Artificial Intelligence Policies Association (AIPA) Research of the Future

Artificial Intelligence Perception in Establishments - 2

Reference to the report:
Zafer Küçükşabanoğlu, Volkan Kılıç
Artificial Intelligence Policies Association (AIPA), Kuantum Araştırma
AIPA Research of the Future: Research Report on Artificial Intelligence Perception in Establishments

November 2022

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Artificial intelligence is influencing, shaping and changing every field more and more every day. The reflection of this situation on the economy will be much more than expected. In many analyzes, it is predicted that by 2030, artificial intelligence will create an economic volume of 15.7 trillion dollars in the world, and the Metaverse, where artificial intelligence will act as a catalyst, will create an economic volume of approximately 13 trillion dollars. Considering that the entire world will reach an economy of more than 100 trillion dollars in 2030, artificial intelligence will constitute a quarter of the world economy. We know that Türkiye aims to be among the top 10 strongest economies in the world. As AIPA, one of our biggest goals is to accelerate this with technology entrepreneurship and therefore to create, support and spread a new entrepreneurship culture in our country. We can only achieve these goals by keeping up with digitalization of establishments, which are the backbone of Turkey's economy. In this regard, our government, non-governmental organizations, business and academic world should all work together so that Turkey is one step ahead of everyone else.

Economic growth and competitiveness is the main agenda of every country. In this regard, artificial intelligence has created a devastating innovative transformation also with the effect of the pandemic. Transformation is inevitable. Therefore, I would like to express our thanks to the Founder of Kuantum Araştırma and AIPA Vice Chairman Volkan Kılıç and his team, our AIPA Vice Chairman Gökhan Varan, our AIPA Board Members Assoc. Prof. Dr. Şebnem Özdemir and Atıf Selman Yücebıyık, and our Executive Assistant Merve Yıldırım for enabling the conduct of such a critical and comprehensive research.

Regardless of sector and scale; every company, structure and economy that can integrate and transform artificial intelligence will exist, while others will disappear. Therefore, we should take actions in order to plan the future. It should not be forgotten that artificial intelligence is the most strategic and fundamental element in these actions, and that it is the driving force of economic development today.

Kind Regards.

Zafer Küçükşabanoğlu
Artificial Intelligence Policies Association (AIPA) Founder and Chairman

Zafer Küçükşabanoğlu - Artificial Intelligence Policies Association (AIPA) Founder and Chairman

Volkan Kılıç - Artificial Intelligence Policies Association (AIPA) Vice Chairman / Founder of Kuantum Araştırma

Gökhan Varan - Artificial Intelligence Policies Association (AIPA) Vice Chairman

Assoc. Prof. Dr. Şebnem Özdemir - Artificial Intelligence Policies Association (AIPA) Board Member

Atıf Selman Yücebıyık - Artificial Intelligence Policies Association (AIPA) Board Member

Merve Yıldırım - Artificial Intelligence Policies Association (AIPA) Executive Assistant

Murat Ünsal - Kuantum Araştırma Marketing Director

Methodology

Artificial Intelligence Perception in Establishments

Methodology Summary

Objective

To reveal and analyze the opinions and perceptions of the establishments using information technologies and artificial intelligence.

Method

Quantitative Research

Hybrid (CAWI and CATI) method was applied.

CAWI (Computer Assisted Web Survey)

CATI (Computer Assisted Telephone Survey)

Sample

847 establishments located in 12 provinces were interviewed at the 95% confidence level with a margin of error of ±3.5.

Calendar

Fieldwork

October 21 – November 11, 2022

Data Control

November 16 - 18, 2021

Analysis and Reporting

November 21 - 25, 2021

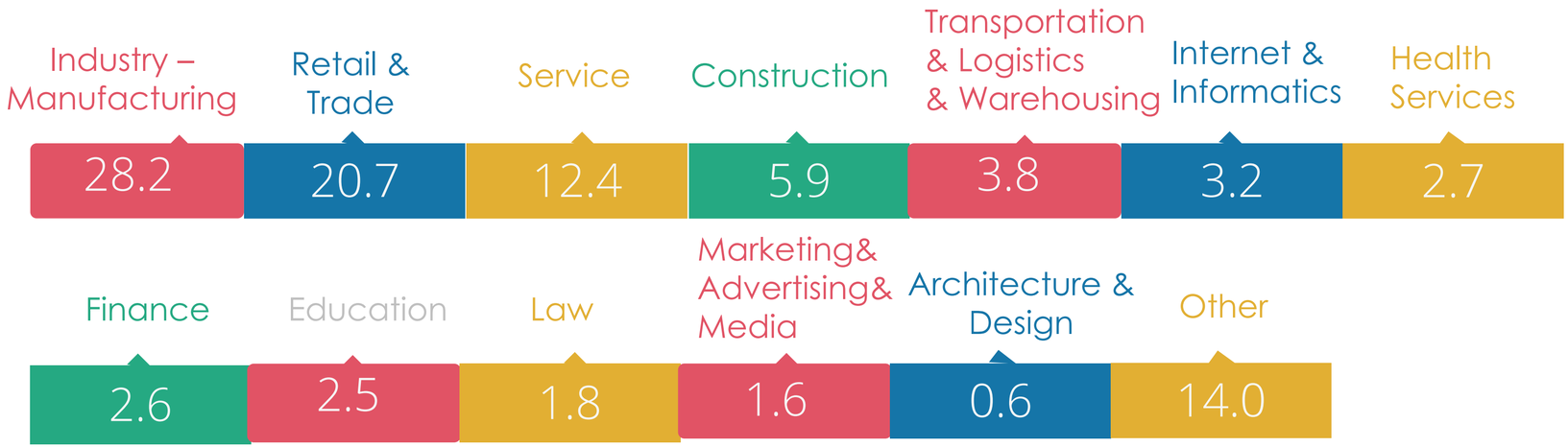
Artificial Intelligence Perception in Establishments

