WHO IS PREPARED FOR THE NEW DIGITAL AGE?

Evidence from the EIB Investment Survey

European Investment Bank

The EU bank

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About the EIB Investment Survey (EIBIS)

The EIB Group Survey on Investment and Investment Finance is a unique, annual survey of some 13 500 firms. It comprises firms in all EU Member States, as well as a sample of US firms which serves as a benchmark. It collects data on firm characteristics and performance, past investment activities and future plans, sources of finance, financing issues and other challenges that businesses face. Using a stratified sampling methodology, EIBIS is representative across all Member States of the EU and for the US, as well as for firm size classes (micro to large) and four main sectors. It is designed to build a panel of observations to support time series analysis, observations that can also be linked to firm balance sheet and profit and loss data. EIBIS has been developed and is managed by the Economics Department of the EIB, with support for development and implementation by Ipsos MORI.

For more information see: http://www.eib.org/eibis.

About this publication

This is a report of the EIB Economics Department. The data source for this report is the EIB Investment Survey (EIBIS) 2019. Results are weighted by industry group (sector), firm size-class and country. The methodology of the EIBIS survey is available at: https://www.eib.org/en/about/economic-research/surveys-data/about-eibis.

Contact: eibis@eib.org.

About the Economics Department of the EIB

The mission of the EIB Economics Department is to provide economic analyses and studies to support the Bank in its operations and in the definition of its positioning, strategy and policy. The Department, a team of 40 economists, is headed by Debora Revoltella, Director of Economics.

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Disclaimer

The views expressed in this publication are those of the authors and do not necessarily reflect the position of the EIB.

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OVERVIEW

Digitalisation is an enormous opportunity and challenge for the current generation. It is revolutionising the world of work, business structures and value chains as well as innovation and market structures. The recent COVID-19 pandemic is a sombre reminder of the relevance – and the necessity – of digital technology for a variety of businesses and sectors: from health to retail, from manufacturing to education. This is exactly why this publication is particularly relevant now, as it provides a snapshot of how businesses in Europe and the United States perceive their digitalisation levels and readiness.

European firms lag the United States in the adoption of digital technologies. Only 66% of manufacturing firms in the European Union, compared to 78% in the United States, report having adopted at least one digital technology. Digital firms perform better and are more dynamic: they have higher labour productivity, grow faster and have better management practices. Size matters for digitalisation. Larger firms have higher rates of digital adoption than smaller firms, while old-small firms tend to be persistently non-digital. If European policymakers want to close the gap with the United States, they need to address structural barriers to investment in digitalisation. Awareness of a potential digital upside is crucial and requires skills. Policy action should also allocate stronger efforts to removing disincentives to grow and reducing market fragmentation, in particular in the service sector where the European Union is still far from a single market.

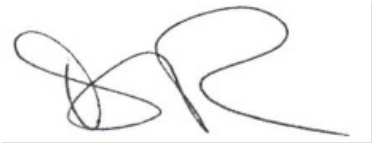
The adoption of digital technologies in Europe is slow when compared to the United States. In this report, we review the evidence on where the EU and US corporate sectors stand in terms of digitalisation activities using novel firm-level data sets. One key finding is that established EU firms lag their US peers in terms of digitalisation activities. The difference is particularly large in the construction sector, where the share of digital firms is 40% in the European Union and 61% in the United States. The difference in adoption rates between EU and US firms is 13 percentage points in services and 11 percentage points in the infrastructure sector.

Digitalisation is associated with better firm performance. Digital firms tend to have higher productivity than non-digital firms, have better management practices, be more innovative, grow faster and create higher-paying jobs. A major barrier that is specific to Europe is an unfavourable firm-size distribution. There are many small firms in the European Union that do not invest in digital technologies. These firms consider labour market regulations, business regulations and the lack of external finance as major obstacles to investment, which may further exacerbate the delay in digital technology adoption.

OVERVIEW

The report draws from two unique sets of data, including the European Investment Bank Survey (EIBIS) 2019, and the EIBIS Start-up and Scale-up Survey 2019. EIBIS is an annual survey with 12 500 firms in Europe and 800 firms in the United States. This survey focuses on firms' assessment of investment and investment finance conditions. The EIBIS Start-up and Scale-up Survey offers granular insights into differences between start-ups and scale-ups on both sides of the Atlantic. In both surveys, firms were asked whether they had heard of, partially or fully implemented digital technologies in the last few years. This approach makes it possible to capture adoption rates for very specific technologies and at the same time to assess the impact of digitalisation more generally.

The aim of this report is to elaborate on what survey data suggest to be the key issues for firms when it comes to the adoption of digital technologies. In particular, it highlights how access to management, skilled labour and the regulatory environment affect the digitalisation of European as well as US firms. One further goal of this report is to understand which framework conditions are needed in the European Union to unlock the benefits of future digitalisation. The analysis is followed by Digitalisation Fiches for each European country. The results of the Digitalisation Fiches can help EU Member States to assess areas in which their firms perform well and those in which they might need policy reforms to better promote digitalisation.



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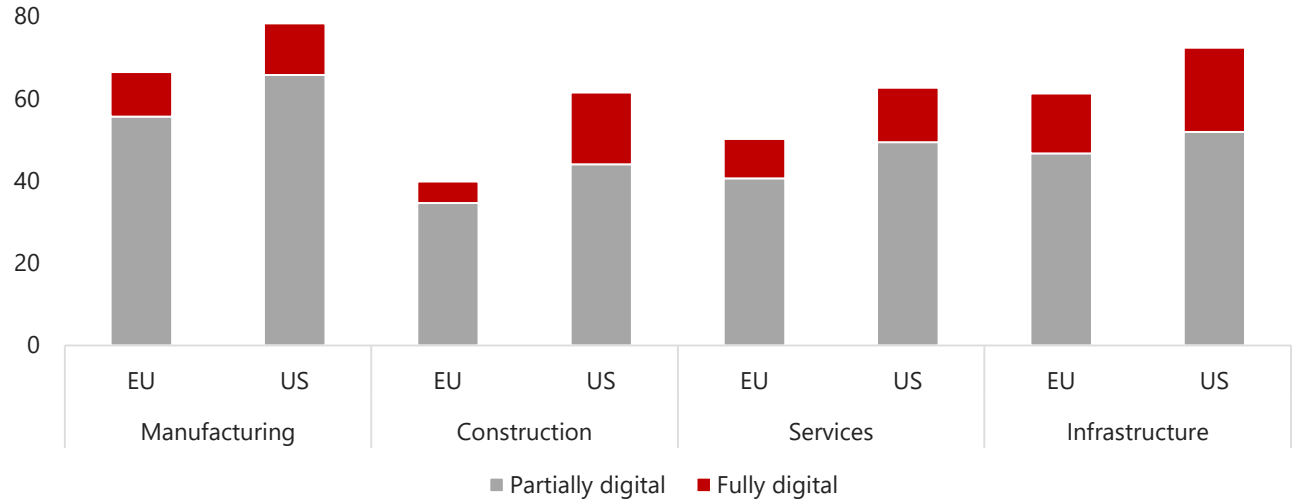
ADOPTION OF DIGITAL TECHNOLOGIES IN THE EU AND THE US

The global innovation landscape is changing rapidly due to the growing importance of digitalisation, intangible investment and the emergence of China. Many leading digital technology companies are based in the US or China. EU firms represent some 20% of the largest R&D companies but they feature less often among the top global tech firms, in areas such as consumer electronics, cybersecurity, digital infrastructure and services. This study shows that EU firms lag in adopting digital technologies, particularly in the construction sector and for "Internet of Things" (IoT) technologies. It also highlights that the adoption of digital technologies can lead to large boosts to productivity and disproportionate dividends in terms of competitiveness for early adopters.

Firms that have implemented digital technologies tend to perform better than non-digital firms. Digital firms have better management practices, are more innovative and productive, grow faster and create higher paying jobs. There are many old and small firms in the EU that do not invest in digital technologies. These firms are more likely to consider labour market regulations, business regulations and the lack of external finance as a major obstacle to investment, which may further exacerbate the delay in digital adoption rates. The barriers to reversing this trend are deep-rooted and thus require decisive policy action.

Digital adoption rates in the EU are lower than in the US. Only 66% of manufacturing firms in the EU, compared to 78% in the US, report having adopted at least one digital technology. The difference is particularly large in the construction sector, where the share of digital firms is 40% in the EU and 61% in the US. The difference in adoption rates between EU and US firms is 13 percentage points in services and 11 percentage points in the infrastructure sector. When focusing on the share of firms that have fully organised their business around at least one digital technology, the EU is lagging in particular in the construction sector (5% compared to 17% in the US) and the infrastructure sector (15% compared to 20% in the US).

Digital adoption in the EU and the US (in % of all firms)

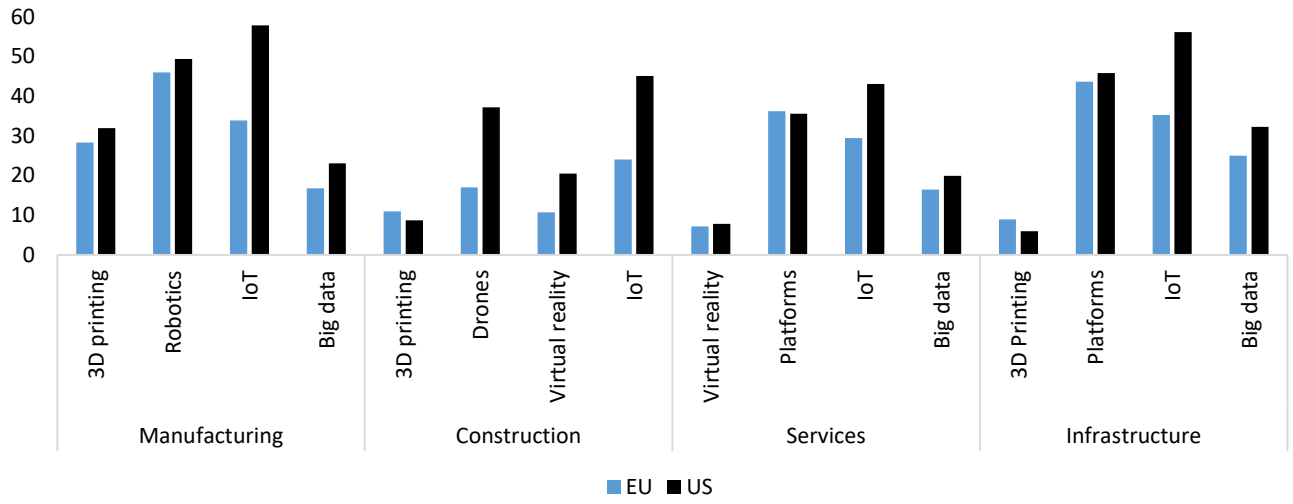


Source: EIBIS 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

ADOPTION OF DIGITAL TECHNOLOGIES IN THE EU AND THE US

EU firms have lower adoption rates of "Internet of Things" (IoT) than in the US. Using data on specific digital technologies in four different sectors suggests that the gap in adoption rates between the EU and the US is driven by the lower adoption rates of IoT technologies, i.e. electronic devices that communicate with each other without assistance. In addition, firms in the US construction sector employ drones more often that in the EU.

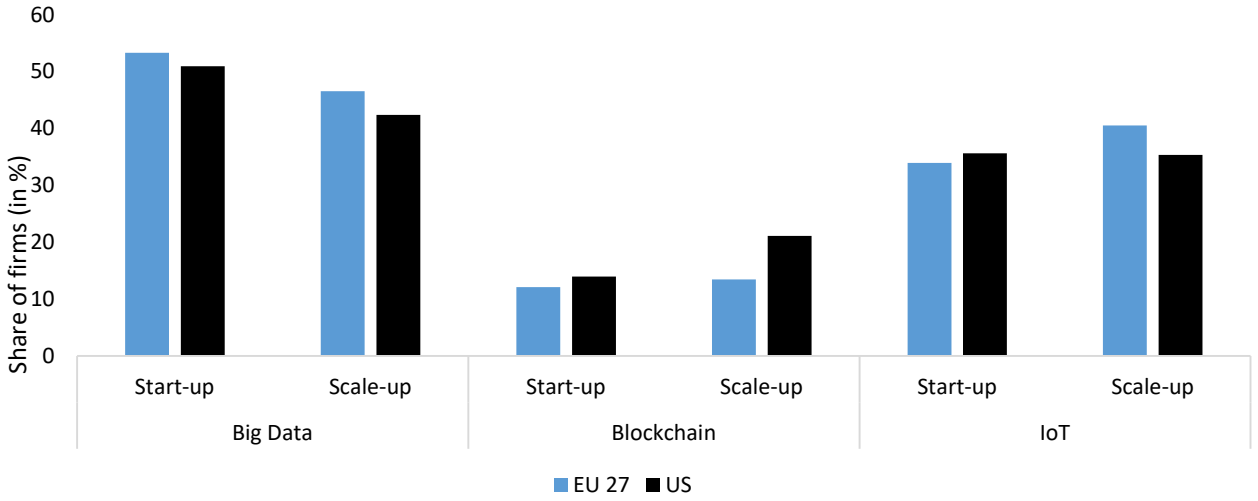
Adoption of different digital technologies (in % of all firms)



Source: EIBIS 2019. *Note:* Share of firms that have implemented (or organised their entire business around) each technology. Firms are weighted using value added. IoT: Internet of Things.

Digital adoption rates of EU start-ups and scale-ups are comparable to that in the US. Survey data on the use of digital technologies by start-ups and scale-ups in the EU and the US show that cognitive technologies (such as big data and Artificial Intelligence) and IoT applications are most frequently used. Blockchain technologies, by contrast, are less often implemented in the EU.

Adoption of different digital technologies (in % of all firms)**, by start-ups and scale-ups**

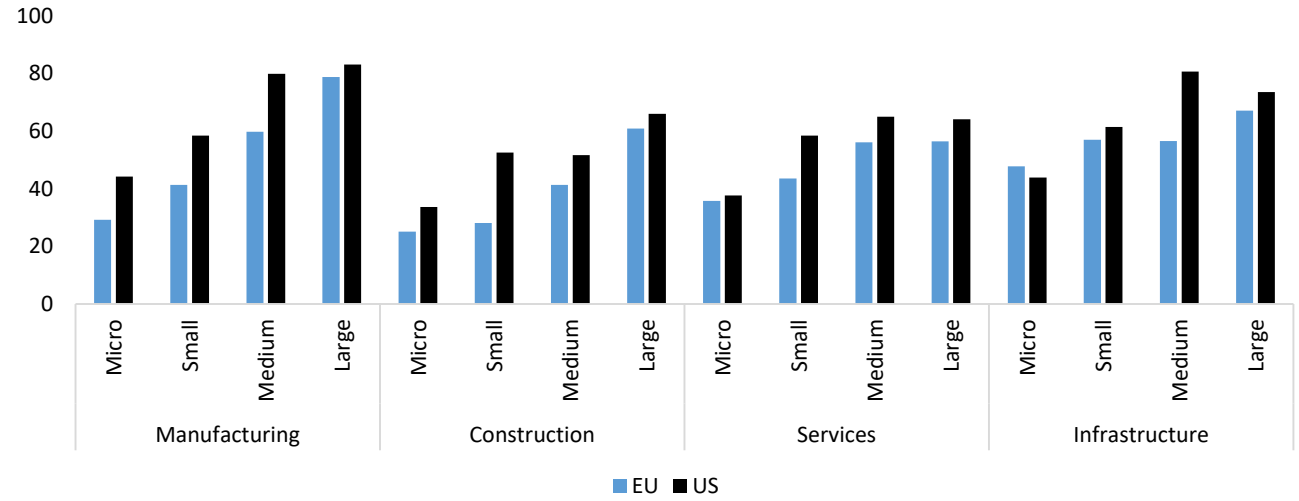


Source: EIBIS Start-up and Scale-up Survey 2019. *Note:* Share of firms that have implemented (or organised their entire business around) each technology. Firms are weighted using number of employees.

