

## Evaluation of Digital Entrepreneurship in Turkey

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### ABSTRACT

This study was conducted to evaluate digital enterprises in Türkiye. Secondary data was used in the study and the data was obtained from TUIK. Small (10-49), medium (50-249) and large (over 250) enterprises, which KOSGEB classified without turnover according to the number of employees, participated in the study. The collected data was analyzed with Word Art, Microsoft Excel 2015, graphics and ratio analysis. While the internet access rate was 85.4% in 2007, it became 96.0% in 2023. 40.28% of enterprises use social media. The enterprises that use social networks the most were Facebook, LinkedIn and Xing with 89%. This was followed by YouTube, Instagram, Pinterest, Snapchat, Spotify with 75.5% and Twitter with 33.6%. While the website ownership rate was 51.2% in 2022, this rate became 55.9% in 2023. According to the economic activity group, accommodation and food activities are the most common. Enterprise Resource Planning (ERP) software usage increased by 1.6 points compared to 2021 and became 29.7% in 2023. Customer Relationship Management (CRM) software usage increased by 1.5 points compared to 2021 and became 12.1% in 2023. The cloud enterprise usage rate of enterprises was found to be 16.4% and the artificial intelligence usage rate was found to be 5.5%. According to TÜİK 2023 data, the low artificial intelligence usage rate was attributed to high costs and the lack of sufficient experts. The widespread use of the internet and the monitoring of processes via the internet have changed the structure of enterprises and forced them to digitalize.

**Keywords:** Digitalization, Entrepreneurship, Digital Entrepreneurship, Management, Technology

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### INTRODUCTION

In the world, as the 21st century approaches, information and communication technologies have made rapid progress. Especially with the widespread use of the internet, both individuals and businesses have started to actively use information and communication technologies. Businesses have traditionally carried out their sales and marketing activities and other processes through computers. Digitalization has affected both individuals and businesses and has changed the way companies do business. Businesses have also compromised on their traditional entrepreneurial style and moved their business processes to the digital environment by using technological tools and equipment.

Entrepreneurship provides employment in a fiercely competitive environment and efficient use of economic resources [1]. In the constantly changing and developing world, the entrepreneurial styles of businesses have also changed according to technological advances. The rapid change in information and communication technologies has necessitated digital change [2]. In the 2000s, especially with Industry 4.0, businesses have started to move their activities to the virtual environment. Thus, traditional entrepreneurship has given way to digital entrepreneurship [3]. Businesses that previously operated in a physical environment have continued their operations in a virtual environment. In this context, various terms such as digital entrepreneurship, electronic entrepreneurship, and internet entrepreneurship have emerged [4]. Today, with

the increase in internet use, people's use of mobile and digital tools has also increased. Since people's wants and needs are constantly changing, people tend to shift towards digital in order to achieve their wants and meet their needs [5]. Digital entrepreneurship stands out in the process of efficiently obtaining, processing, distributing and consuming digital information [6]. New enterprises can be obtained by using new technologies, as well as digital transformation can be achieved in existing businesses [7]. Digital entrepreneurship is among the most preferred studies in management research [8]. Enterprises in the fields of e-commerce, digital content and media, social media, mobile applications, artificial intelligence and data analytics are businesses operating within digital entrepreneurship [3]. As businesses move their activities to the virtual environment, internet entrepreneurship has increased significantly over the years. For example, while the rate of enterprises with 10 or more employees having internet access in Turkey was 85.4% in 2007, this rate increased to 96.0% in 2023 [9]. This study was planned to reveal digital entrepreneurship in Türkiye and determine the current trend. The data was taken from the 2023 TUIK report. The research answers the following questions.

Question 1. What are the domestic enterprises that received the highest investments in 2023?

Question 2. Fixed broadband connection speed and percentage in internet access of enterprises in 2023?

Question 3. What are the rates of social media applications used by enterprises in 2023?

Question 4. What are the most preferred social media applications in 2023?

Question 5. What is the rate of enterprises with a website in 2023?

Question 6. How does the website ownership rate of enterprises by number of employees size group compare in 2022 and 2023?

Question 7. What are the enterprises with websites by economic activity group?

Question 8. What is the rate of enterprises engaged in e-commerce in 2022?

Question 9. What is the Rate of E-Commerce by Economic Activity Group in 2023?

Question 10. How does the Rate of Enterprises Engaged in E-Commerce by Economic Activity Group Compare in 2021 and 2022?

Question 11. What is the rate of ERP and CRM software usage when the number of employees size group is taken into consideration?

Question 12. What is the Paid Cloud Computing Usage of Enterprises in 2023?

Question 13. How does the usage of artificial intelligence technologies compare in 2022 and 2023?

Question.14. What are the technologies used by startups using artificial intelligence?

Question 15. What are the reasons why startups do not use artificial intelligence according to their employee number size group?

It is envisaged that this study will guide academicians, students, investors and researchers and contribute to the literature.

## **ENTREPRENEURSHIP**

Entrepreneurship is not a new concept, it started with the emergence of humanity and will continue to exist in the future. Individuals who are responsible, like to take risks, and have a desire to be successful are called entrepreneurs. Entrepreneurs are individuals who see developments and opportunities in the market, evaluate these opportunities, create business ideas about them, evaluate risks, and use resources in the best way, are determined and innovative [10]. Entrepreneurship is the process of establishing new businesses or implementing new projects. Over time, entrepreneurship has developed and individuals have adapted to the constantly developing and changing environment, and entrepreneurial activities have also differentiated. Policies that encourage entrepreneurship will positively affect entrepreneurship [11]. Entrepreneurship prevents unemployment, increases the productivity of economic resources, develops innovative and creative thinking, and contributes to the welfare of society [1].