Sample

Enterprise Size -

Province -

Sector - %



Executive Summary

The rate of establishments integrating artificial intelligence technologies into their business processes has increased significantly compared to 2021, albeit at a small rate.

15.2% of establishments in Turkey are currently using artificial intelligence technology. It is observed that this increase is due to industry/production, retail/ trade and service sectors and takes its source from customer tracking and management algorithms.
When we analyze it on the basis of regions, Marmara region differs significantly from other regions with 52.4% and Central Anatolia region with 24.9%, which is similar to 2021. The provinces that have the greatest impact on this differentiation are Istanbul and Ankara.
The rate of establishments considering using artificial intelligence technologies in the future has increased to 56.4%. When we analyze it in terms of enterprise size, this rate increases to 75.5% in establishments with 100+ employees that have completed their corporate management, which is similar to 2021. In smaller enterprises, it is at a rate of 50.0%.

The idea of increasing the usage area by using artificial intelligence technologies in different areas in the future is again similar to 2021 on the basis of enterprise size. It is observed that the usage area will be increased by 92.3% in establishments with 10-49 employees and by 73.5% in establishments with 100+ employees.

The advantage of using artificial intelligence technologies in establishments has changed compared to 2021. In 2021, the biggest advantage in using artificial intelligence technologies was «Acceleration», whilst it is «Savings on cost and time» in 2022.
Artificial intelligence is at the forefront of the technologies that are believed to affect the establishments in the future with an increase of 1.5% and a rate of 46.4%, which is similar to 2021. Artificial intelligence is followed by smart robot/automation with 28.8% and simulation technologies with 19.4%.

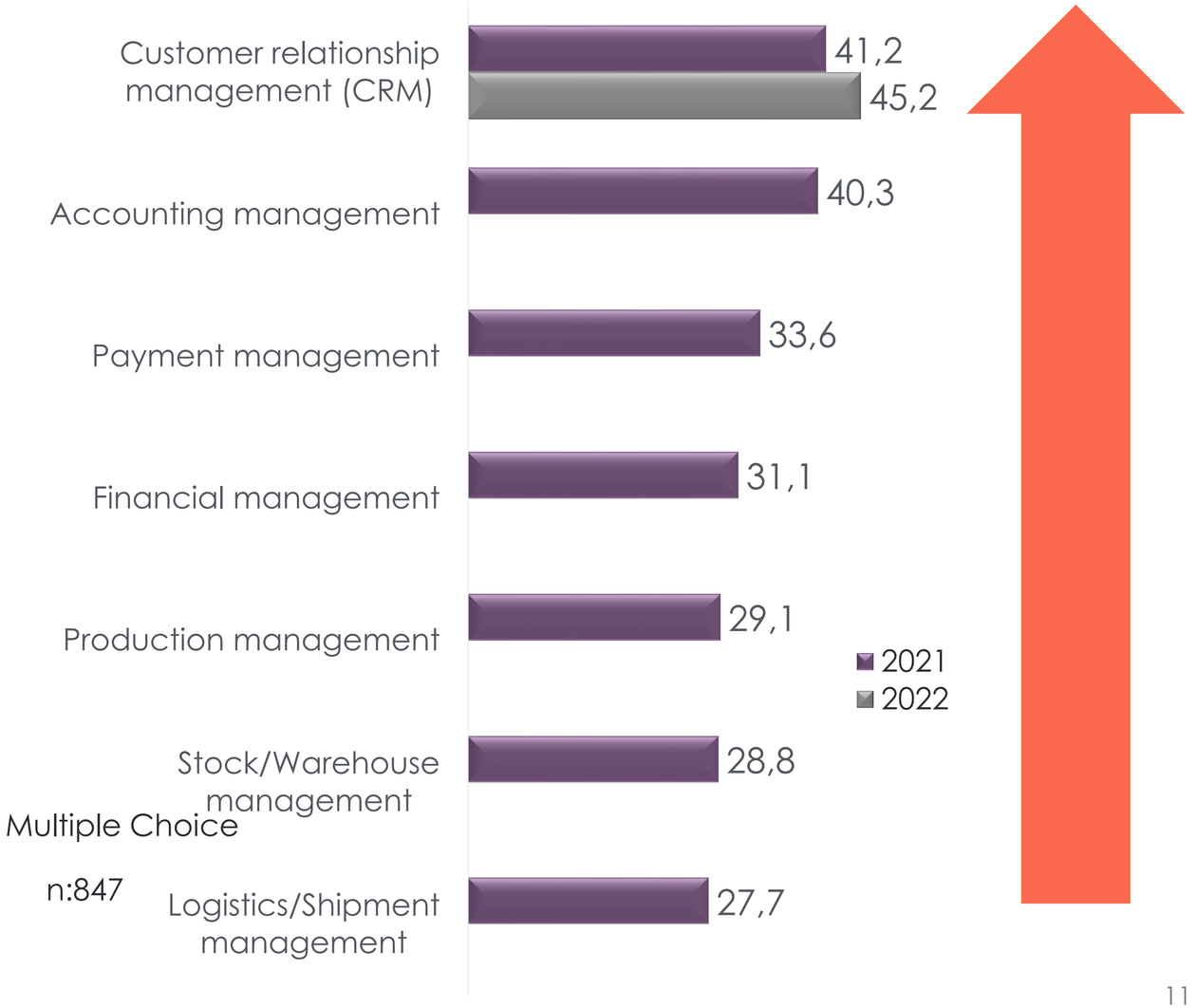
Considering the digital technologies that are believed to affect businesses in the future, "Artificial intelligence" and "Big data" differ significantly in positive direction in establishments that have 100+ employees and completed their corporate management, in 2021 and 2022.

