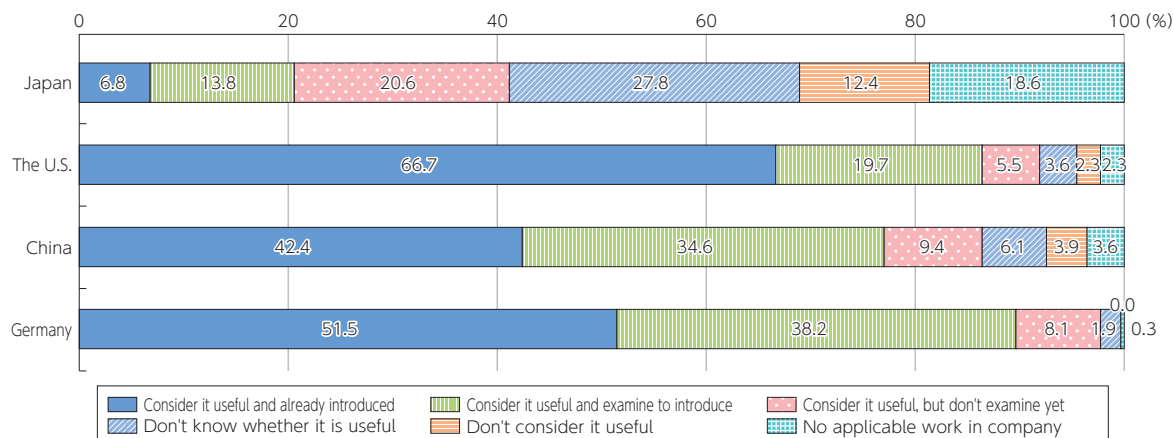
When asked about the consideration status of introducing the metaverse and digital twins in business operations such as “product development,” “manufactur-

ing,” and “logistics” among companies in various countries, the percentage of respondents in Japan who answered “consider it useful and already introduced”

was less than 10% for all operations. This is low compared to approximately 45-60% in the U.S. who answered

that they have already introduced it (Figure 1-5-1-9).

Figure 1-5-1-9 Consideration status of introducing the virtual space in business operation (merchandise development)



(Source) MIC(2024) "Research and study on the latest trends in information and communication technology research and development, as well as digital utilization, both domestically and internationally"



Figure (related data) Consideration status of introducing the virtual space in business operation (other business operation)

URL: <https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/r06/html/datashu.html#f00070>
(Data collection)