DIGITALISATION AND LABOUR MARKET DYNAMICS

Larger firms have higher rates of digital adoption than smaller firms. Both in the US and in the EU and across all four sectors, the adoption of digital technologies increases with firm size. This size effect is particularly pronounced among manufacturing firms: for example, only 30% of EU firms with fewer than 10 employees adopted digital technologies, whereas this share increases to 79% for firms with more than 250 employees. In addition, the difference in digital adoption between the EU and the US seems to be mainly driven by smaller firms.

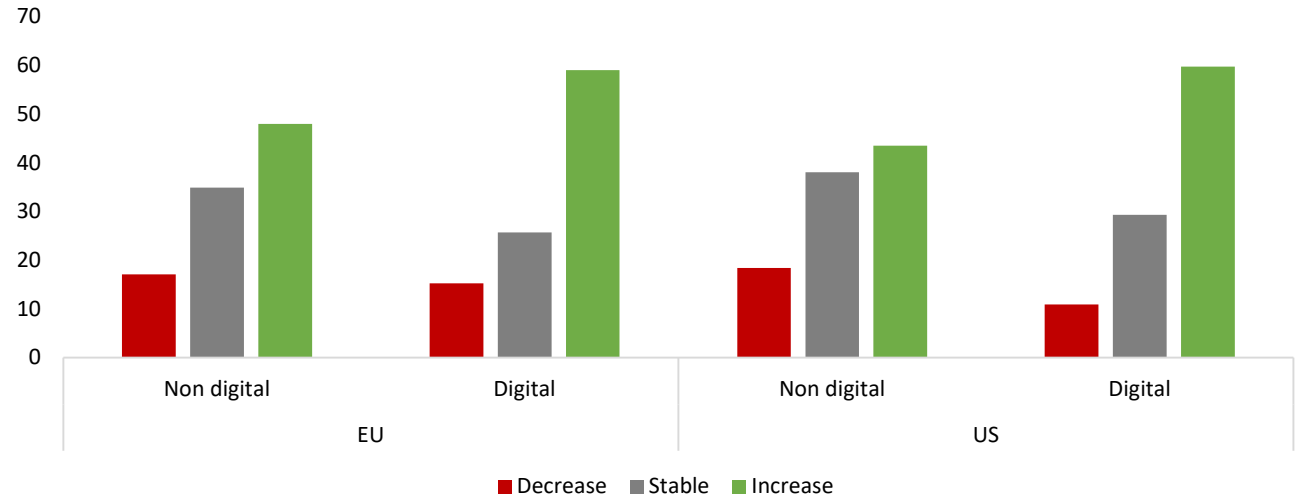
Digital adoption (in % of all firms)**, by firm size**



Source: EIBIS 2019. *Note:* Share of firms that have implemented (or organised their entire business around) at least one digital technology. Firms are weighted using value added.

Digital firms are more likely to grow. Digital firms are more likely to have hired new employees over the past three years, both in the EU and the US, while a higher share of non-digital firms have reduced employment size or remained stable.

Employment growth over the past three years (in % of all firms)**, digital intensity**

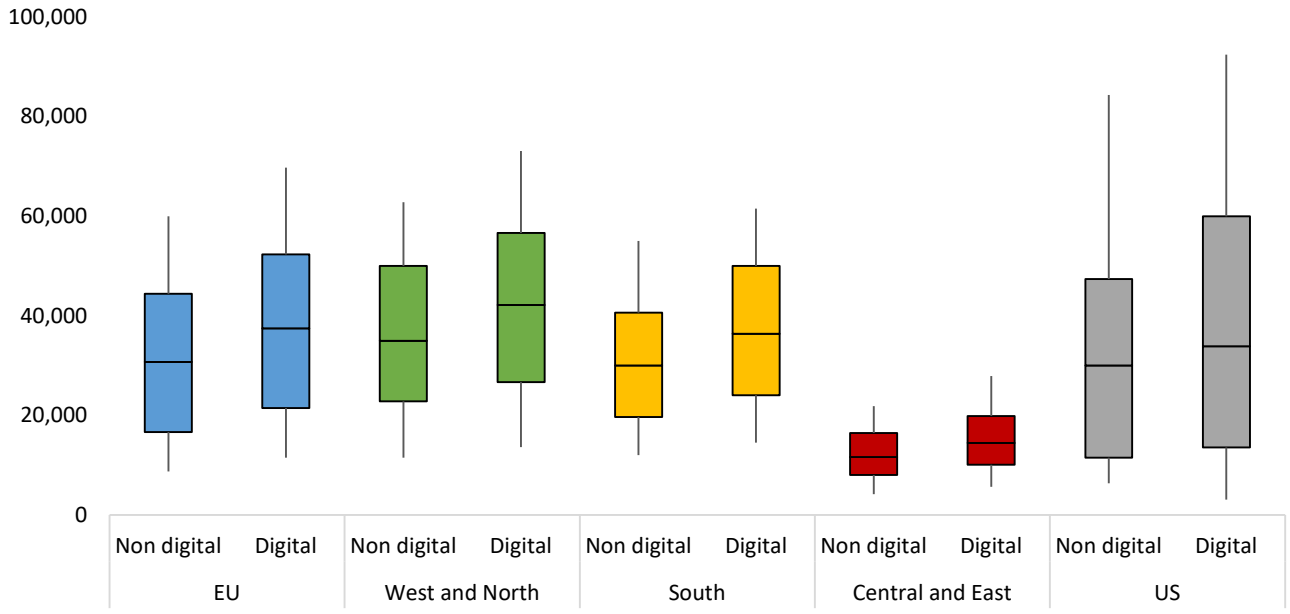


Source: EIBIS 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. Firms are weighted with value added.

DIGITALISATION AND LABOUR MARKET DYNAMICS

The higher demand for skilled staff is reflected in higher wages among digital firms. Many economists argue that digital technologies have an impact on employment, wages, the demand for skills, and job polarisation because of automation and skill-biased technological change. While digitalisation can transform the labour market, the jobs created by digital firms often appear to be relatively well paid. Average wages are lower in Central and Eastern Europe, compared to other regions in Europe or the US. In addition, the distribution of wages tends to be wider for digital firms, especially in the United States, which may support the evidence of wage polarisation in the labour market.

Distribution of average wage per employee (in EUR)**, by digital intensity**

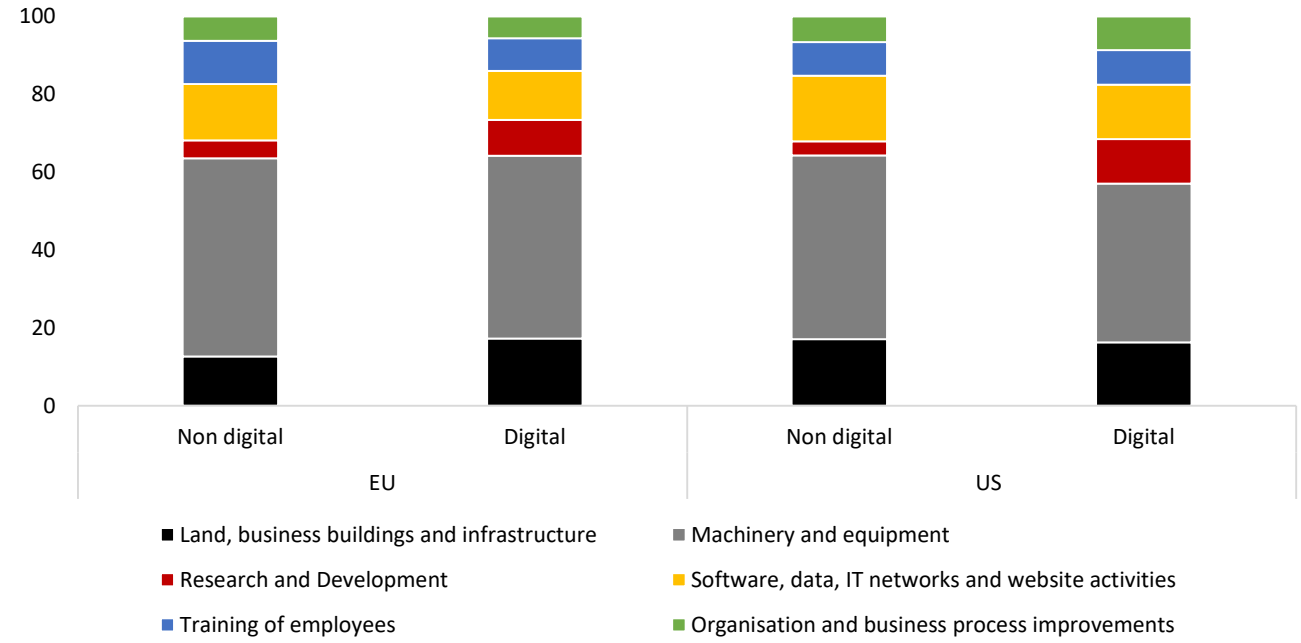


Source: EIBIS 2019. *Note:* Average wage per employee is defined as the wage bill divided by the number of employees. The figure shows the 10th, 25th, 50th, 75th and 90th percentiles of the distribution of labour productivity. West and North: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Luxembourg, the Netherlands and Sweden; South: Cyprus, Greece, Italy, Malta, Portugal and Spain; Central and East: Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. Firms are weighted with value added.

DIGITALISATION, INNOVATION AND PRODUCTIVITY

Digital firms tend to invest more in R&D. Firms that have implemented digital technologies tend to allocate a larger share of their investment activities to R&D and a smaller share towards machinery and equipment, both in the EU and the US. The stronger focus on R&D is particularly pronounced in the manufacturing sector. Perhaps surprisingly, digital firms (i.e. firms that have implemented at least one digital technology) do not allocate a higher share of investment to software, data, IT networks and website activities.

Composition of investment (in % of total investment)**, by digital intensity**

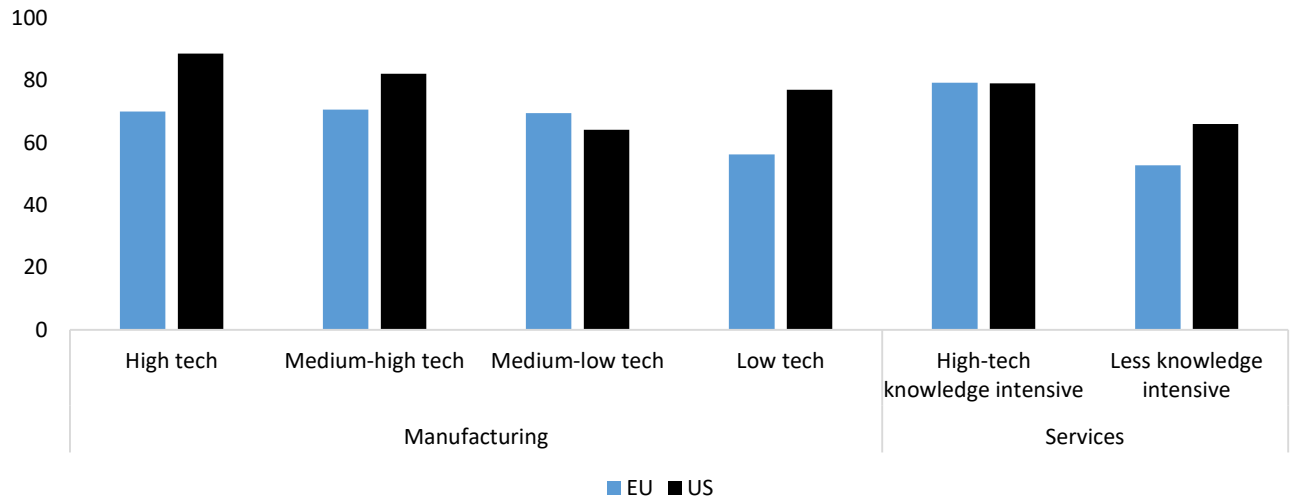


Source: EIBIS 2019. *Note:* Investment in different assets as a share of total investment. Firms are weighted with value added.

Firms in high value added activities are more likely to adopt digital technologies. The share of firms that have implemented technologies is higher in innovative sectors, such as high-tech intensity sectors in manufacturing – including pharmaceuticals and biotechnology or computer, electronic and optical products – and high-tech knowledge-intensive services. The EU specialises less in the new technology sectors, which may explain the gap between the EU and the US in creating new leading innovators in these sectors. This deficit has been associated with the lower average rates of return on R&D investment for EU firms than in the United States. This could be due to different business conditions, including access to finance and a regulatory environment that does not support young European firms undertaking risky and innovative investments. For instance, the venture capital market is smaller in Europe than in the US or Asia – where it has grown rapidly in recent years, especially in China.

DIGITALISATION, INNOVATION AND PRODUCTIVITY

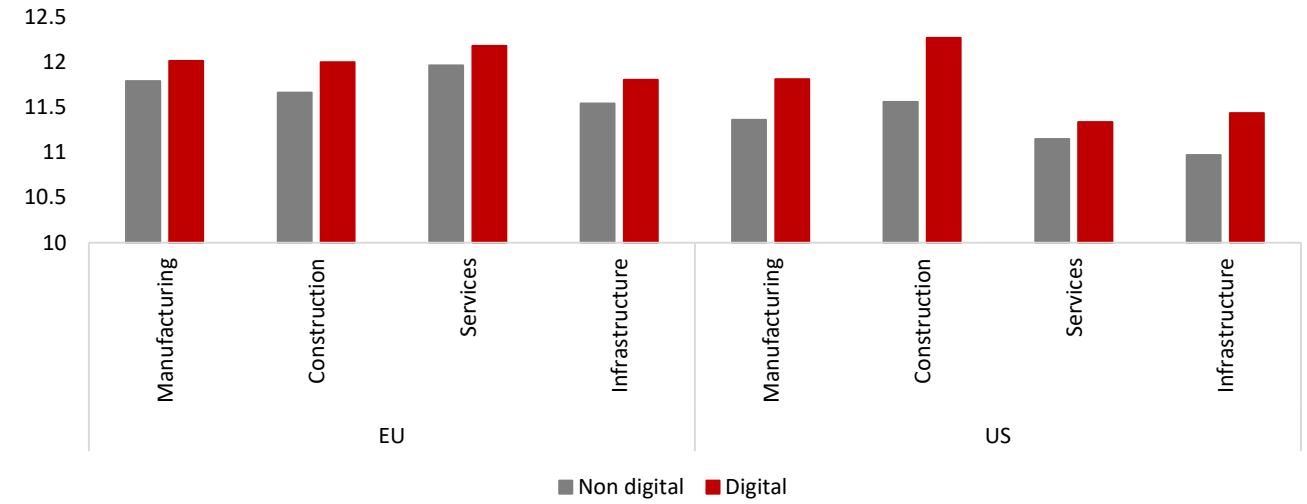
Digital adoption (in % of all firms)**, by technology intensity of the sector**



Source: EIBIS 2019. *Note:* Eurostat aggregation of industry according to the technological intensity based on NACE industry classification at two-digit level. Firms are weighted with value added.