Business Administration

Artificial Intelligence Perception in Establishments

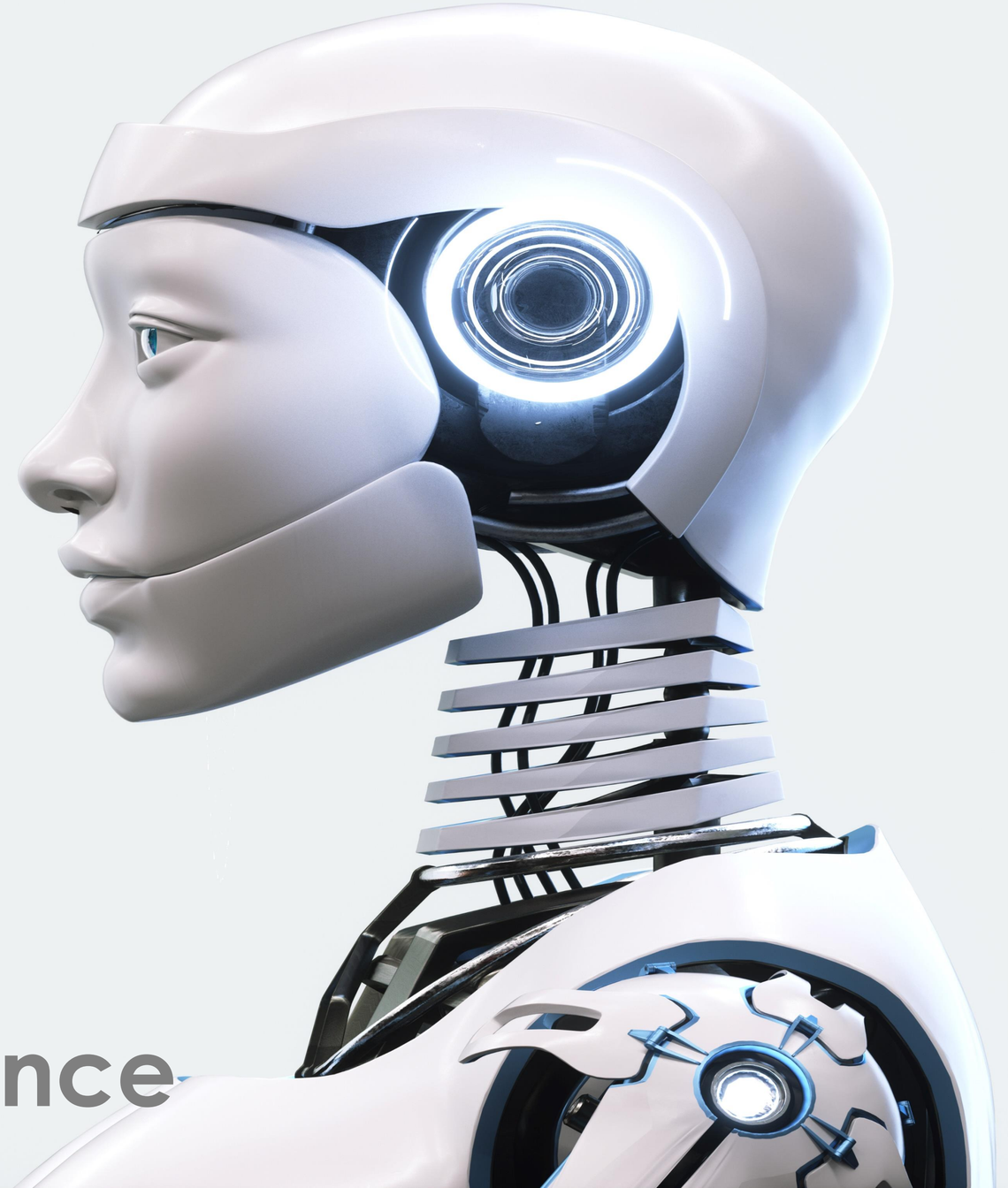
Would you please indicate the management tools you want to digitize in the upcoming period?