Entrepreneurship produces solutions for the sustainable development of the environment, resources, and society. Entrepreneurship is not a new concept, this concept dates back to human history. The main purpose of traditional entrepreneurship is to recognize opportunities and transform these opportunities into marketable services or goods, to take risks and add value [12]. Entrepreneurship has moved to a different dimension with the industrial revolution, the emergence of new technologies and the diversification of production methods. Old jobs have disappeared and new ventures have emerged. In the 20th century, with the emergence of information and communication technologies, entrepreneurship has gained momentum and new job opportunities have emerged. [13] [14]). With the spread of digital technologies, digital ventures have increased and digitalized existing businesses. Therefore, the entrepreneurship development process is an ongoing process in which factors such as the change in people's entrepreneurial attitudes and approaches, the emergence of

technological innovations and the support of policies for entrepreneurs come together [15].

People’s behaviors, social evaluations and self-efficacy affect entrepreneurship [16]. The characteristics required for entrepreneurship; self-sufficiency, internal locus of control, need for achievement, innovation [17]. Entrepreneurship is the basic element of progress and development. It ensures the economic strengthening of countries and prevents unemployment. Encouraging entrepreneurship and providing opportunities, especially among young people, is necessary for economic success [18]. In this context, many studies are being conducted on entrepreneurship by researchers today [19].

**DIGITAL ENTREPRENEURSHIP**

Digital entrepreneurship has the feature of promoting sustainable businesses with economic, environmental and

**Table 1.** *Digital Entrepreneurship Definitions (Adapted from [23] )*

AUTHOR	DEFINITION
Hull et al., 2007	Digital entrepreneurship is a sub-dimension of entrepreneurship in which some or all of the physically present elements in a traditional organization are digitized.
Davidson & Vaast (2010)	Digital entrepreneurship is the evaluation of opportunities for using information and communication systems and digital media, and is defined as pursuing opportunities based on the use of other information and communication technologies.
Nambisan (2017)	Digital entrepreneurship is discussed as the intersection of digital technologies and entrepreneurship.
Sussan & Acs (2017)	Digital entrepreneurship involves using digital technologies in commercial, social, government, institutional or organizational tools. In other words, it is the implementation of non-digital activities using digital applications.
Richter et al., (2017)	Digital entrepreneurship is defined as occupying digital niches, monetizing business opportunities, being innovative, radical and taking risks.
Sahut et al., (2021)	Ensuring the acquisition of digital information, effective processing, distribution and consumption of data is known as the use of various socio-technical digital enablers and thus an entrepreneurial digital value creation situation.

Table 1 provides definitions of digital entrepreneurship. As can be understood from here, digital entrepreneurship is the application of information communication systems to enterprises

**COMPARISON OF TRADITIONAL ENTREPRENEURSHIP AND DIGITAL ENTREPRENEURSHIP**

Entrepreneurship in its most basic sense is to make a profit, to use resources, situations and opportunities in the most efficient and effective way, to engage in creative and innovative activities [24]. The entrepreneur spends his time and takes risks [25]. The difference between digital entrepreneurship and traditional entrepreneurship is the application of digital technologies, the high probability of growth, the possibility of global access, and the application of innovation strategies. In other words,

social perspectives of sustainability. The development and application of digital technologies offer new opportunities to entrepreneurs and contribute to sustainability by creating an environment of economic, environmental and social welfare [20]. A wide range of opportunities are created with the digitalization of companies. In particular, the increase in the public’s perception of sustainability and the fact that governments have policies that encourage sustainability increase digital enterprise. Connectivity and accessibility, which increase the impact of digital entrepreneurship, increase the success of enterprises [21]. The development of digital technologies supports the emergence of new sustainable growth business models (in economic terms), and also increases digital transformation [22]. There are a wide variety of digital entrepreneurship definitions. These definitions are shown in detail in Table 1.

digital entrepreneurship is the transfer of all processes of traditional entrepreneurship to the digital environment [26]. While entrepreneurship is defined as a freelance profession, digital entrepreneurship differs from traditional entrepreneurship because it takes place on a digital platform [27].

Table 2 compares traditional and digital entrepreneurship in detail. Traditional entrepreneurship refers to knowing opportunities, evaluating them, making them marketable and valuable, taking risks and getting rewarded [28]. In digital entrepreneurship, these features are transferred to the digital domain and combined with the originalities of the digital domain and transformed into risk, creativity or speed [29]. In traditional entrepreneurship, market entry, production and storage are difficult. Distribution is slow, there must be a physical place for the workplace,

organizational commitment is high, communication is usually face-to-face and a hierarchical structure is noticeable. In digital entrepreneurship, market entry, production and storage are easy, distribution is fast. There is no need for a physical environment for the workplace. Organizational commitment is difficult. Communication is provided with the help of information technologies. The organizational structure is flexible and collaborative [2]. Digital entrepreneurship differs from traditional entrepreneurship by reducing the costs of businesses, increasing efficiency and providing faster growth opportunities.