Firms that have implemented at least one digital technology tend to be more productive. Digital firms have higher median labour productivity (turnover divided by the number of employees) than non-digital firms. This difference is particularly large in the US and is apparent in all sectors. There is thus a productivity premium associated with digitalisation.

Median labour productivity (in log)**, by digital intensity**

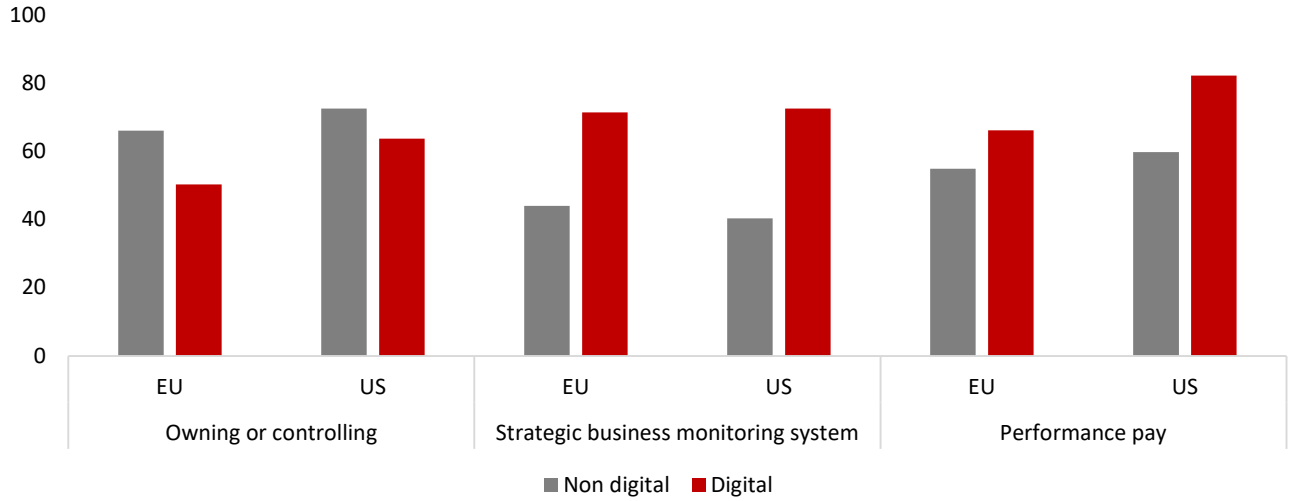


Source: EIBIS 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. Firms are weighted with value added.

DIGITALISATION, MANAGEMENT PRACTICES AND EXTERNAL FINANCE

Digital firms tend to have better management practices. Firm culture matters for the adoption of digital technologies. Digital firms more often report that they use a formal strategic business monitoring system than non-digital companies, both in the EU and the US. Digital companies also tend to reward individual performance more often with higher pay – this difference is larger in the US than in the EU. By contrast, digital firms are less often owned or controlled by their chief executive (or family members of the chief executive) than non-digital firms.

Management practices (in % of all firms)**, by digital intensity**

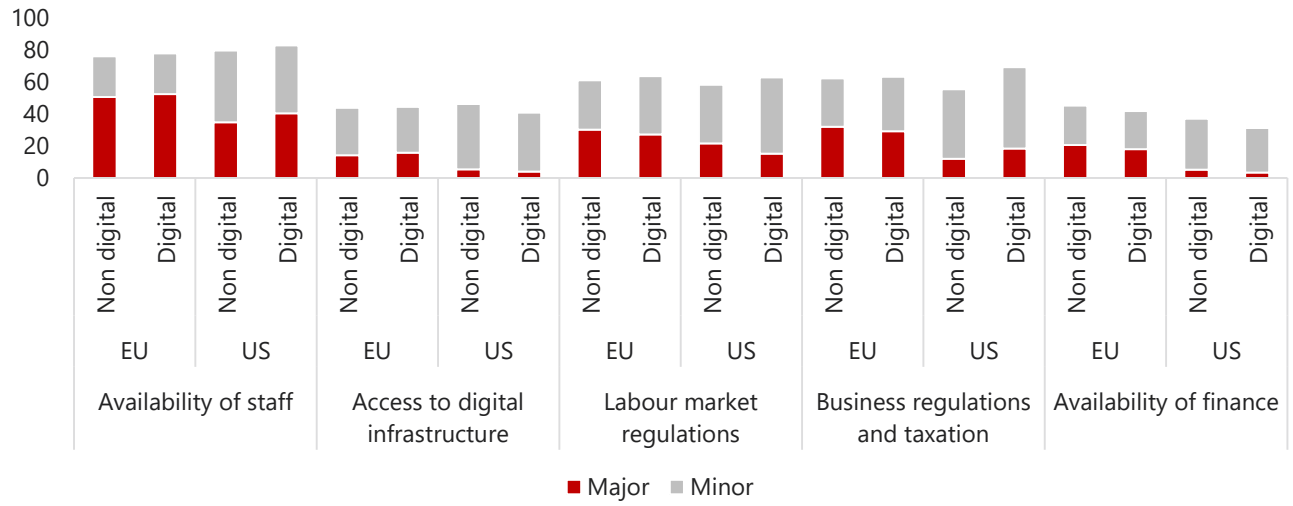


Source: EIBIS 2019. *Note:* Firms are weighted with value added.

Labour market regulations, business regulations and the lack of availability of staff with the right skills can be a barrier to the adoption of digital technologies in the EU. Non-digital firms in the EU are more likely than digital firms to report that these issues are major obstacles to investment activities, including investment in adopting digital technologies. At the same time, digital firms are more likely to report that the lack of availability of staff with the right skills and access to digital infrastructure constrain investment activities: this may be due to the higher demand for staff with specific skills by digital firms and the fact they need to rely more on high-quality digital infrastructure. Compared to the US, firms in the EU report more often that all of the five obstacles affect their investment activities in a major way, which may further exacerbate the delay in digital adoption rates.

DIGITALISATION, MANAGEMENT PRACTICES AND EXTERNAL FINANCE

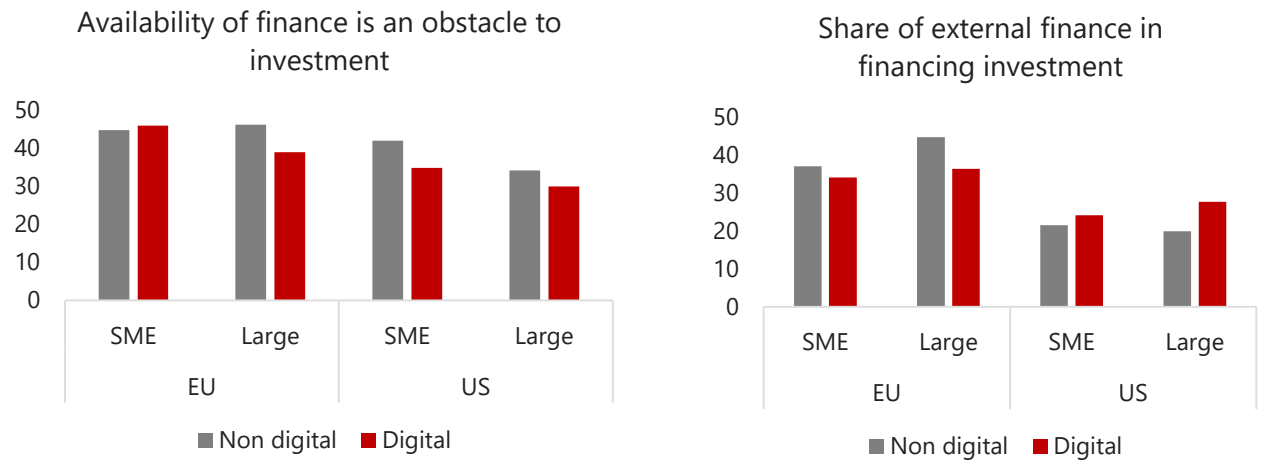
Obstacles to investment (in % of all firms)**, by digital intensity**



Source: EIBIS 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. Firms are weighted with value added.

Lack of access to finance can be a barrier to the adoption of digital technologies in the EU, especially for SMEs. While most digital firms are less likely to report that the limited availability of finance is an obstacle to investment activities, lack of access to finance tends to be a stronger barrier for small digital firms in the EU. This is also reflected in the share of external finance used to finance investment in the previous financial year, as EU digital firms tend to rely more on internal funds (e.g. cash or profits). This tends to be different in the US. Overall, US firms tend to rely less on external finance than EU firms. However, US digital firms rely more on external finance and are less likely to complain about the availability of finance than US non-digital firms. Access to growth capital may be one reason why small digital firms in the EU tend to rely less on external finance than non-digital firms.

Share of firms that report the limited availability of finance as an obstacle to investment (in %) **and share of external finance in financing investment** (in %)**, by digital intensity**

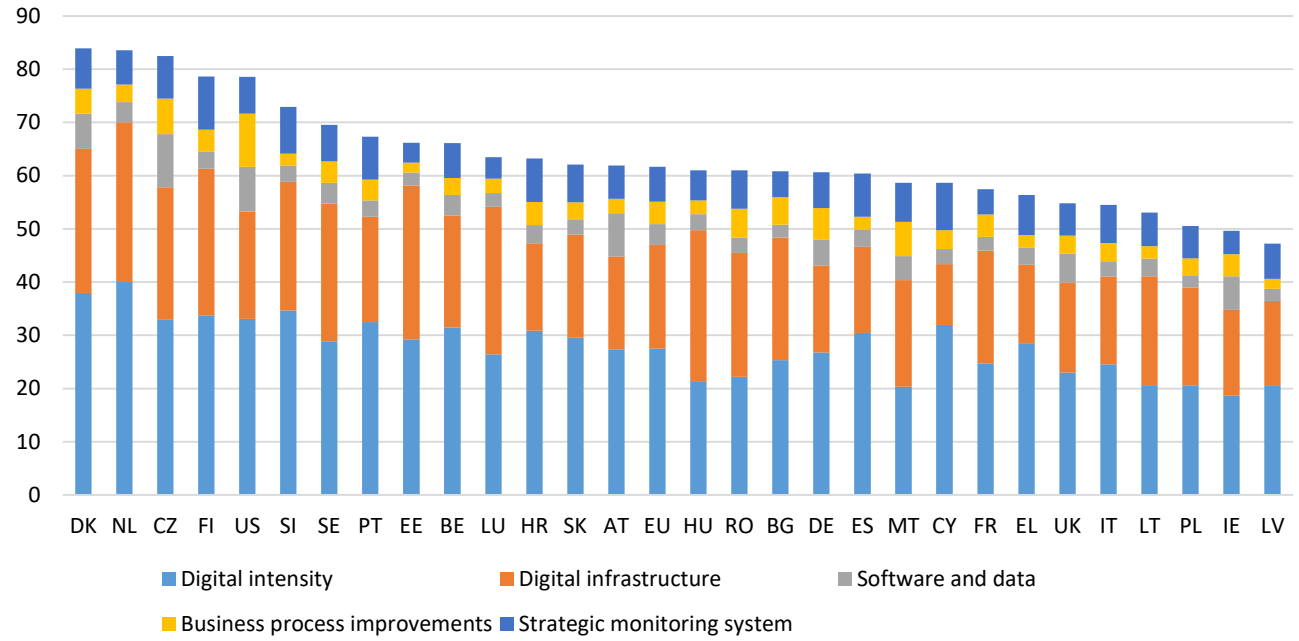


Source: EIBIS 2019. *Note:* Firms are weighted with value added.

THE EIBIS DIGITALISATION INDEX

The EIBIS Digitalisation Index is a composed index that summarises indicators on firms' digital technology adoption as well as firms' assessment of digital infrastructure and investments. It is based on firm level data collected by the European Investment Bank Investment Survey in 2019**.** The EIBIS Digitalisation Index consists of five components: digital intensity, digital infrastructure, investment in software and data, investments in organisational and business process improvements, and strategic monitoring system. The Appendix contains more details on how the index has been constructed.

EIBIS Digitalisation Index



The key observations of the EIBIS Digitalisation Index are:

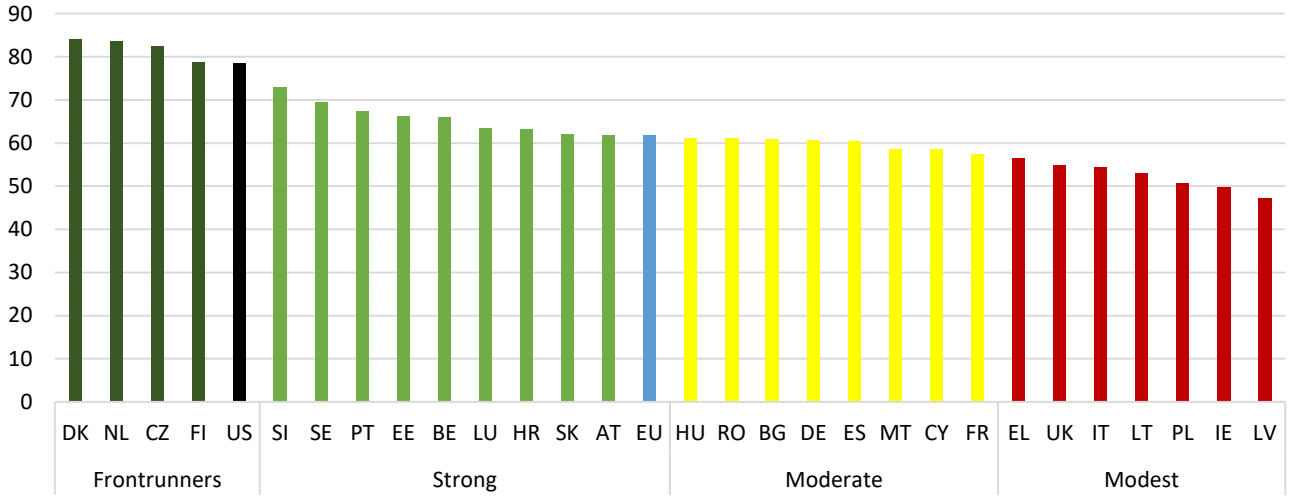
- **The EU falls short of the US.** On average, European firms are less often fully digital, and are lacking in particular in the construction sector, dragging down the digital intensity score. What is more, US firms invest a higher share in business process improvements than their EU counterparts. By contrast, firms in the EU and the US perceive digital infrastructure similarly.