Corporate Governance Tools/Processes to Digitize

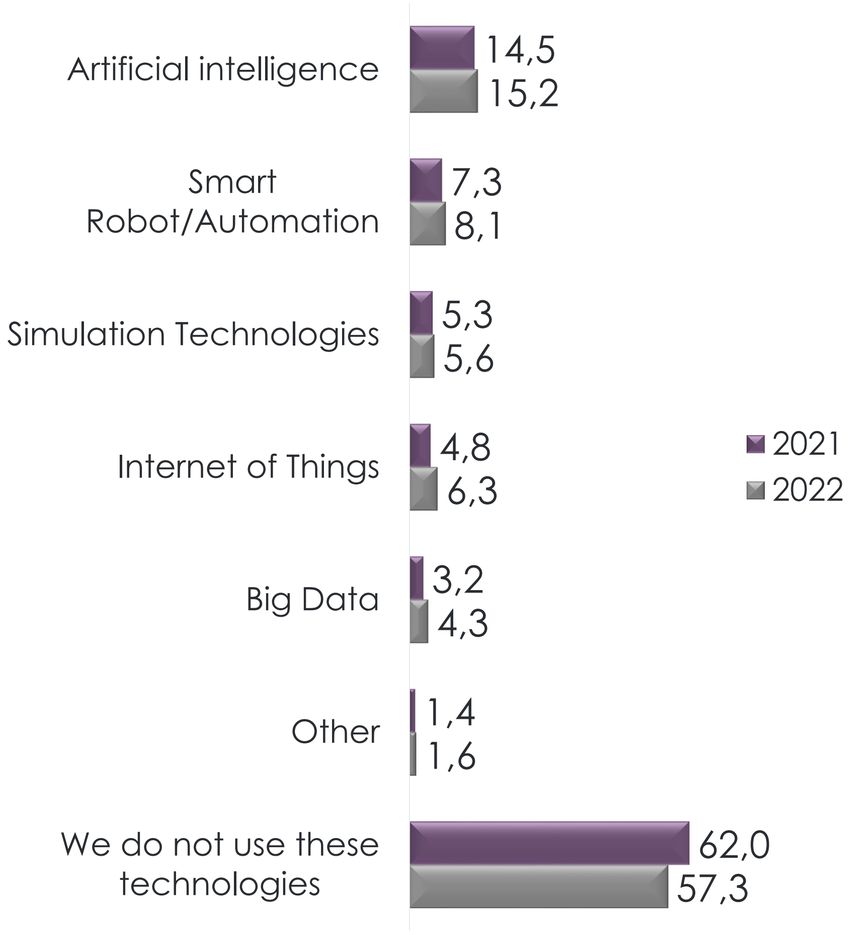


- The evolution of technology integration in establishments starts from logistics and stock management and develops towards CRM.
- The management tools that establishments want to digitalize show us that they are experiencing this evolution in the right way.
- The most important step in the digitalization process is to transfer the customer experience into digital. Machine learning and artificial intelligence's interpretation of the customer is in a very important and critical position in this era of digitalization.
- The idea of focusing on «Customer Relationship Management (CRM)» has increased to 45.2%, which is statistically significant compared to 2021.
- On the other hand, financial management processes are followed digitally.

Artificial Intelligence



Digital Technologies Used



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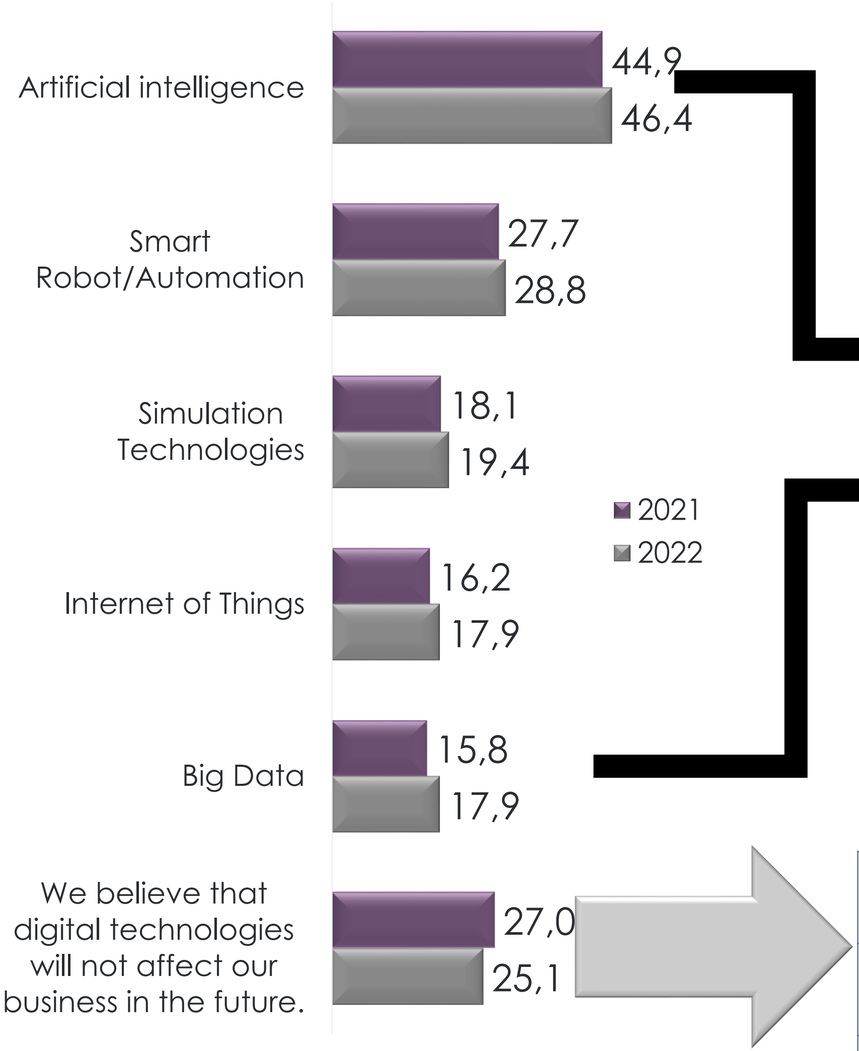
Multiple Choice