**METHOD**

**Purpose, Scope and Limitations of the Study**

Globalization, technological advances, and internet usage have changed entrepreneurship and moved it to the virtual environment. Businesses in the world and in Türkiye have to renew themselves to keep up with the changing and developing age. This study was conducted to evaluate digital initiatives in Turkey and to reveal the current trend. It is aimed to guide future researchers and investors.

**Research Method**

The research data was taken from the TUIK report dated March 1, 2024. Secondary data was used in the research and the data was taken from TUIK. Small (10-49), medium (50-249) and large (over 250) businesses that KOSGEB classified as turnover-free according to the number of employees participated in the research. The collected data was analyzed with Word Art, Microsoft Excel 2015, graphics and ratio analysis.

**FINDINGS**

**Question 1. What are the domestic enterprises that received the highest investments in 2023?**

When we look at the investments in Türkiye in 2023, it is seen that the gaming sector is the most prominent. In addition, investors are interested in initiatives in the field of energy and sustainability. Although there are also investments in the automotive technologies and super application fields, which have attracted great interest from investors in 2022 and before, there are decreases compared to previous years. Table 3 shows the list of 10 local startups receiving the highest investments in 2023.

**Table 3. Local Startups Receiving The Highest Investments in 2023 ([30] )**

SERIAL NO	FIRM	INVESTMENT AMOUNT
1	İNSİDER	(105 MILLION DOLLARS )
2	GETİR FİNANS	(50 MILLION DOLLARS )
3	İNAVİTAS	(12,5 MILLION DOLLARS)
4	FAZLA	(6 MILLION DOLLARS)
5	LINKTERA	(5,13 MILLION DOLLARS )
6	HOPI	(5 MILLION DOLLARS )
6	BLUEDOT	(5 MILLION DOLLARS)
7	MACELLAN SUPERAPP	(4,7 MILLION DOLLARS)
7	SALUS	(4,7 MILLION DOLLARS )
8	BÜYÜTECH	(4,2 MILLION DOLLARS)
9	PASSION PUNCH	(4 MILLION DOLLARS)
10	HOCKEYSTACK	(2,7 MILLION + 500 THOUSAND DOLLARS) 3.2 MILLION DOLLARS)
10	NETKASAM	(3,2 MILLION DOLLARS )

As seen in table 3, there are 13 companies that made the most investments and entered the top 10. Insider is in first place with \$105 million. Getir finans is second with \$50 million. Inanitas is third with \$12.5 million.

**Question 2. Fixed broadband connection speed and percentage in internet access of enterprises in 2023?**

In 2023, almost all enterprises used fixed broadband

connections to access the internet. This rate is 92.4%. Broadband connection speed and percentage in internet access are given in table 4.

Table 4 shows the fixed broadband internet speeds and rates of the enterprises. According to the table, it is known that 22.4% of them use internet at 29 Mbit/s and lower speeds, the vast majority of them use internet at 30-99

**Table 4.** Fixed Broadband Connection Speed And Percentage In Enterprises' Internet Access in 2023 (TUIK 2023)

Broadband Connection Speed	Percentage
29 Mbit/s and at lower speed	22,4 %
30-99 Mbit/s in the speed range	38,5 %
100-499 Mbit/s in the speed range	24,5 %
500-999 Mbit/s in the speed range	6,1 %
1 Gbit/s	8,5 %

Mbit/s speeds, 24.5% at 100-499 Mbit/s speeds. It is seen that 6.1% use internet at 500-999 Mbit/s speeds, and 8.5% use internet at 1 Gbit/s and above speeds.

**Question 3. What are the rates of social media applications used by enterprises in 2023?**

In 2023, enterprises use social media in their activities. 40.2% of all enterprises in Türkiye use social media applications. These are social media applications such as social networks, blogs, micro blogs or multimedia sharing sites.

Table 5 shows the rates of social media application usage

**Table 5.** Social Media Application Usage Rates of Enterprises In 2023 (TUIK, 2023)

Number of Employees	Percentage
10 -49	37,7 %
50-249	49,8 %
250 and above	70,8 %

by enterprises in 2023. As the number of employees of enterprises increases, there is an increase in the use of social media applications. The rate of using social media applications was highest in enterprises with 250 or more employees. These were followed by businesses with 50-249 and 10-49 employees.

**Question 4. What are the most preferred social media applications in 2023?**

Many enterprises use at least one of the social media accounts. The most used social media accounts are shown in Figure 1 with a word cloud.



**Figure 1.** Social Networks Are The Most Preferred Social Media Applications

Figure 1 shows the most preferred social media applications in social networks. They also benefit from social media in initiatives. Table 6 shows the most preferred social media applications.

**Table 6.** The Most Preferred Social Media Applications in 2023 (TUIK, 2023)

Social Media Applications	Percentage
Facebook, LinkedIn, Xing	89,1 %
YouTube, Instagram, Pinterest, Snapchat, Spotify	75,5 %
Twitter gibi girişim blogları veya mikro bloklar	33,6 %

As seen in Table 6, startups prefer social media applications. In Turkey, Facebook, LinkedIn and Xing were the most popular with 89.1%. This was followed by multimedia sharing sites such as YouTube, Instagram, Pinterest, Snapchat and Spotify with 75.5%. The rate of startups with blogs or micro blogs such as Twitter is 33.6%.