- **The best performing EU countries**, in selected areas of digitalisation, are: the Netherlands – Digital Intensity, as well as digital infrastructure; the Czech Republic – Investments in software and data as well as in organisation and business process improvements; Finland – Formal strategic business monitoring system.

THE EIBIS DIGITALISATION INDEX

The EIBIS Digitalisation Index allows us to group countries according to firms' assessment of digitalisation. EU countries fall into four digitalisation groups, based on the Digitalisation Index score: Frontrunners, strong, moderate and modest. Denmark is the 2019/2020 digitalisation frontrunner, followed by the Netherlands, the Czech Republic and Finland. Those countries rank even above the United States.

EIBIS Digitalisation Index



The EIBIS Digitalisation Index differs from the Digitalisation Economy and Society Index (DESI), developed by the European Commission:

- The EIBIS Digitalisation Index is based on firms' assessment of digitalisation.
- DESI captures firms' digitalisation and e-commerce use but relies on other technologies than the EIBIS Digitalisation Index. The latter captures more recent digital developments.
- The EIBIS Digitalisation Index captures how often firms see digital infrastructure as an obstacle to their investment activities, whereas DESI captures connectivity by broadband market developments in the EU.
- The EIBIS Digitalisation Index does not capture Human Capital and Digital Public Services, in contrast to DESI. However, the EIBIS Digitalisation Index captures whether firms have strategic business monitoring systems in place, an indicator for management practice.
- As EIBIS is a survey dedicated to firms, it is unable to capture citizens' use of internet services and online transactions, which are part of DESI.

POLICY IMPLICATIONS

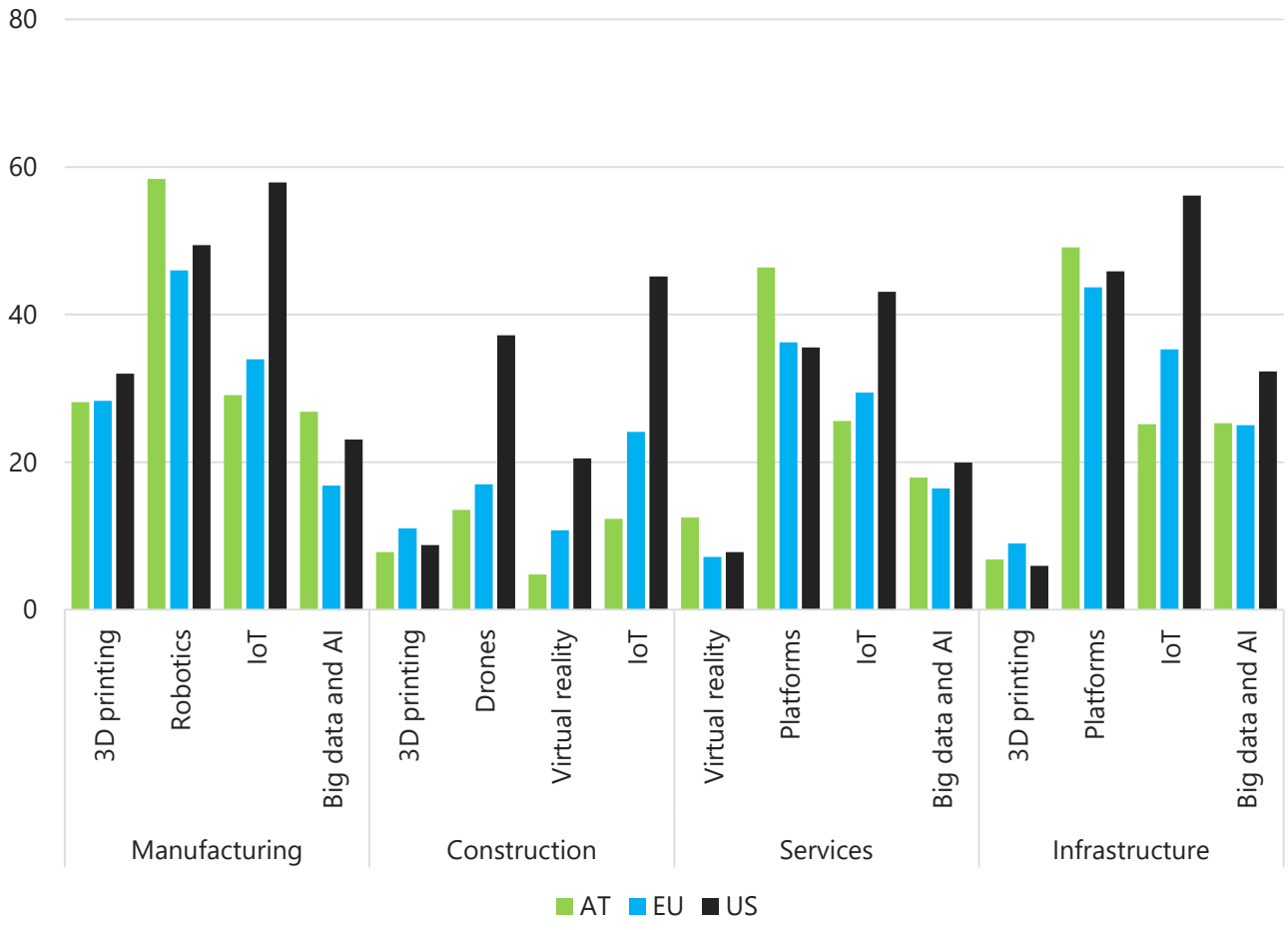
To catch up with its peers, the EU will need to create better framework conditions to support innovation and digitalisation. Policy action should develop measures to fast-track the adoption of better management practices, improve the skills of workers through training and make it easier to finance investments in intangibles and digital technologies. The fact that EU firms are on average smaller than in the US is thus likely to be a major disadvantage for fast-tracking the adoption of digital technologies. There are many old and small firms in the EU that are not investing in digital technologies. Those firms are more likely to report less advanced management skills and more likely to consider the limited availability of finance as a major obstacle to investment, which may further exacerbate the delay in adoption rates. This suggests that policymakers should put more efforts into measures to remove disincentives to grow and reduce market fragmentation, in particular in the service sector – where the EU is still far from a single market.

Strong barriers to investment for new innovative market entrants in the EU and less dynamism as a result of lower rates of failure could cause a systemic innovation deficit for Europe, especially in the fast-growing technological and digital sectors. The EU needs to generate more new leaders in these sectors and give incentives to leading companies to continuously reinvent themselves so that they help push the technological and digital frontiers. It is also critical to support fast-growing small and young innovative firms and frontload investment in digitalisation, to balance network effects and winner-takes-all dynamics. This calls for improvements to the functioning of product and labour markets and the implementation of the digital single market in the EU.

ADOPTION OF DIGITAL TECHNOLOGIES – AUSTRIA

- Austria ranks among the *strong* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above the EU and US average for robotics and platforms.
- Digital adoption rates are above the EU average for the manufacturing and services sectors but behind the US average for all sectors.
- More than 60% of digital firms report having increased the number of employees in the last three years, compared to almost 46% of non-digital firms.
- Median wage per employee is 1.4 times higher for digital than non-digital firms.
- Among the reported obstacles to investment, 'lack availability of staff' is the most cited, followed by 'business regulations and taxation' and 'labour market regulations'.

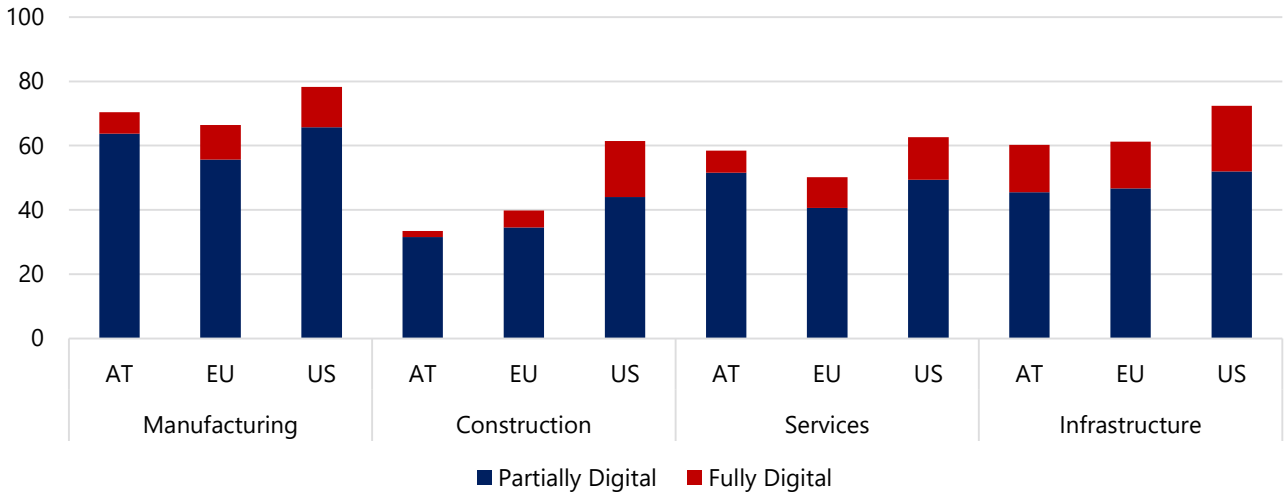
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

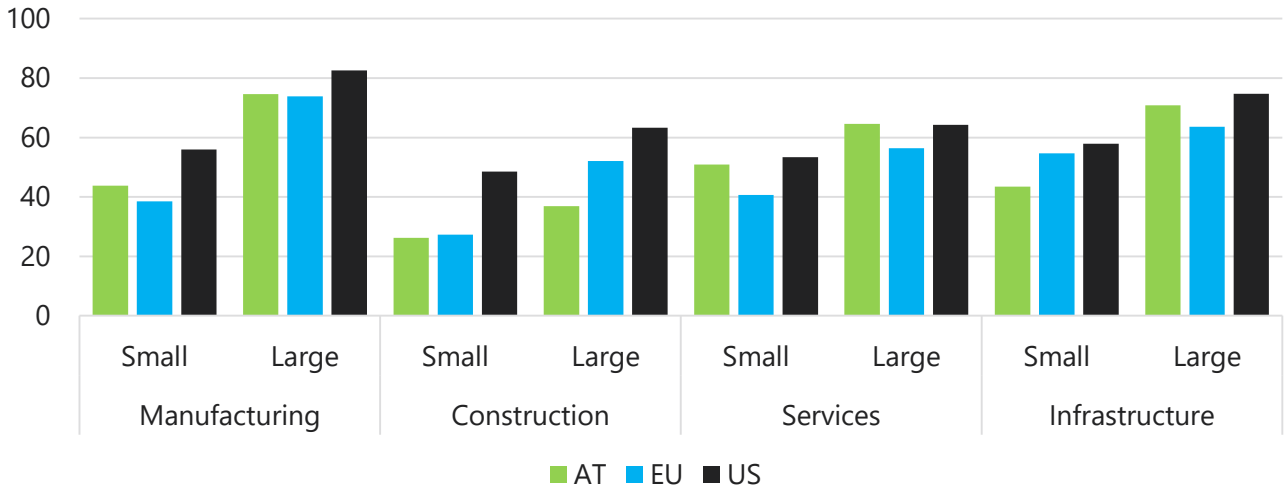
ADOPTION OF DIGITAL TECHNOLOGIES – AUSTRIA

Digital adoption rates (in % of all firms), by sector



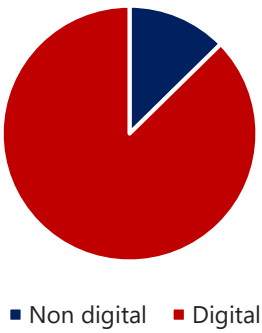
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

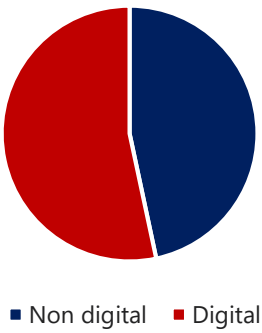


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



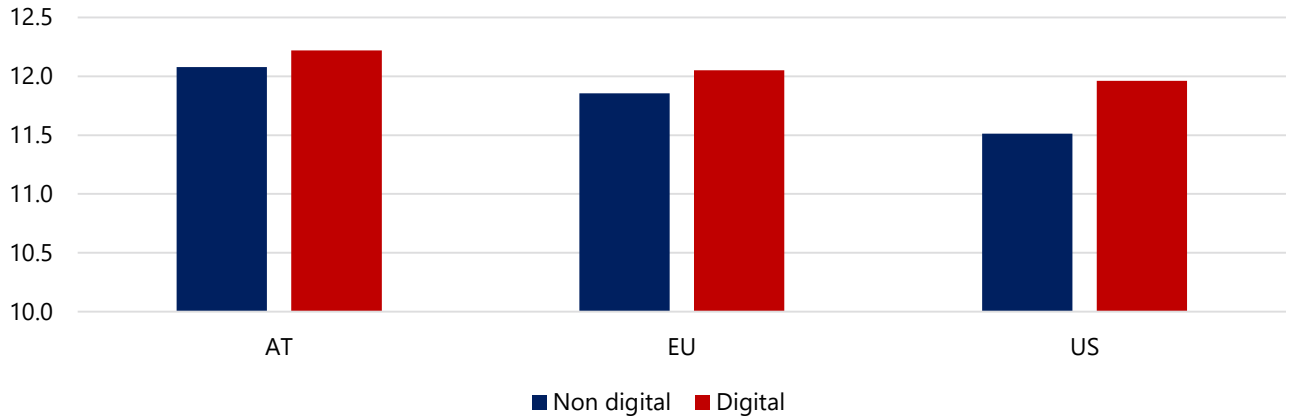
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

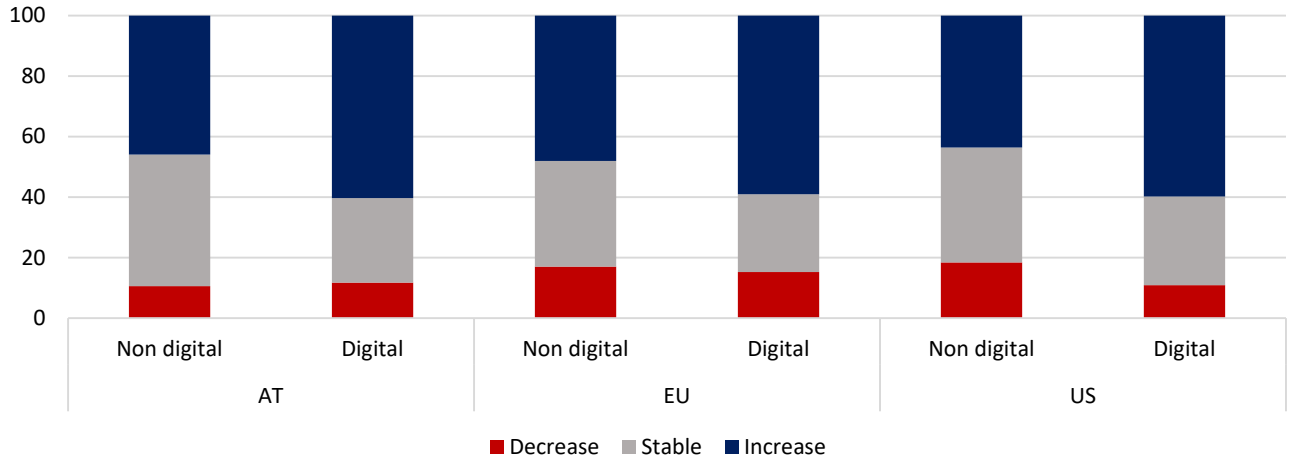
ADOPTION OF DIGITAL TECHNOLOGIES – AUSTRIA

Median labour productivity (in logarithm)