- Establishments that do not use the specified digital technologies do not differ significantly from each other in 2021 and 2022 in terms of the sector.
- When we analyze the 2022 results on the basis of enterprise size, micro-scale enterprises differ in a meaningful way, as in 2021. In establishments with 50-99 and 100+ employees that have completed their corporate management, this idea is decreasing, although not significantly.

	1-9 Workers	10-49 Workers	50-99 Workers	100+ Workers
2021	65.3%	27.6%	4.1%	3.0%
2022	66.1%	28.2%	3.4%	2.2%

Digital Technologies Believed to Impact the Establishments in the Future



2021	60.7%
2022	64.3%

	1-9 Workers	10-49 Workers	50-99 Workers	100+ Workers
2021	61.0%	27.2%	5.9%	5.9%
2022	59.9%	28.8%	5.4%	5.9%

n:847 Multiple Choice

- In regard to digital technologies that are believed to affect establishments in the future, «artificial intelligence» and «big data» differ significantly in enterprises with 100+ employees that have completed their corporate management in 2021 and 2022.

	1-9 Workers	10-49 Workers	50-99 Workers	100+ Workers
2021	3.2%	8.2%	23.7%	64.9%
2022	5.0%	8.2%	23.4%	63.4%

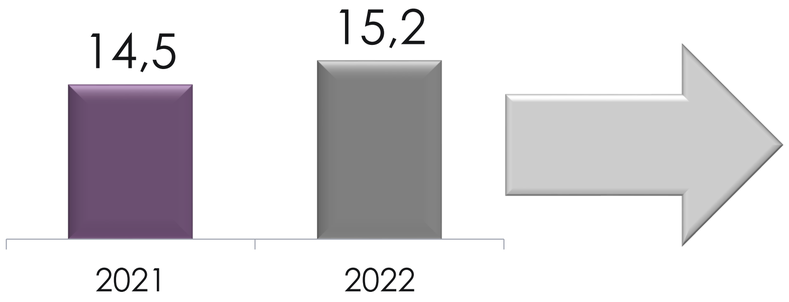
- The idea that «digital technologies will not affect business in the future» is a common thought in all sectors.
- Regardless of the sector, this idea intensifies in micro-scale enterprises. As the size of the enterprise increases, the intensity of this thought decreases.

Artificial Intelligence Perception in Establishments

Do you use artificial intelligence technology?

The rate of using artificial intelligence has increased to 15.2% in 2022. When we analyze it on the basis of regions, Marmara region differs significantly from other regions with 52.4% and Central Anatolia region with 24.9%, which is similar to 2021. The provinces that have the greatest impact on this differentiation are Istanbul and Ankara. It is observed that this increase is due to industry/production, retail/trade and service sectors, and takes its source from customer tracking and management algorithms.

Usage of Artificial Intelligence Technology



	1-9 Workers	10-49 Workers	50-99 Workers	100+ Workers
2021	9.8%	16.3%	35.7%	38.2%
2022	12.7%	15.9%	34.9%	38.9%

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	2021	2022
Base	123	129

Sectors / Fields Where Artificial Intelligence Technology is Used

Industry-Manufacturing - 27.9%

- Camera/Security/Alarm
- Forecasting systems (spare parts, raw materials, etc.)
- Production lines
- Sound assistant
- Stock tracking
- Marketing activities
- Customer tracking/Management

Service - 22.2%

- Customer tracking / CRM / customer segmentation
- Camera/Security/Alarm
- HR department
- Product recommendation
- Big data/information processing

Retail – Trade - 19.7%

- Camera/Security/Alarm
- HR department
- Insight creation
- Customer campaigns
- Education
- Chatbot (product delivery phase)
- Customer tracking / CRM / customer segmentation

Education - 5.7%

- Devices
- Data processing
- Student affairs

Construction - 4.1%

- Camera/Security/Alarm
- Information processing

Internet & Informatics - 3.3%

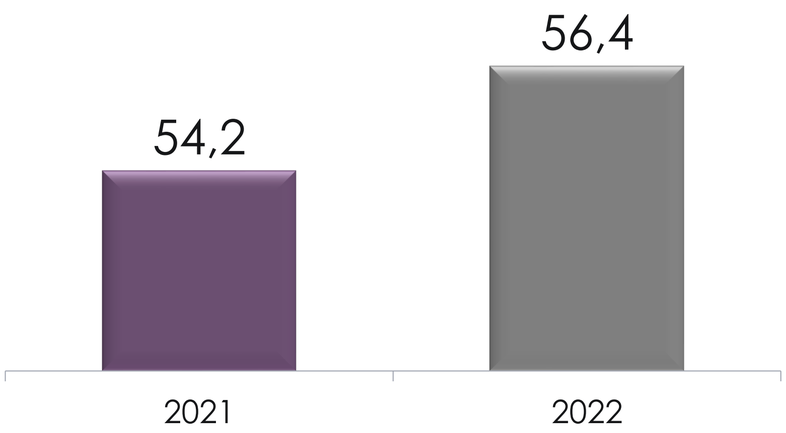
- Intelligent assistants
- Recommendation engines
- Data editing
- In-house reporting

Artificial Intelligence Perception in Establishments

Do you want to use artificial intelligence technology in the future?