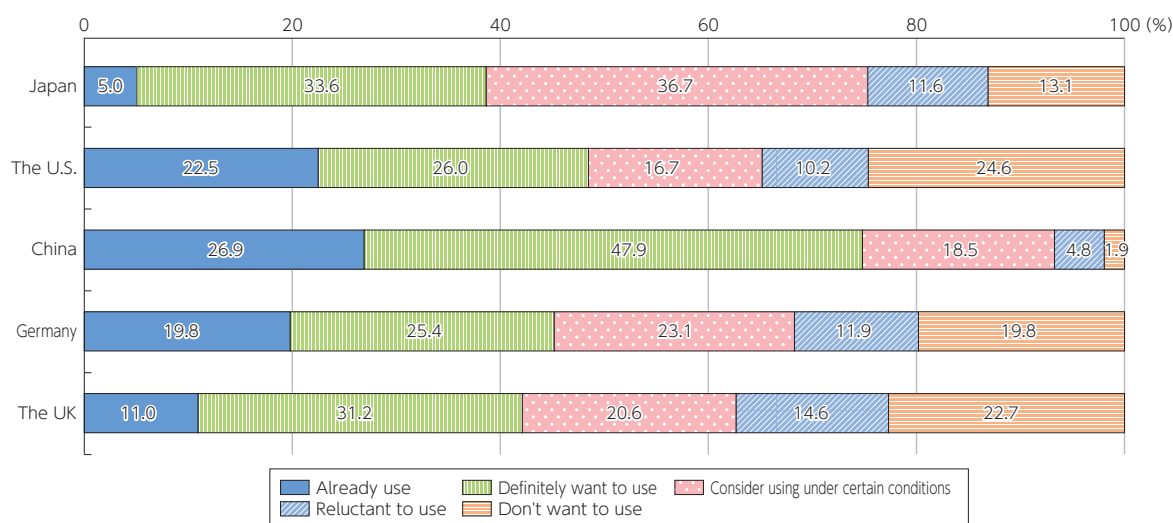
3. Robotics

To investigate the public perception of robot use in daily life and entertainment, respondents were asked about their willingness to use robots in six different scenarios. Regarding "robots performing household chores (cleaning, laundry, cooking, etc.)," 75.3% of Japanese respondents gave positive responses (already using,

definitely want to use, consider using under certain conditions). This percentage is similar to that in the U.S., Germany, and the UK (Figure 1-5-1-10).

Additionally, in the U.S., Germany, and the UK, about 30% of respondents indicated that they "do not want to use" robots in any of the six scenarios.

Figure 1-5-1-10 Willingness to use robots by scene in lives and entertainments (performing household chores (such as cleaning, laundry, cooking etc.))



(Source) MIC(2024) "Research and study on the advancement of digital technologies and their utilization"



Figure (related data) Willingness to use robots by scene in lives and entertainments (other scene to use)

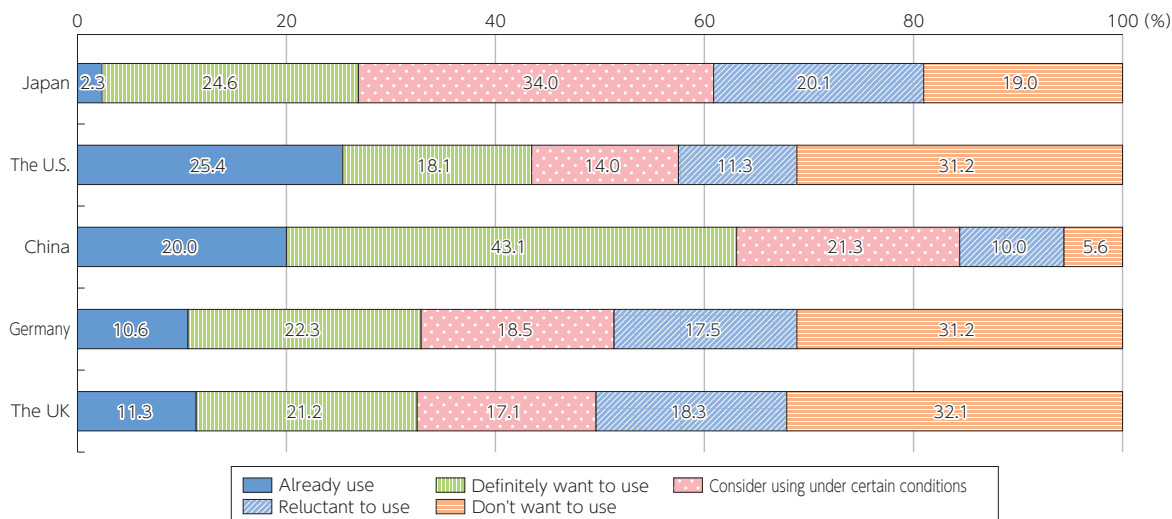
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(Data collection)

4. Automated driving

When asked about their willingness to use fully autonomous vehicles (driverless operation), about 60% of Japanese respondents indicated a willingness to use them (definitely want to use, consider using under certain conditions) in any of the five scenarios presented.

On the other hand, about 20% of Japanese respondents said they “do not want to use” them, compared to about 30% in the U.S., Germany, and the UK, indicating a more hesitant attitude towards use in these countries (**Figure 1-5-1-11**).

**Figure 1-5-1-11 Willingness to use fully autonomous vehicles
(commuting, daily shopping and transferring family members by fully autonomous home vehicles)**



(Source) MIC(2024) "Research and study on the advancement of digital technologies and their utilization"



Figure (related data) Willingness to use fully autonomous vehicles (other scene to use)
 URL: <https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/r06/html/datashu.html#f00074>
 (Data collection)