**Question 5. What is the rate of enterprises with a website in 2023?**

Globalization and technological advances are increasing the rate of startups owning a website. For example, while **Table 7. Rate of Startups With Websites in 2023 (TUIK, 2023)**

Number of employees	Percentage
10 -49	51,5 %
50-249	75,6 %
250 ve üzeri	92,6 %

**Question 6. How does the website ownership rate of enterprises by number of employees size group compare in 2022 and 2023?**

Today, enterprises actively use websites in processes such as production, management, marketing, sales, promotion, **Table 8. The Comparison of Website Ownership Rates of Enterprises By Number Of Employees Size Group in 2022 and 2023 (TUIK, 2023)**

Number of employees	2022	2023	Change
10 -49	47,0	51,5	+4,5
50-249	69,7	75,6	+5,9
250	92,3	92,6	+0,3
Total	51,2	55,9	+4,7

Table 8 shows the website ownership rate according to the number of employees. The highest website ownership rate is seen in businesses employing 250 or more workers. While the ownership rate was 92.3% in 2022, it increased to 92.6% in 2023. Again, in businesses with 50-249 employees, this rate was 69.7% for 2022 and 75.6% for 2023. In businesses with 10-49 employees, this rate was 47.0% in 2022 and 51.5% in 2023. When we look at the

the rate of website ownership was 51.2% in startups with 10 or more employees in 2022, this rate increased to 55.9% in 2023. Table 7 shows the number of employees by website ownership rate.

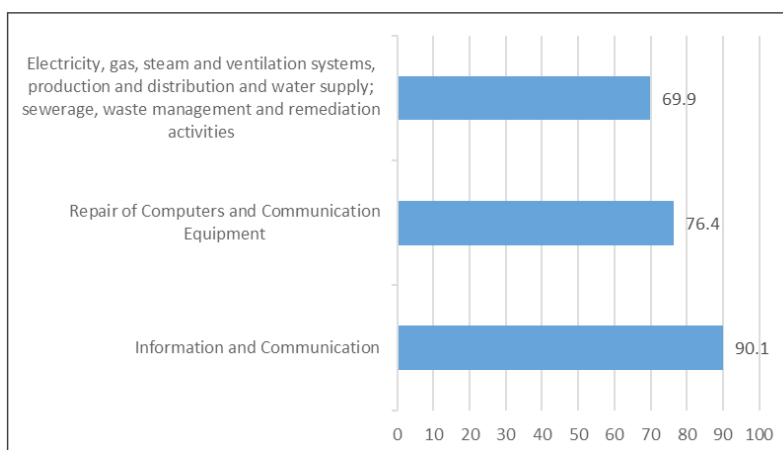
As seen in Table 7 the website ownership rate increases as the number of employees increases. In 2023, the enterprises with the highest number of websites are those with 250 or more employees with 92.6%. This is followed by enterprises with 50-249 employees with 75.6% and enterprises with 10-49 employees with 51.5%.

advertising, etc. Visual 2 shows the comparison of website ownership rates of enterprises by number of employees size group in 2022 and 2023. Visual 2 shows the comparison of website ownership rates of enterprises by number of employees size group in 2022 and 2023 (TUIK, 2023)

total, this rate was 51.2% in 2022 and increased to 55.9% in 2023.

**Question 7. What are the enterprises with websites by economic activity group?**

The rate of the top three enterprises with websites in 2023 is shown in detail graph 1.



**Graph 1. The Rate Of The Top Three Enterprises With Websites in 2023**

In graph 1 see the enterprises that have websites in 2023. It is seen that “information and communication” is in the first place with 90.1%. “Repair of computers and communication tools and equipment” is in the second place with 76.4%. This is followed by “electricity, gas, steam and ventilation system production and distribution and water supply; sewage, waste management and improvement activities” with 69.9%.

**Table 9.** Rate of Enterprises Engaged in E-Commerce 2022 (TUIK, 2023)

Number of employees	Percentage
10 -49	17,3 %
50-249	20,8 %
250 ve üzeri	31,8 %

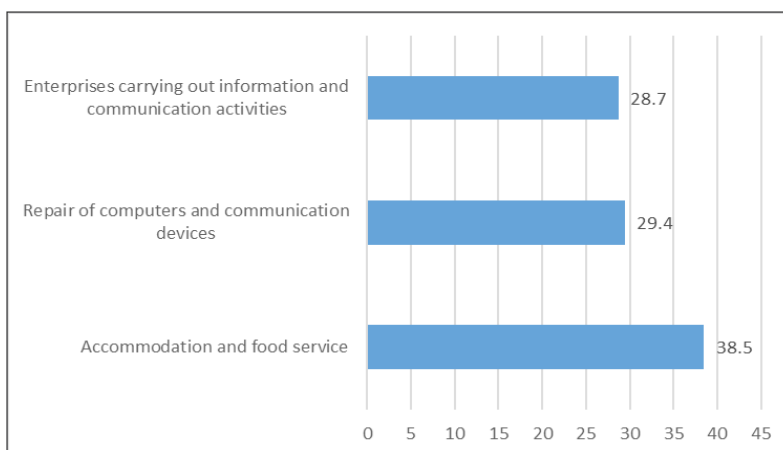
Table 9 shows the rate of e-commerce carried out via the internet (websites or mobile applications) and/or Electronic Data Interchange (EDI) in 2022. The most e-commerce was carried out by businesses employing 250 or more workers with 31.8%.