In 2022, 56.4% of establishments are considering using artificial intelligence technology in the future. When we analyze in terms of enterprise size, this rate increases to 75.5% in establishments with 100+ employees that have completed their corporate management, which is similar to 2021. In smaller enterprises, it is at a rate of 50.0%, again similar to 2021.

Consideration to Use AI Technology in the Future - Establishments



	1-9 Workers	10-49 Workers	50-99 Workers	100+ Workers
2021	50.9%	55.8%	50.0%	75.0%
2022	52.4%	55.3%	50.7%	75.5%

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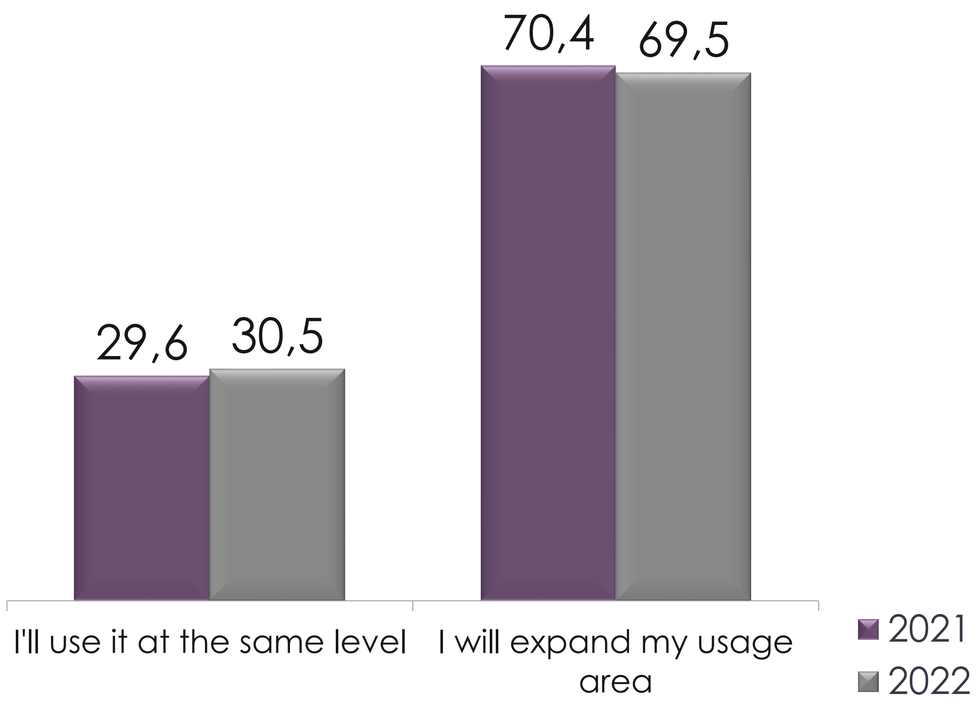
Artificial Intelligence Perception in Establishments

Do you plan to use artificial intelligence also in different areas in the future?

Consideration to Use AI Technology in Different Fields in the Future



	2021	2022
Base	123	129

Asked to those who currently use artificial intelligence.