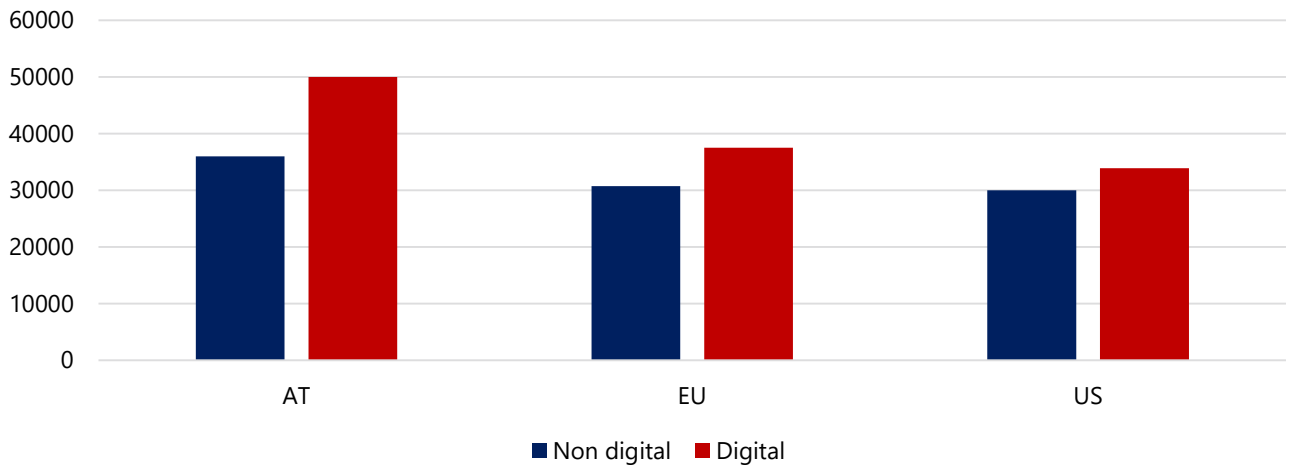
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

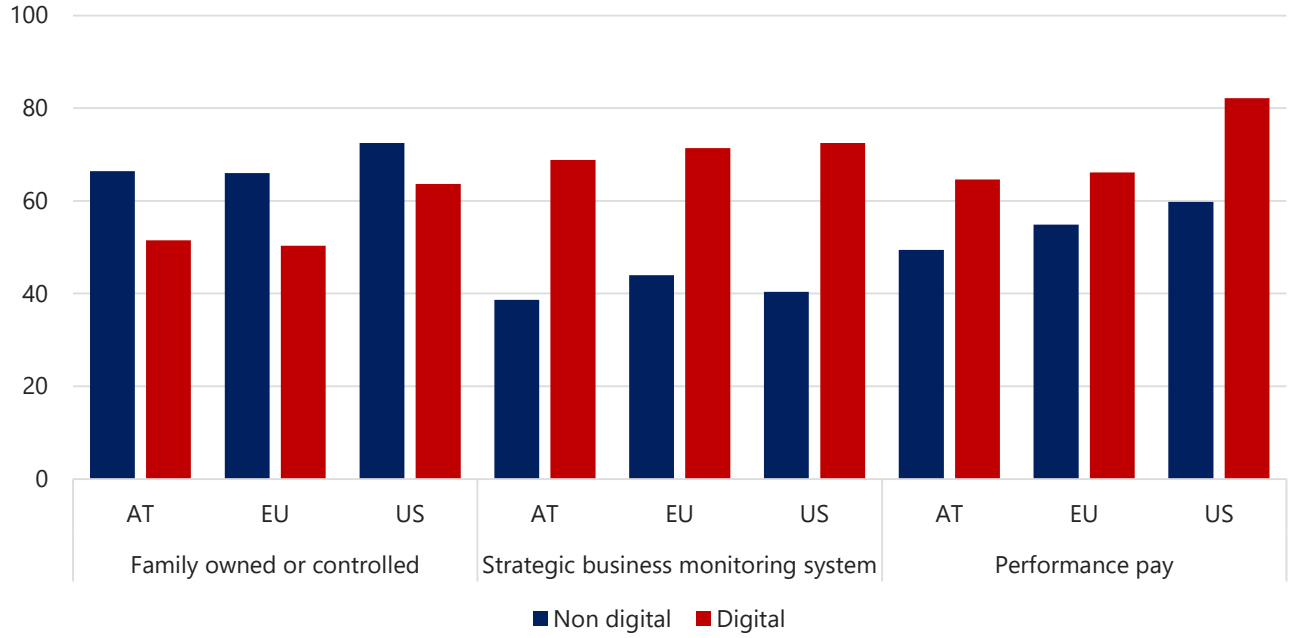
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

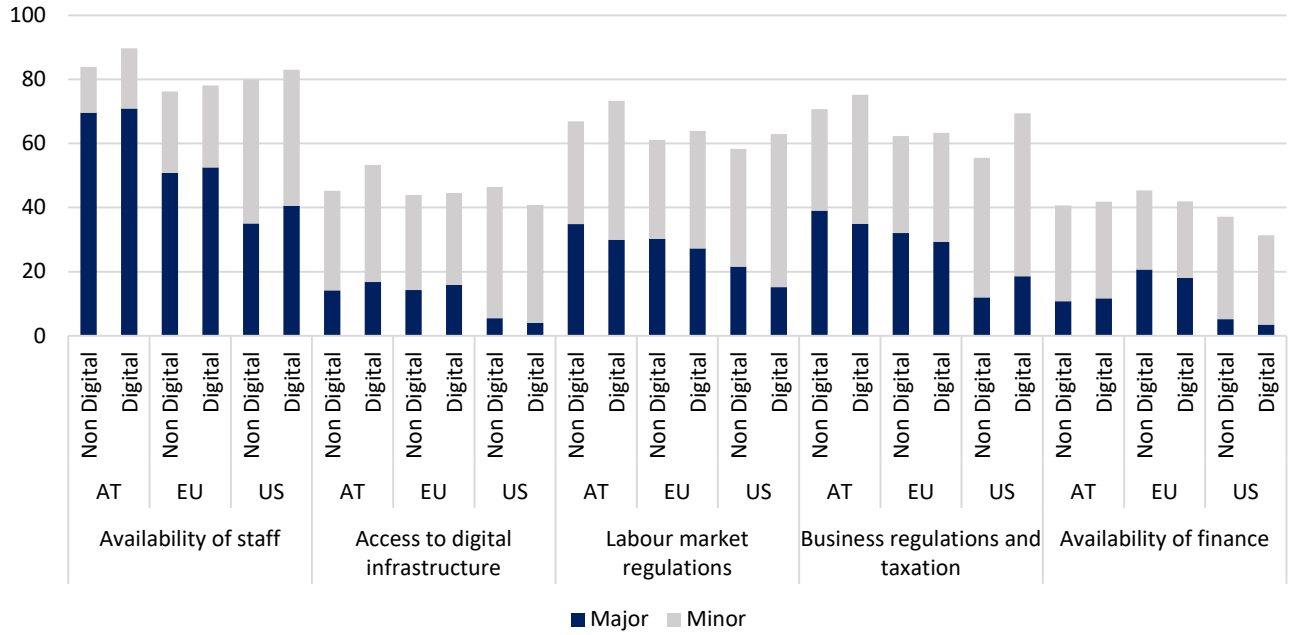
ADOPTION OF DIGITAL TECHNOLOGIES – AUSTRIA

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

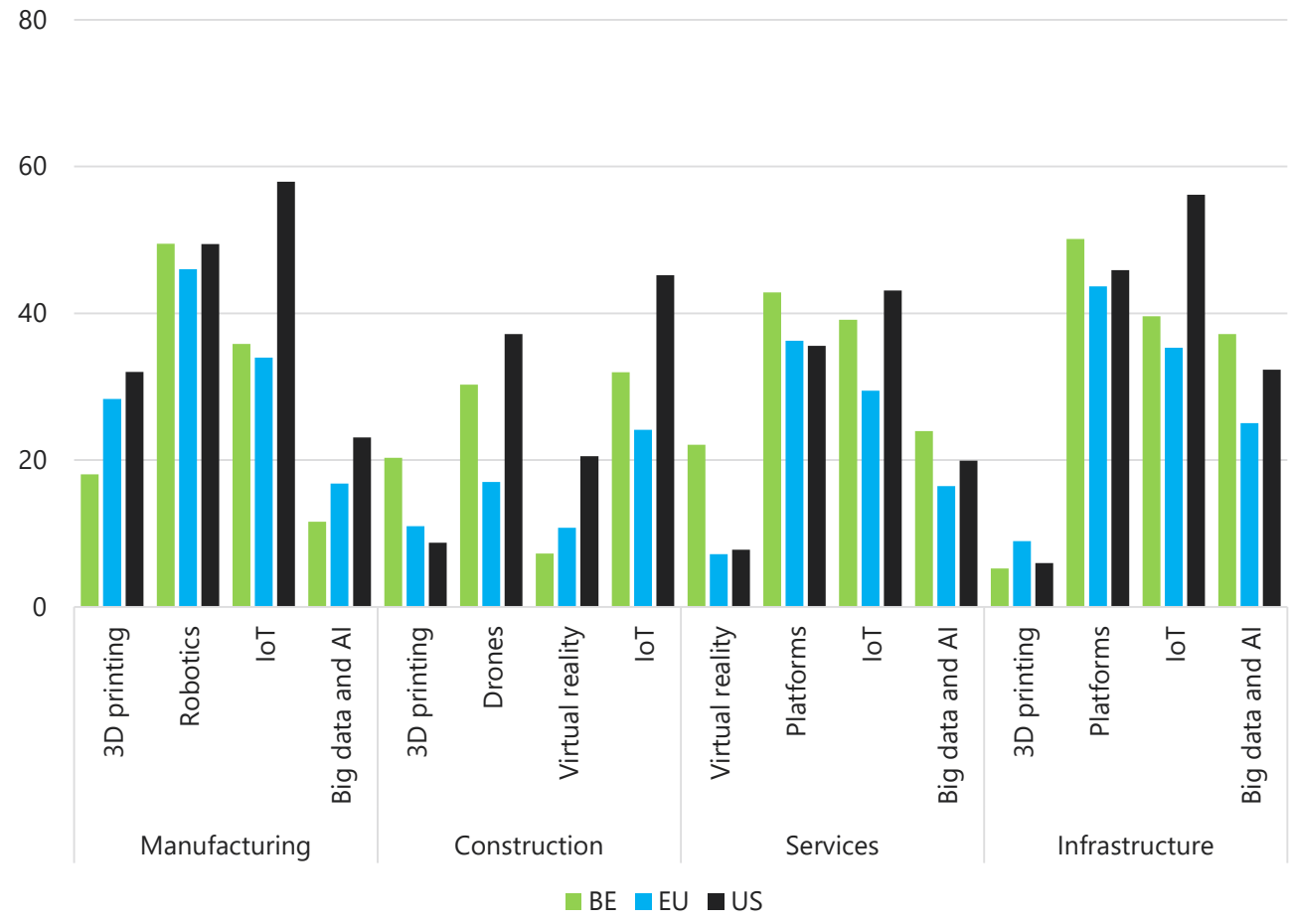


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – BELGIUM

- Belgium ranks among the *strong* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above both the EU and the US average for 3D printing in the construction sector, virtual reality in services sector, and platforms.
- Digital adoption rates in Belgium are above the EU average for all sectors but behind the US average.
- Median labour productivity is above the EU and the US average for both digital and non-digital firms.
- Median wage per employee is almost equal between digital and non-digital firms in Belgium, but above the EU and the US average.
- Among the reported obstacles to investment, 'lack of availability of staff' is the most cited, followed by 'business regulations and taxation' and 'labour market regulations'.

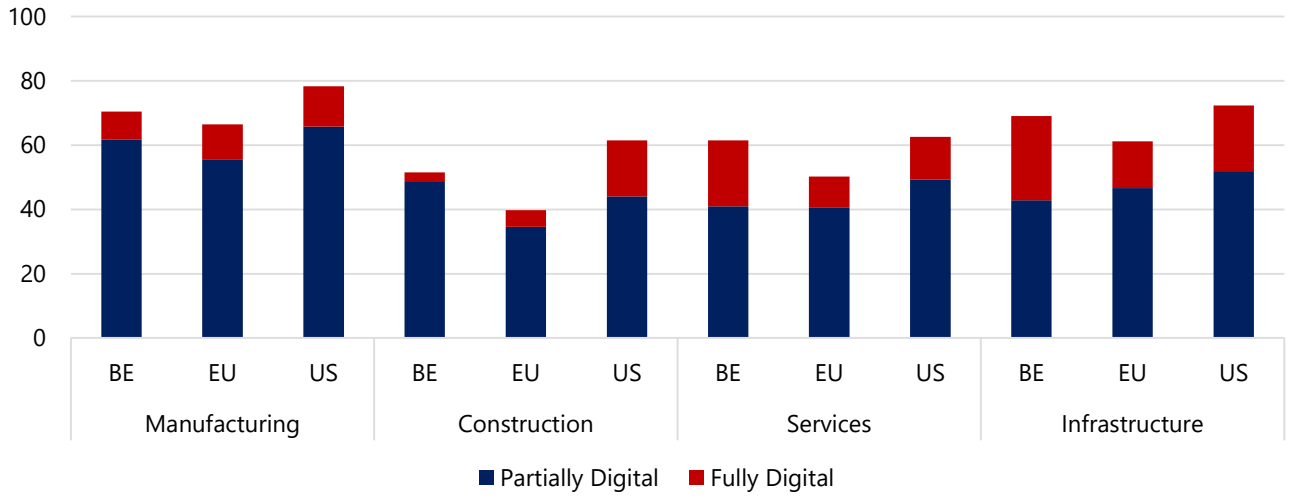
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