**Question 8. What is the rate of enterprises engaged in e-commerce in 2022?**

E-commerce transactions are carried out through internet websites or mobile applications) and/or Electronic Data Interchange (EDI). Table 4.8 shows the rate of enterprises in 2022.

**Question 9. What is the Rate of E-Commerce by Economic Activity Group in 2023?**

The top three enterprises that carried out the most e-commerce in 2022 are shown in detail in graph 2.



**Graph 2.** Rate of E-Commerce by Economic Activity Group (TUIK, 2023).

When graph 2 is examined, the businesses that provide “accommodation and food services” made the most e-commerce in 2022 with 39.5%. This was followed by the repair of computers and communication tools and equipment with 29.4% and information and communication activities with 28.7%.

**Question 10. How does the Rate of Enterprises**

**Engaged in E-Commerce by Economic Activity Group Compare in 2021 and 2022?**

Table 10 shows the rate of enterprises engaging in e-commerce by economic activity group. In some sectors, there was an increase in the number of enterprises engaging in e-sales in 2022 compared to 2021. In some, there was a decrease.

**Table 10.** The Rate of Enterprises Engaging in E-Commerce by Economic Activity Group, 2021,2022 (TUIK, 2023).

Number of Employees	2021 %	2022 %	Change %
Accommodation and Food Services Activities	41,4	39,5	-1,9
Repair of Computer Communication Equipment	24,1	29,4	+5,3
Information and Communication	30,3	28,7	-1,6
Wholesale and Retail Trade	25,0	23,5	-1,5
Manufacturing	16,8	17,3	+0,5
Real Estate Activities	20,5	16,4	-3,9

Administrative and Support Service Activities	15.5	14.4	-1,1
Transportation and Storage	12.8	9,9	-2,9
Professional Scientific and Technical Activities	10.4	8.5	-1,9
Construction	10,4	7,4	-2
Electricity, Gas, Steam And Water Supply, Sewage	10,0	7,2	-2,8

Table 10 shows the rate of enterprises engaged in e-commerce by economic activity group. In 2022, only the repair of computers and communication tools and equipment increased by 5% compared to 2021. In other sectors, a decrease is seen in 2022 compared to 2021.

**Question 11. What is the rate of ERP and CRM software usage when the number of employees size group is taken into consideration?**

**Table 11. The Rate of Use of ERP And CRM Software Considering The Employee Number Size Group (TUIK, 2023)**

Number of employees	ERP	CRM
10 -49	25,3 %	10,1%
50-249	47,2 %	19,5 %
250 and above	77,5 %	40,0 %

As seen in Table 11, ERP and CRM software are mostly used in large enterprises. As the enterprise grows, the usage rate also increases.

**Question 12. What is the Paid Cloud Computing Usage of Enterprises in 2023?**

**Table 12. Paid Cloud Computing Usage 2023 (TUIK, 2023)**

Number of employees	Percentage
10 -49	13,7%
50-249	26,6 %
250 and above	48,2 %

**Question 13. How does the usage of artificial intelligence technologies compare in 2022 and 2023?**

Business processes are continued with the help of various

**Table 13. Use of Artificial Intelligence Technologies in 2022 and 2023 (TUIK, 2023)**

Number of employees	2022	2023	Change
10 -49	2,8	4,9	2,1
50-249	5,5	6,5	1
250	17,5	18,5	1
Total	3,5	5,5	2

Tablo. 13 shows businesses using artificial intelligence technology by number of employees. When we compare 2022 and 2023, the rate of using artificial intelligence technology in businesses employing 10-49 employees increased by 2.1%.

Information and communication system usage has increased the use of Enterprise Resource Planning (ERP) software and Customer Relationship Management (CRM). In 2023, (ERP) usage increased by 1.6 points compared to 2021 and reached 29.7%. (CRM) usage increased by 1.5 points compared to 2021 and became 12.1% in 2023. Table 11 shows the usage rate of ERP and CRM software when the employee number size group is taken into account.

Today, the very rapid development of technology has led enterprises to benefit more from information technologies. Table 12 shows the paid IT usage rate of enterprises in 2023 in detail. As seen in Table 12, paid cloud computing services are mostly used by large enterprises. Its use increases as the number of employees increases.

artificial intelligence technologies in enterprises. Visual 4.13 shows the usage rates of artificial intelligence technologies in 2022-2023 in detail.

**Question.14. What are the technologies used by startups using artificial intelligence?**

The technologies used by startups using artificial intelligence are shown in detail in Table 4.14.



**Table 14.** *Technologies Used by Startups Using Artificial Intelligence (TUIK, 2023)*

Technologies Used by Artificial Intelligence-Based Startups	Percentage
Artificial Intelligence Technologies That Identify Objects or People	48,4 %
Artificial Intelligence Technologies That Automate Different Workflows or Assist in Decision Making	43,7 %
Artificial Intelligence Technologies That Produce Written or Spoken Language	41,5 %

According to the data in Table 14, it is seen that artificial intelligence technologies that identify objects or people are used the most with 48.4%.