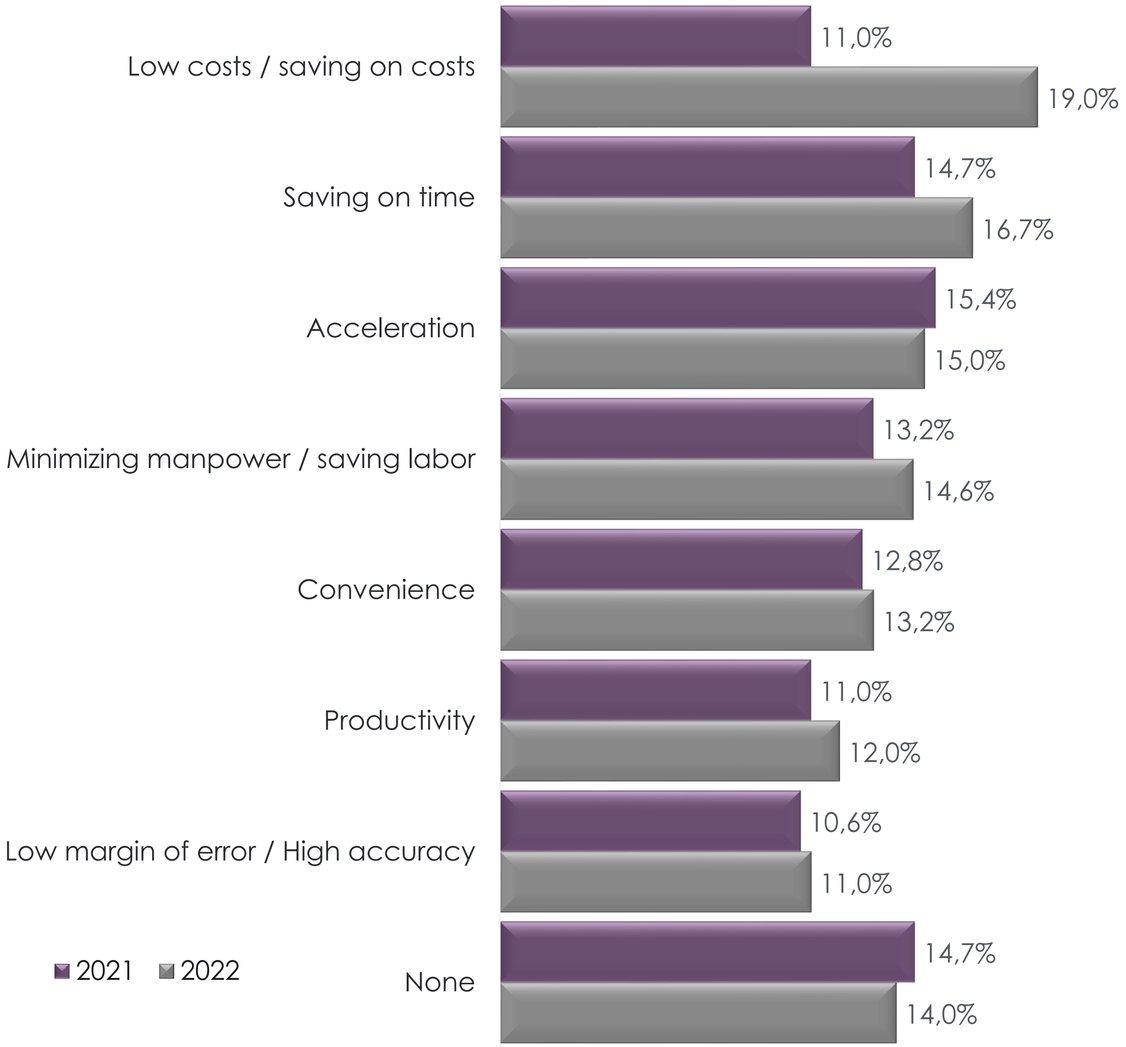
The establishments using artificial intelligence mostly stated that they will increase the usage areas of artificial intelligence technologies in the future, although there are minor changes compared to 2021.

	1-9 Workers		10-49 Workers		50-99 Workers		100+ Workers	
	2021	2022	2021	2022	2021	2022	2021	2022
I'll use it at the same level	24.5%	24.4%	7.1%	7.3%	60.0%	60.6%	26.7%	26.9%
I will expand my usage area	75.5%	75.3%	92.9%	92.3%	40.0%	39.7%	73.3%	73.5%

Artificial Intelligence Perception in Establishments

Would you please specify the advantages of using AI technology in your business?

Advantages of Using Artificial Intelligence Technology at Work



In 2021, the biggest advantage in using artificial intelligence technologies was «Acceleration», whilst it is «**Savings on cost and time**» in 2022.

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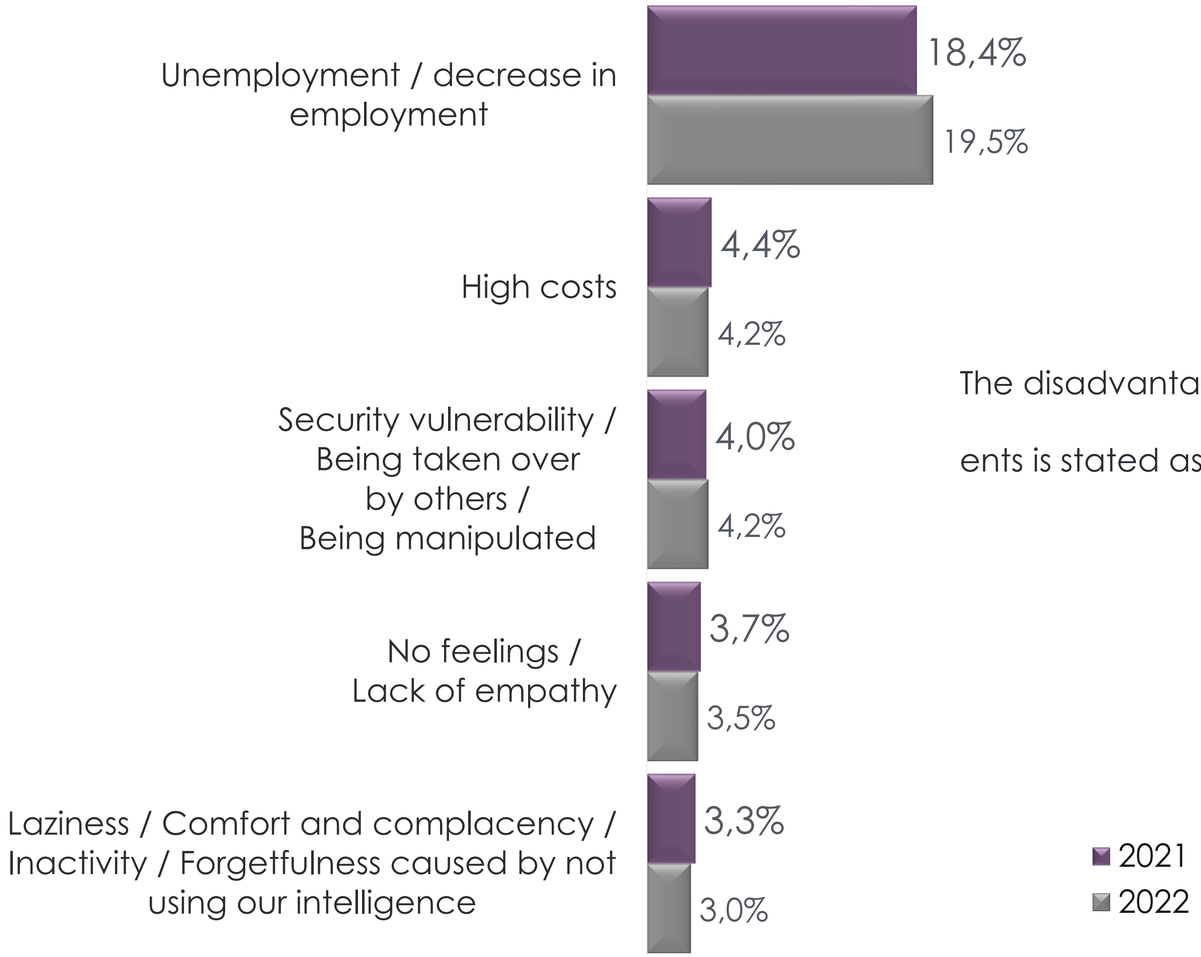
Disadvantages of Using Artificial Intelligence Technology at Work