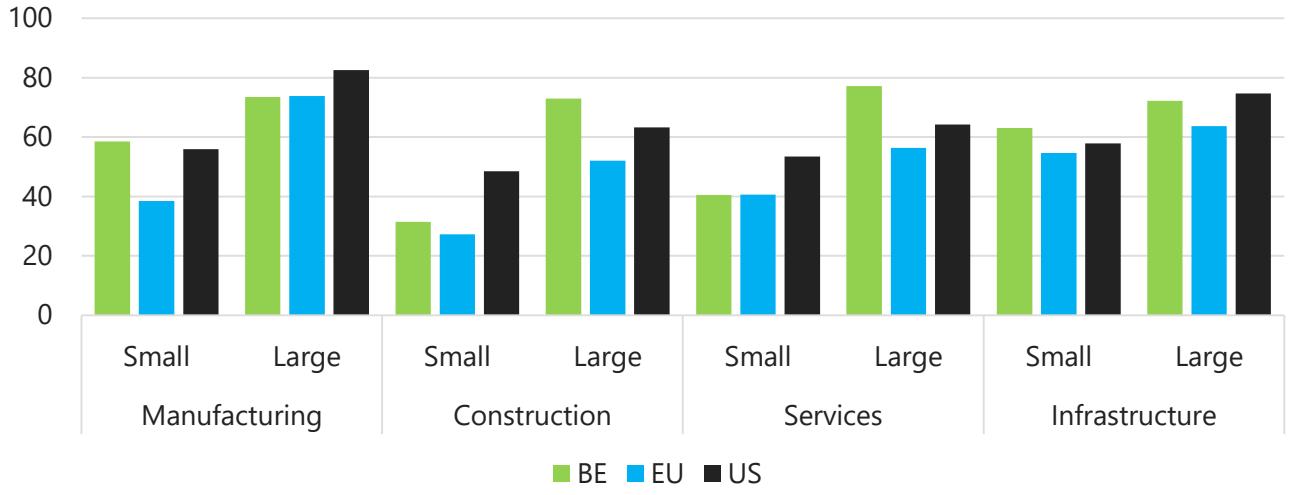
ADOPTION OF DIGITAL TECHNOLOGIES – BELGIUM

Digital adoption rates (in % of all firms), by sector



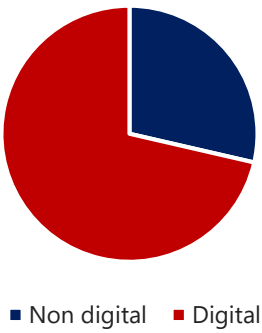
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

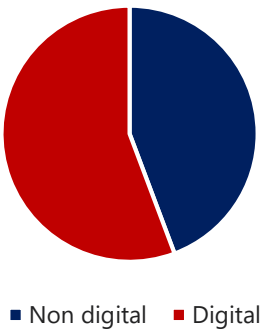


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



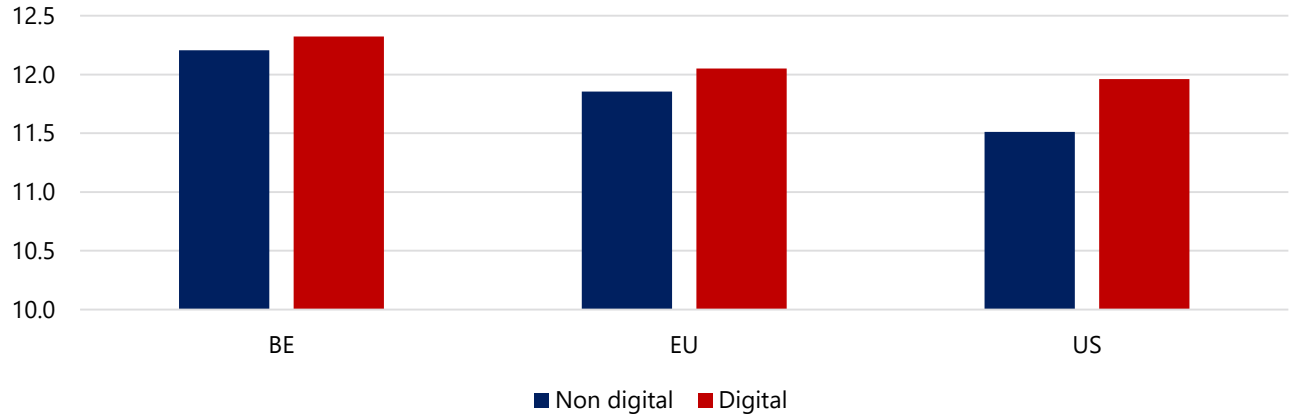
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

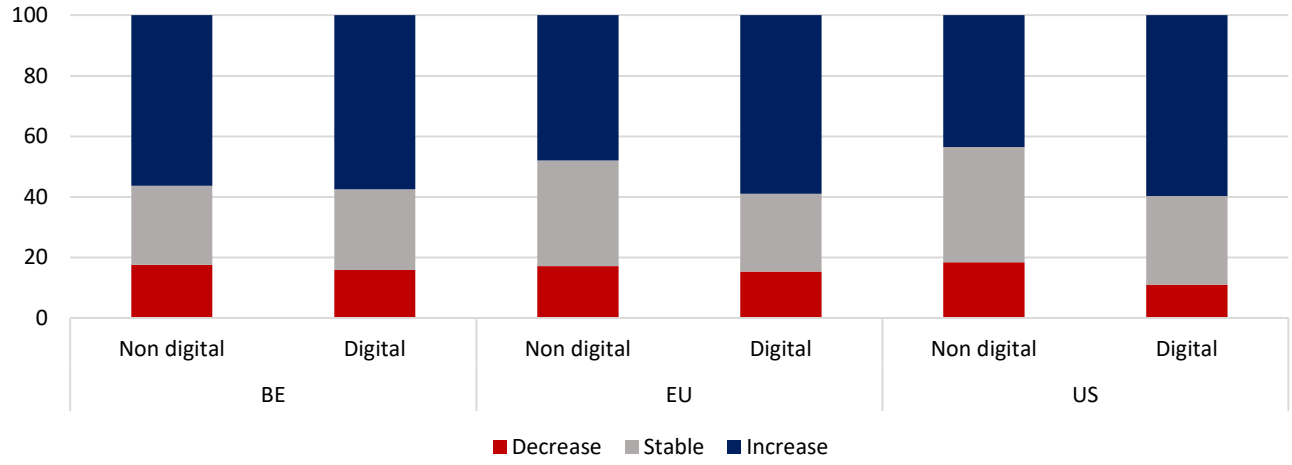
ADOPTION OF DIGITAL TECHNOLOGIES – BELGIUM

Median labour productivity (in logarithm)



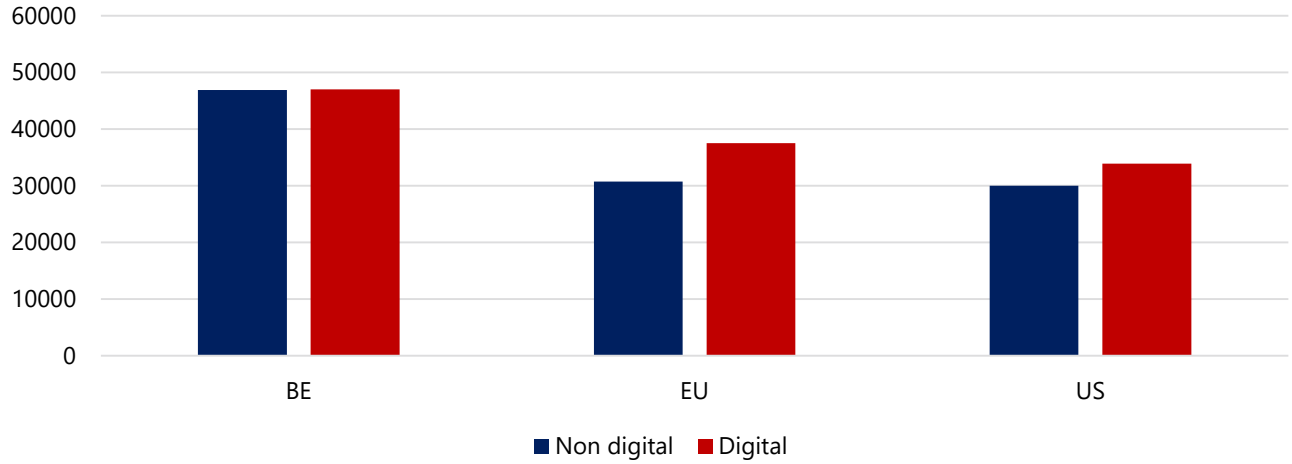
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

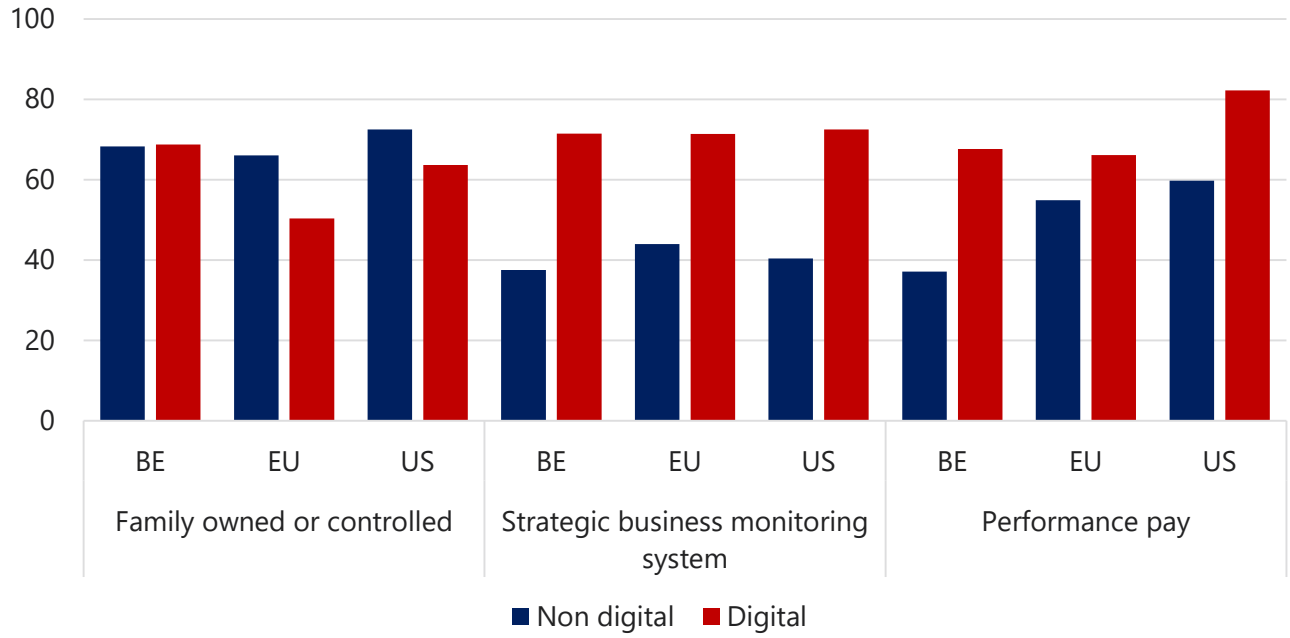
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