**Question 15. What are the reasons why startups do not use artificial intelligence according to their**

**Table 15.** *Reasons why Enterprises Do Not Use Artificial Intelligence by Employee Size Group, 2023 (TUIK, 2023)*

Reasons Not to Use Artificial Intelligence Technology	Number of employees			
	Total (%)	10-49 (%)	50-249 (%)	250+ (%)
Costs are too high	60,7	60,7	62,4	52,4
Lack of relevant expertise in the initiative	53,8	53,5	56,4	46,8
Incompatibility with existing equipment, software and systems	46,9	49,0	53,7	47,1
Difficulties with availability or quality of required data	40,1	39,4	45,1	38,9
Artificial intelligence technologies are not beneficial for development	36,5	36,5	38,0	29,0
Lack of clarity of legal consequences	36,3	35,5	40,7	38,3
Concerns about data protection and privacy violations	35,9	35,2	40,3	36,9
Ethical factors	31,3	30,9	34,5	30,4

Note: The total may not be 100 because more than one option was marked

.Table 15 shows the reasons why enterprises do not use artificial intelligence. The factor that affects enterprises the most is cost.

**CONCLUSION**

In our age, where information and communication technologies are changing rapidly, digital technologies have changed business and social life. Today, many enterprises have moved their work and processes to the virtual environment. Thanks to this change, enterprises have integrated their ways of doing business, production, promotion, marketing and sales into the digital environment. As in the whole world, digital enterprises have increased in Türkiye. Since the conditions of each company are different, they have chosen the technology that suits them. This study was carried out to evaluate digital enterprises in Türkiye. Internet use is increasing rapidly in the world and in Türkiye. For example, while the rate of internet access was 85.4% in 2007, this rate increased to 96.0% in 2023. As can be understood from this, enterprises produce their products via the internet, and use the internet; It is used in accounting, sales and marketing, promotion and even in human resources processes. Almost half of the businesses use social media. Thus, they promote their products and make sales. Facebook, LinkedIn and Xing are used by 89% in Türkiye. This is followed by YouTube, Instagram, Pinterest, Snapchat, Spotify with 75.5% and Twitter with 33.6%. Individuals or companies evaluate

**employee number size group?**

There are reasons why entrepreneurs do not use any of the artificial intelligence technologies. These are shown in detail in Table 15.

opportunities, make new initiatives, do e-commerce and improve themselves through this social media. More than half of the businesses have a website and the number of website owners increases day by day. For example, while this rate was 51.2% in 2022, this rate increased by 4.7% in 2023 and reached 55.9%.

As digitalization increases, the types of investments also increase. While the automotive sector attracted great attention from investors before 2023, investors shifted to the gaming sector in 2023. As technology increases, digital initiatives change. In Türkiye, accommodation and food activities are the most prominent in terms of economic activity group according to the number of employees. This is followed by computer equipment and equipment repair, information and communication, wholesale and parking trade, manufacturing and real estate activities, respectively. The least is electricity, gas, steam, water supply, sewage initiatives. Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) software are used in businesses to provide better service. (ERP) software is seen to be 77.5% and (CRM) software is 40.0% in businesses employing 250 or more workers in 2023. As can be understood from this, the use of ERP and CRM increases as the number of employees of businesses increases.

Most of the businesses cannot use artificial intelligence. The biggest reason for this is that businesses do not have

enough capital and artificial intelligence costs are high. Since the costs are very high, businesses cannot use artificial intelligence. Another reason is the lack of relevant expertise in the initiative. However, as the number of experts will increase day by day, businesses will be able to use more artificial intelligence. Incompatibility in existing equipment, software and systems negatively affects the use of artificial intelligence. Difficulties with the availability or quality of the necessary data have affected the use of artificial intelligence. Some entrepreneurs believe that artificial intelligence technologies are not useful for the enterprise. The fact that the legal consequences are not yet clear decreases the use of artificial intelligence. When the legal consequences become clear in the future, the use of artificial intelligence will increase. In addition, it is not preferred because there may be violations related to cybersecurity. However, having a good cybersecurity infrastructure will increase its use. Ethical factors also affect the use of artificial intelligence to a minimum extent.

It has been seen that information technologies are developing and changing very quickly in the globalizing world. This change has also changed the business method as it affects business and social life [31]. In recent years, many digital initiatives have emerged in the World [2]. For example, Amazon, founded in the USA in 1994, Netflix, founded in the USA in 1997, Google, founded in the USA in 1998, Facebook, founded in the USA in 2004, Twitter, founded in the USA in 2006, Airbnb, founded in the USA in 2008, WeChat, founded in China in 2011, SocietyOne, founded in Australia in 2013, Alibaba, founded in China in 2015, Uber, founded in the USA in 2017 are important digital initiatives [32].

There are also some local digital entrepreneurship applications in our country [33]; [2]. These are Hepsi Burada, founded in 1998, Yemek Sepeti, founded in 2000, Sahibinden, founded in 2000, Gitti Gider, founded in 2001, Trendyol, founded in 2009, Onedio, founded in 2012, and Youthall, founded in 2015.

The increase in digital enterprises also contributes to sustainability, and therefore to the economy, society, and the environment. The greatest advantage of digital enterprises is that the capital requirement of the entrepreneur who establishes a business is at a minimum level. The greatest advantage of digital enterprises is that the capital requirement of the entrepreneur who establishes a business is at a minimum level. In addition, digital entrepreneurship can save time and space by providing flexibility in working life without any place and time limitations. This study reveals how important digital enterprise is and that much research should be done on this subject.