The disadvantage of using artificial intelligence technologies for establishments is stated as «Unemployment/decrease in employment» also in 2022.

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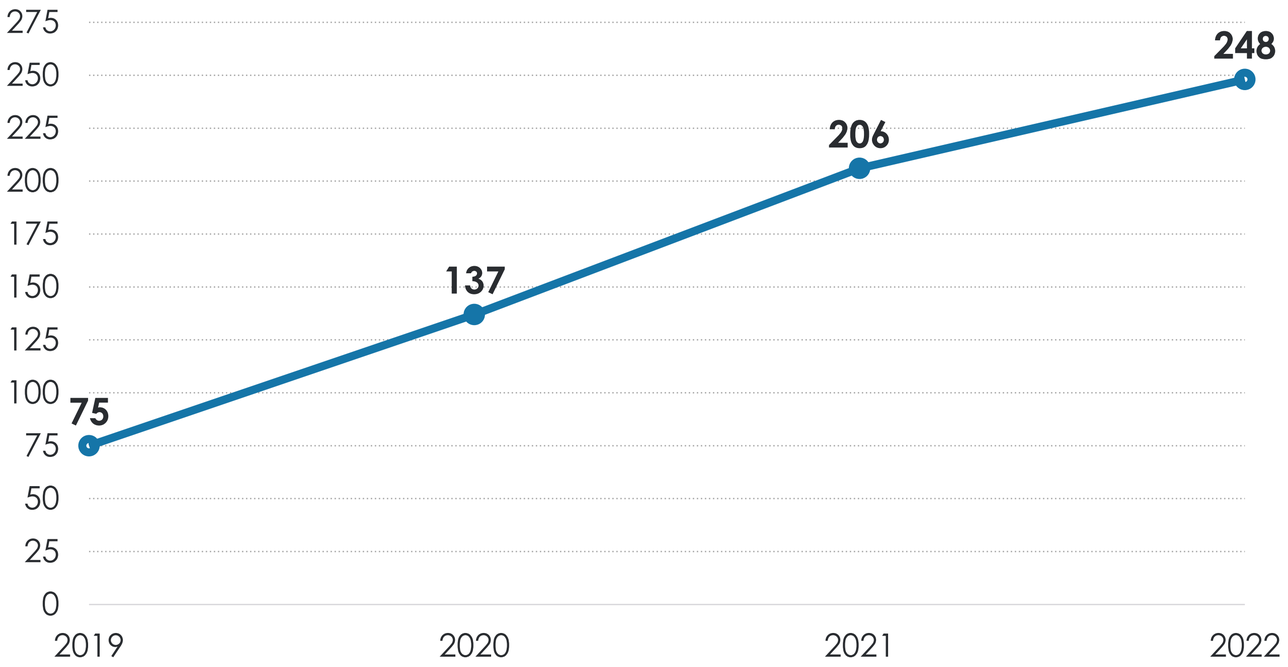
Artificial Intelligence Perception in Establishments

Number of Entrepreneurs Producing Artificial Intelligence



The number of entrepreneurs producing artificial intelligence in Turkey was 75 in 2019, and it has increased by 82.7% in 2020 to 137.

In 2021, this number increased to 206, and reached 248 in 2022 with an increase of 21.4%.

$$Arf(q) = \sum_{i=1}^{n} q(a_i)\, q(b_i) \in Z_2$$

$$a_i , b_i \quad i = 1, 2, 3, \ldots\ldots, n.$$

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