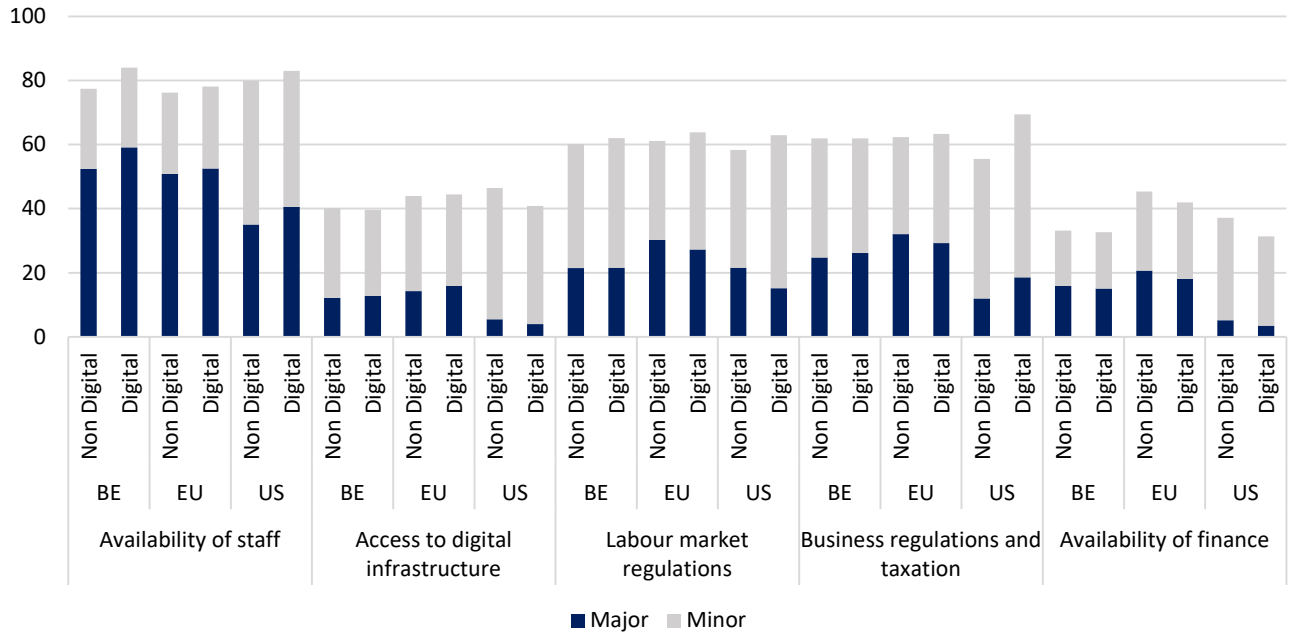
ADOPTION OF DIGITAL TECHNOLOGIES – BELGIUM

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

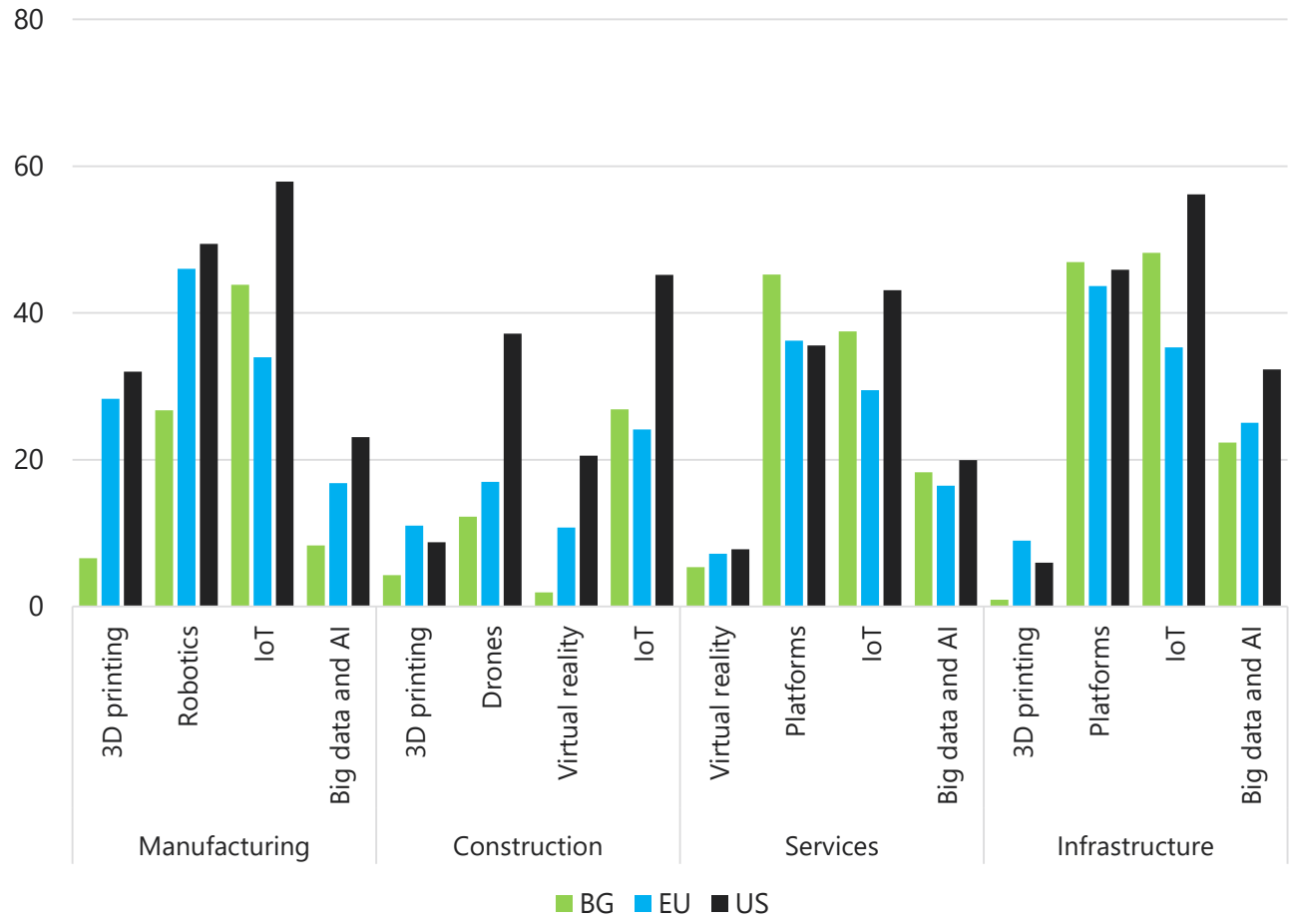


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – BULGARIA

- Bulgaria ranks among the *moderate* countries on the EIBIS Digitalisation Index.
- The adoption rate of IoT and platforms is above the EU average.
- Digital adoption rates in Bulgaria are above the EU average and on par with the US in the services and infrastructure sectors. They are below both EU and US average in manufacturing and construction sectors.
- More than 50% of digital firms report having increased the number of employees in the last three years, compared to slightly more than 40% of non-digital firms.
- Median wage per employee and median labour productivity are far below the EU and the US average.
- Among the reported obstacles to investment, 'lack of availability of staff' is the most cited, followed by 'business regulations and taxation' and 'labour market regulations'.

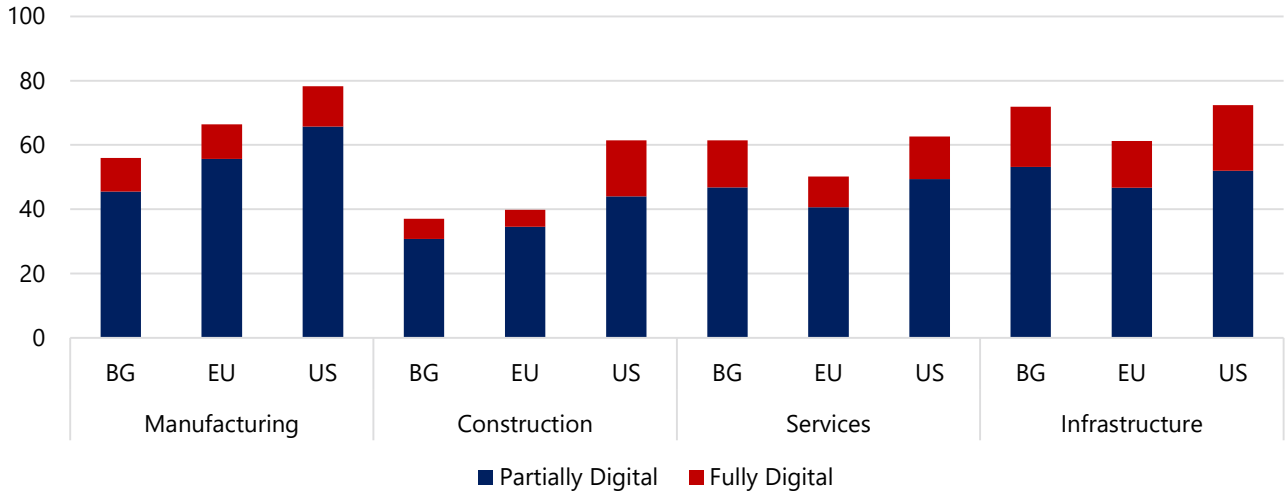
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

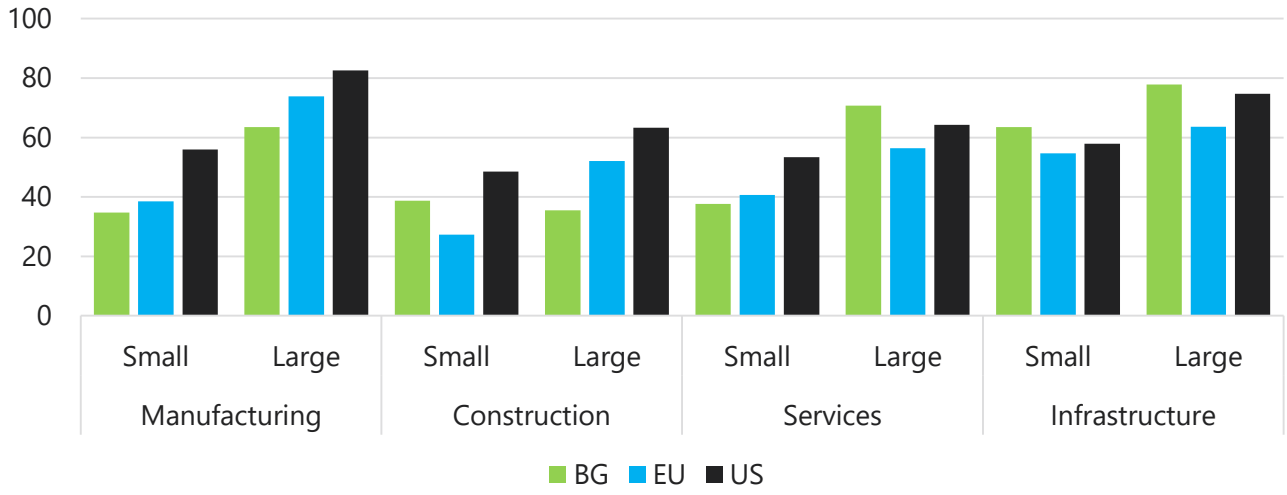
ADOPTION OF DIGITAL TECHNOLOGIES – BULGARIA

Digital adoption rates (in % of all firms), by sector



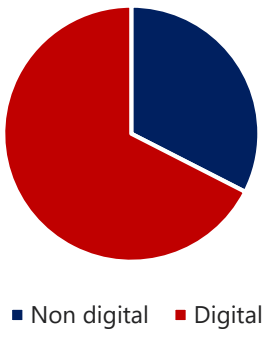
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

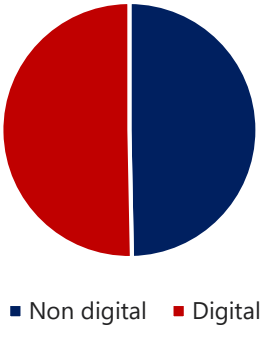


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



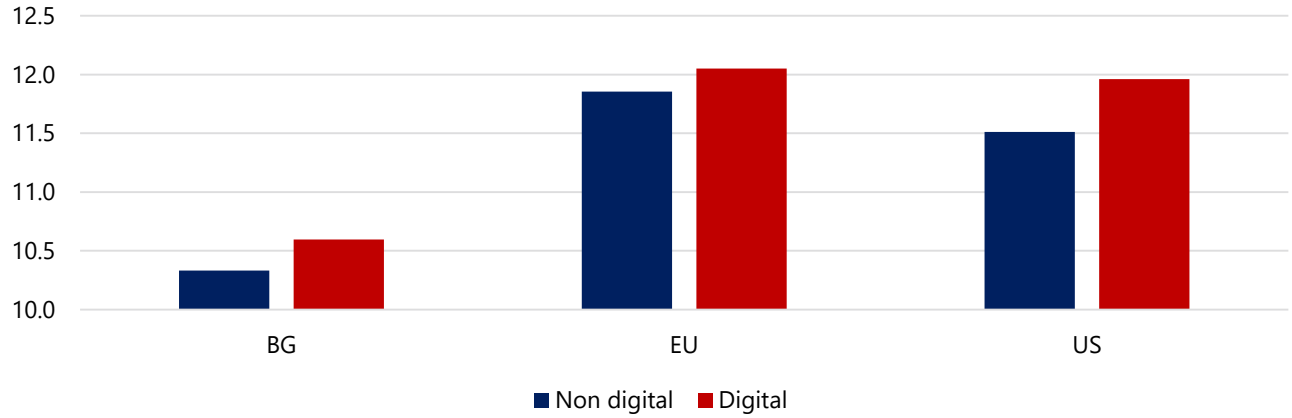
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

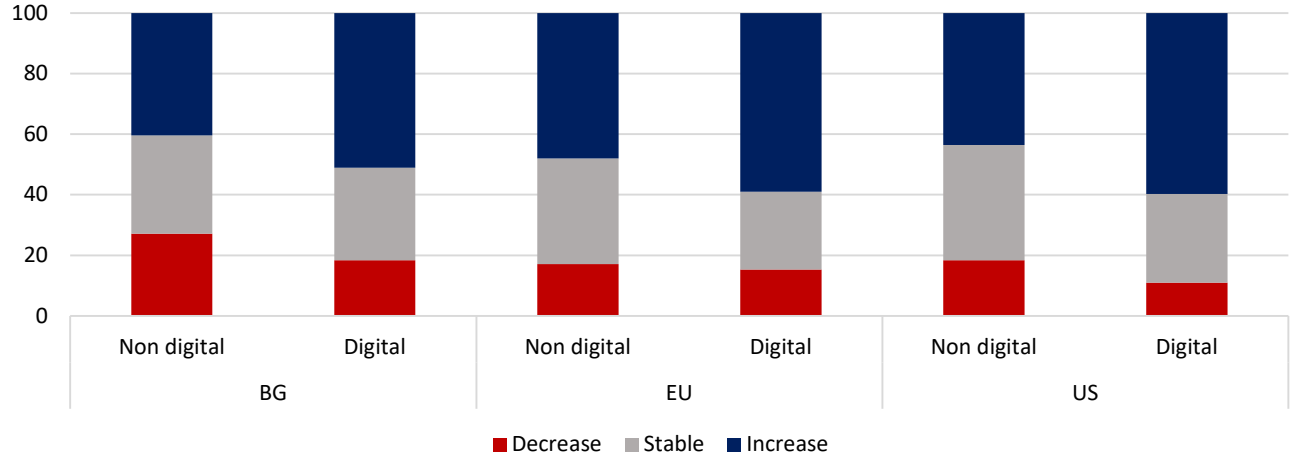
ADOPTION OF DIGITAL TECHNOLOGIES – BULGARIA

Median labour productivity (in logarithm)



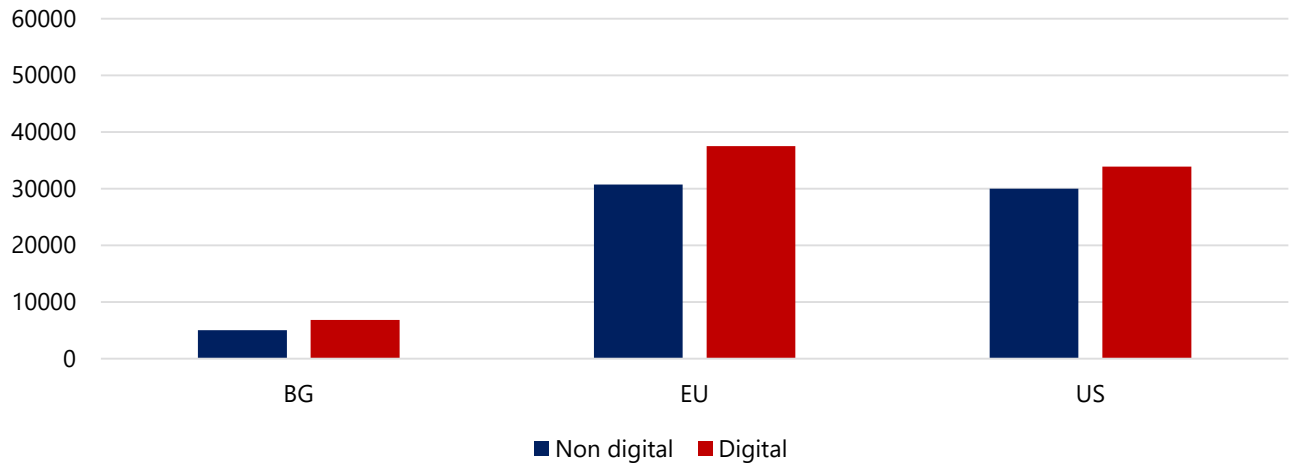
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