## REFERENCES

- Ballı, A. (2017). Girişimcilik ve girişimci tipleri, *Süleyman Demirel Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 29; 143-166. <https://dergipark.org.tr/tr/download/article-file/2695973>
- Kişi, N. (2018). Dijital Çağda yeni bir girişimcilik yaklaşımı: dijital girişimcilik. *Cumhuriyet Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 19(2), 389-399. <https://doi.org/10.1073/pnas.1908375116>
- Alay, H. K. (2023). Yeni normalin yeni girişimciliği: Dijital girişimcilik. *İstanbul Esenyurt Üniversitesi İşletme ve Yönetim Bilimleri Fakültesi Sosyal Bilimler Araştırmaları Dergisi*, 3(1), 1-9. <https://dergipark.org.tr/tr/download/article-file/2985091>.
- Eyel, C. Ş., ve Sağlam, H. (2021). Dijital dönüşüm ve girişimcilikteki değişim: Dijital girişimcilik. *Atlas Sosyal Bilimler Dergisi*, 1(6), 7-20. <https://dergipark.org.tr/en/download/article-file/1584319>
- Uysal, B. ve Ulusinan, E. (2020). Güncel Dijital Sağlık Uygulamalarının İncelenmesi. *Selçuk Sağlık Dergisi*, 1(1), 46-60. <https://dergipark.org.tr/tr/download/article-file/1087430>
- Sahut, J. M., Iandoli, L. ve Teulon, F. (2021). The age of digital entrepreneurship. *Small Business Economics*, 56(3), 1159-1169. DOI <https://doi.org/10.1007/s11187-019-00260-8>
- Zhao, F. ve Collier, A. (2016). Digital entrepreneurship: research and practice. in: 9th annual conference of the euromed academy of business. *Euromed Academy of Business*, 2173-2182. <https://eprints.staffs.ac.uk/id/eprint/6274>
- Zaheer, H., Breyer, Y. ve Dumay, J. (2019). Digital entrepreneurship: An interdisciplinary structured literature review and research agenda. *Technological Forecasting and Social Change*, 148, 119735. <https://doi.org/10.1016/j.techfore.2019.119735>
- TÜİK 2023 TÜİK: 14 Eylül 2023 SAAT: 10:00 SAYI: 49393 Erişim tarihi. 20.05.2024 <https://data.tuik.gov.tr/Bulten/Index?p=Girisimlerde-Bilisim-Teknolojileri-Kullanim-Arastirmasi-2023-49393>
- Sartaş, A. ve Duran, G. (2017). Üniversite Öğrencilerinin Girişimcilik Eğilimlerinin Tespitine İlişkin Bir Araştırma. *Muş Alparslan Üniversitesi Sosyal Bilimler Dergisi*.5(1), 147-165 <https://doi.org/10.18506/anemon.285116>
- Aldrich, H. E. (2005). Entrepreneurship. *The Hand Book of Economic Sociology*, 2, 451-477.
- Hull, Clyde Eirikur, Yu-Ting Caisy Hung, Neil Hair, Victor Perotti, ve Richard De-Martino. (2007). Taking advantage of digital oppor-tunities: A typology of digital entrepreneurship. *Inter-national Journal of Networking and Virtual Organisations* 4: 290–303. <https://doi.org/10.1504/IJNVO.2007.015166>

13. Durukan, T. (2006). Dünden Bugüne Girişimcilik Ve 21. Yüzyılda Girişimciliğin Önemi. *Girişimcilik Ve Kalkınma Dergisi*, 25-37 <https://arastirmax.com/tr/system/files/dergiler/114522/makaleler/1/2/arastirmax-dunden-bugune-girisimcilik-21.yuzyilda-girisimciligin-onemi.pdf>
14. Aşkın, A., Nehir, S. ve Vural, S. Ö. (2011). Tarihsel süreçte girişimcilik kavramı ve gelişimi. *Girişimcilik ve Kalkınma Dergisi* 6(2), [researchgate.net/profile/Aysin-Askin/publication/316220686\\_Historical\\_Period\\_Entrepreneurship\\_Concept\\_And\\_Development\\_Tarihsel\\_Surecte\\_Girisimcilik\\_Kavrami\\_Ve\\_Gelisimi/links/58f66fb045851506cd30e6b5/HISTORICAL](https://researchgate.net/profile/Aysin-Askin/publication/316220686_Historical_Period_Entrepreneurship_Concept_And_Development_Tarihsel_Surecte_Girisimcilik_Kavrami_Ve_Gelisimi/links/58f66fb045851506cd30e6b5/HISTORICAL)
15. Çelebi, F. (2021). Dijital çağda liderlik ve girişimcilik. Ankara: İksad Yayınevi, 809-830.
16. Nguyen, T. X. (2020). Factors affecting entrepreneurial decision of nascent entrepreneurs belonging generation y in vietnam, *Journal of Asian Finance, Economics and Business* 7(8), 407-417. <https://doi.org/10.13106/jafeb.2020.vol7.no8.407>
17. Kerr, P. S., Kerr, R. W. ve Dalton, M. (2019). Risk Attitudes And Personality Traits of Entrepreneurs And Venture Team Members. *PNAS*, 36, (116), 17712-17716. [doi.org/10.1073/pnas.1908375116](https://doi.org/10.1073/pnas.1908375116)
18. Balaban, Ö. ve Özdemir, Y. (2008). Girişimcilik eğitiminin girişimcilik eğilimi üzerindeki etkisi: Sakarya Üniversitesi İİBF örneği. *Girişimcilik ve Kalkınma Dergisi*, 3(2), 133-147. [https://acikerisim.comu.edu.tr/xmlui/bitstream/handle/20.500.12428/952/Ozlem\\_Balaban\\_Makale.pdf?sequence=1&isAllowed](https://acikerisim.comu.edu.tr/xmlui/bitstream/handle/20.500.12428/952/Ozlem_Balaban_Makale.pdf?sequence=1&isAllowed)
19. Kahya, C. ve İmamoğlu, İ. K. (2015). Ekonomi okuryazarlığının girişimcilik niyeti üzerindeki rolü. *International Journal of Social Science*, 39, 139-156. DOI : 10.9761/JASSS2996
20. Gregori, Patrick, ve Patrick Holzmänn. (2020). Digital sustainable entrepreneurship: A business model perspective on embedding digital technologies for social and environmental value creation. *Journal of Cleaner Production* 272:<https://doi.org/10.1016/j.jclepro.2020.122817>
21. Lichtenthaler, U. (2021). Digitainability: The combined effects of the megatrends digitalization and sustainability. *Journal Of Innovation Management* 9: 64–80. : DOI: [https://doi.org/10.24840/2183-0606\\_009.002\\_0006](https://doi.org/10.24840/2183-0606_009.002_0006)
22. Gavrilă Gavrilă, S., ve De Lucas Ancillo, A. (2022). Entrepreneurship, innovation, digitization and digital transformation toward a sustainable growth within the pandemic environment. *International Journal of Entrepreneurial Behavior & Research*, 28(1), 45-66. on Emerald Insight at:<https://www.emerald.com/insight/1355-2554.htm>
23. Deveciyan, M. T. (2023). Dijital girişimcilik ekosisteminde sürdürülebilirlik. *Journal of Awareness (JoA)*, 8(1), 77-88. <https://www.cceol.com/search/article-detail?id=1115556>
24. Çolakoğlu, H. ve Çolakoğlu, T. (2016). Üniversitelerdeki Girişimcilik Eğitimi İle Öz Yeterlilik Algısı Ve Girişimcilik Potansiyeli İlişkisi Üzerine Bir Saha Araştırması. *Sosyal ve Beşeri Bilimler Araştırmaları Dergisi*.17(37),70-75. <https://dergipark.org.tr/en/download/article-file/453642>.
25. İrmis, A. ve Özdemir, L. (2011). Girişimcilik ve yenilik ilişkisi. Çanakkale Onsekiz Mart Üniversitesi Yönetim Bilimleri Dergisi.9(1), 137-61 <https://dergipark.org.tr/en/download/article-file/705219>
26. Bensaid, W. ve Azdimousa, H. (2021). Digital entrepreneurship vs. traditional entrepreneurship: the setting up of a global conceptual model. *International Journal of Economic Studies and Management (IJESM)*, 1(1), 86-92. : <https://doi.org/10.52502/ijesm.v1i1.159>
27. Antonizzi, J. ve Smuts, H. (2020). The characteristics of digital entrepreneurship and digital transformation: asystematic literature review. in responsible design, implementation and use of information and communication technology: 19th IFIP WG 6.11 Conference On E-Business, E-Services, And E-Society, I3E 2020, Skukuza, South Africa, April 6–8, 2020, Proceedings, Part I 19 (ss. 239-251). Springer International Publishing [https://doi.org/10.1007/978-3-030-44999-5\\_20](https://doi.org/10.1007/978-3-030-44999-5_20).
28. Yaghoubi, N. M., Salehi, M., Eftekharian, A. ve Samipourgiri, E. (2012). Identification of the effective structural factors on creating and developing digital entrepreneurship in the agricultural sector. *African Journal of Agricultural Research* 7 (6), 1047-1053: DOI: 10.5897/AJAR11.1138.
29. Van Laar, E., Van Deursen, A. J. A. M., Van Dijk, J. A. G. M. ve De Haan, J. (2020). Determinants of 21st century skills and 21st century digital skills for workers: A systematic literature review. *SAGE Open*, 10(1). <https://doi.org/10.1177/2158244019900176>.
30. <https://webrazzi.com/2023/12/26/2023-en-cok-yatirim-alan-10-yerli-girisim/>. erişim tarihi 20 .09.23
31. Boz, N. ve Serinkan, C. (2022). Türkiye’de dijital girişimcilik ve KOBİ’ler. *Girişimcilik İnovasyon ve Pazarlama Araştırmaları Dergisi*, 6(12), 102-117. <https://doi.org/10.31006/gipad.1204002>
32. Eysel, C. Ş., ve Sağlam, H. (2021). Dijital dönüşüm ve girişimcilikteki değişim: Dijital girişimcilik. *Atlas Sosyal Bilimler Dergisi*, 1(6), 7-20. <https://dergipark.org.tr/en/download/article-file/1584319>.
33. Tatar, O. (2017). Dikkat çekici dijital girişimler: Stajim.net, <https://www.digitaltalks.org/2017/02/06/dikkat-cekici-dijital-girisimler-stajim-net>