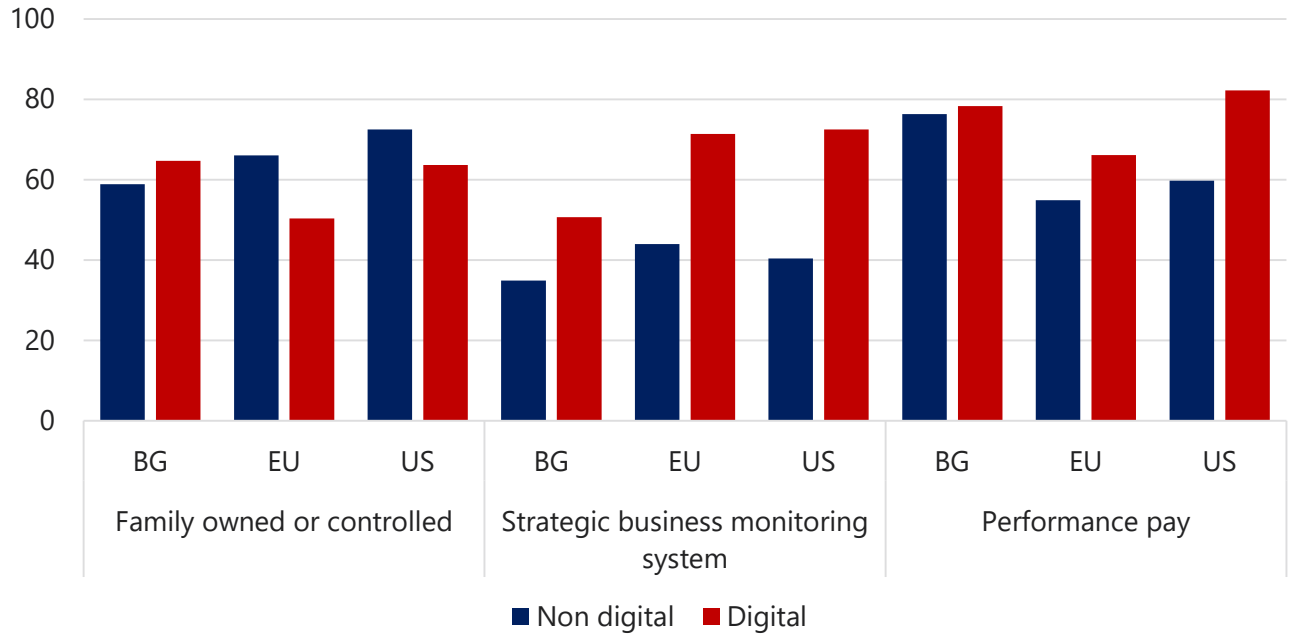
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

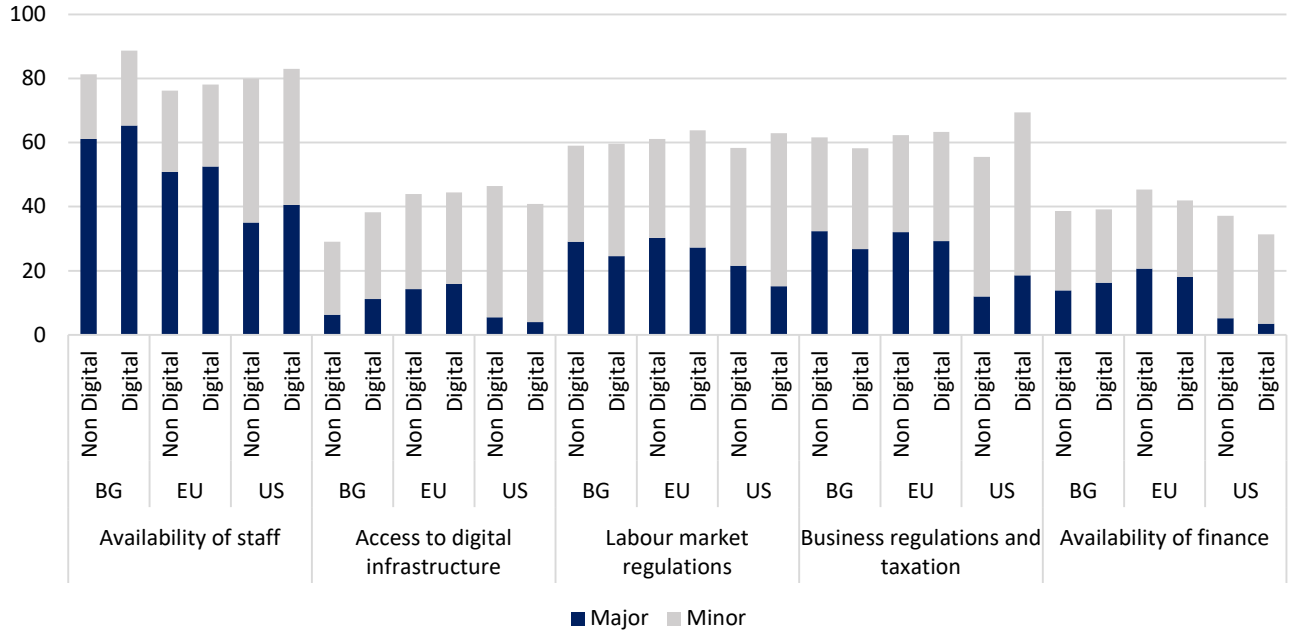
ADOPTION OF DIGITAL TECHNOLOGIES – BULGARIA

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

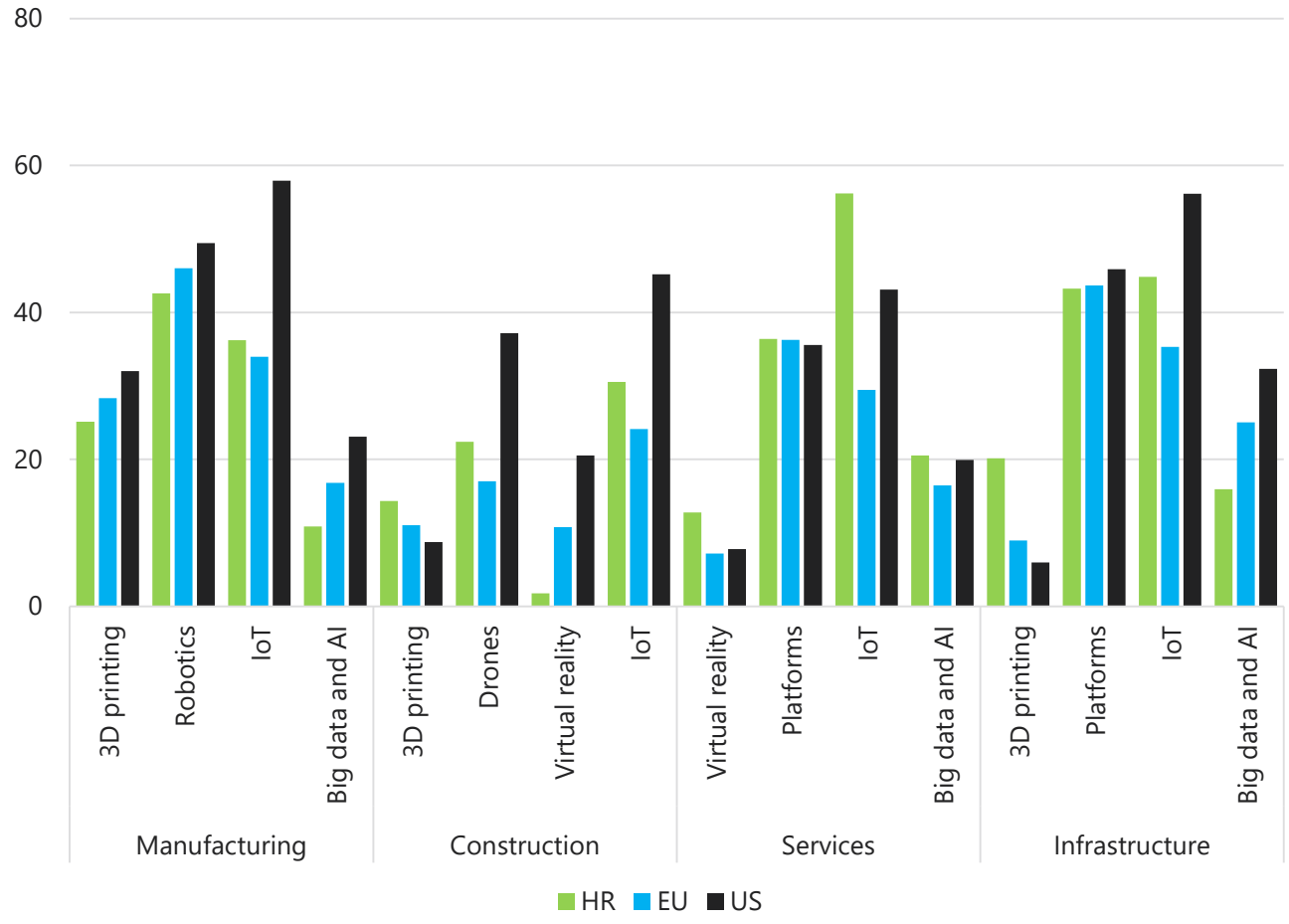


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – CROATIA

- Croatia ranks among the *strong* countries on the EIBIS Digitalisation Index.
- Digital adoption rates in Croatia are above the EU average for the construction, services and infrastructure sectors and also above the US average for the services sectors.
- The share of firms that report having increased or kept stable the number of employees in the last three years is higher among digital than non-digital firms.
- Median wage per employee and median labour productivity are below the EU average in Croatia, for both digital and non-digital firms.
- Among the reported obstacles to investment, 'lack availability of staff' is the most cited, immediately followed by 'business regulations and taxation'.

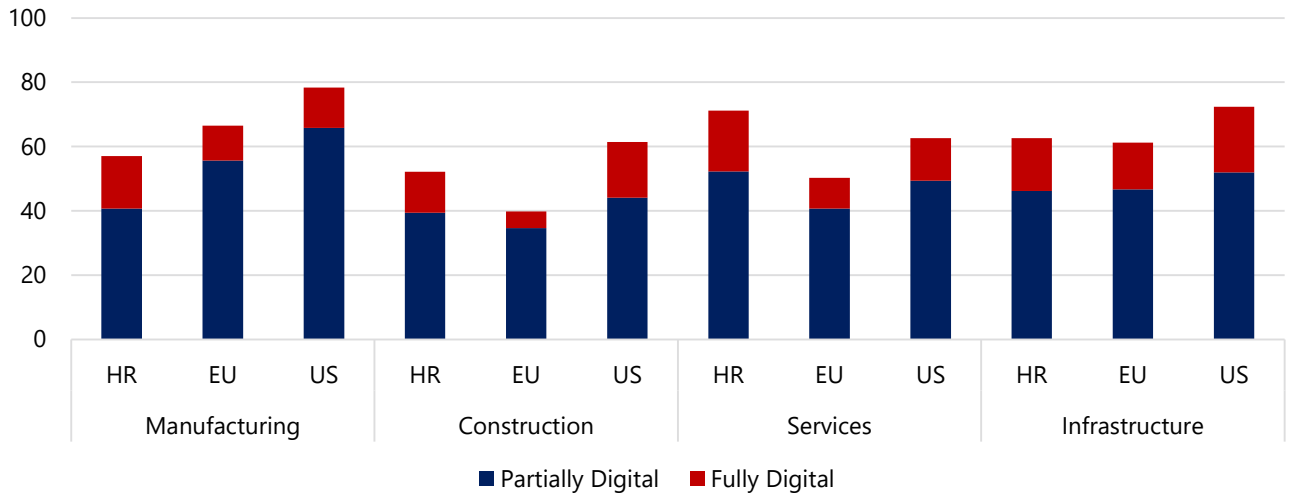
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

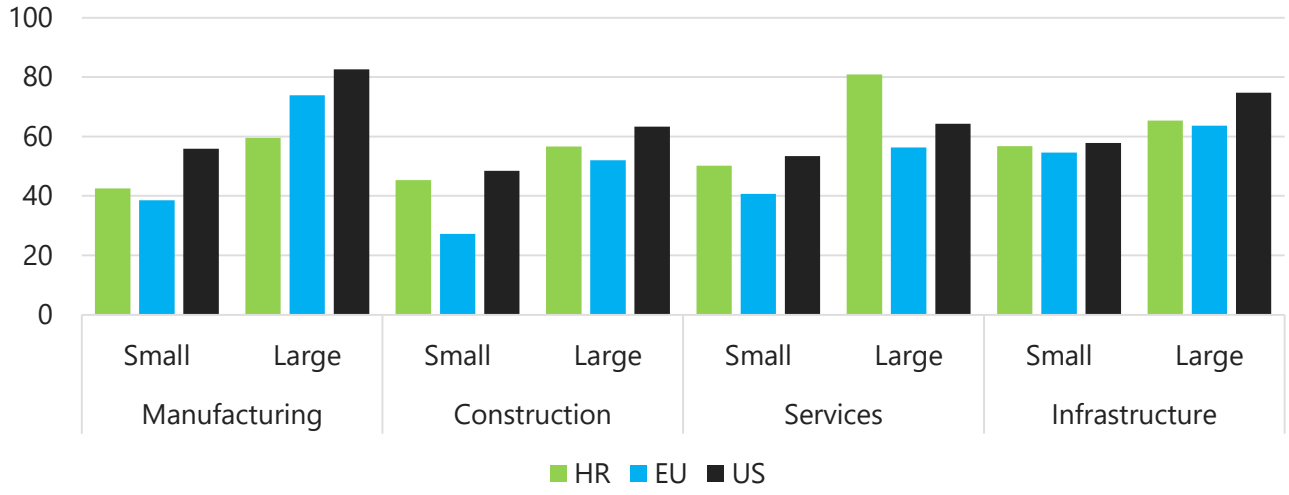
ADOPTION OF DIGITAL TECHNOLOGIES – CROATIA

Digital adoption rates (in % of all firms), by sector



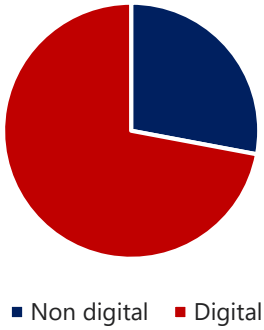
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

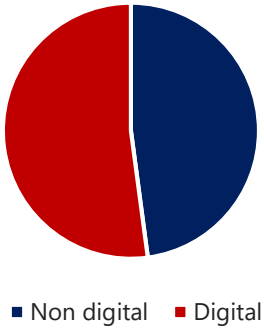


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



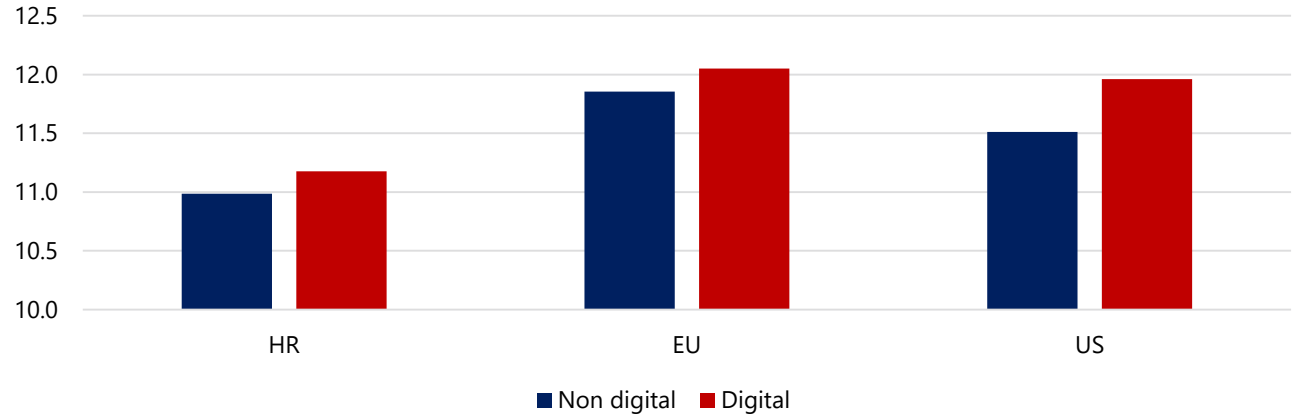
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

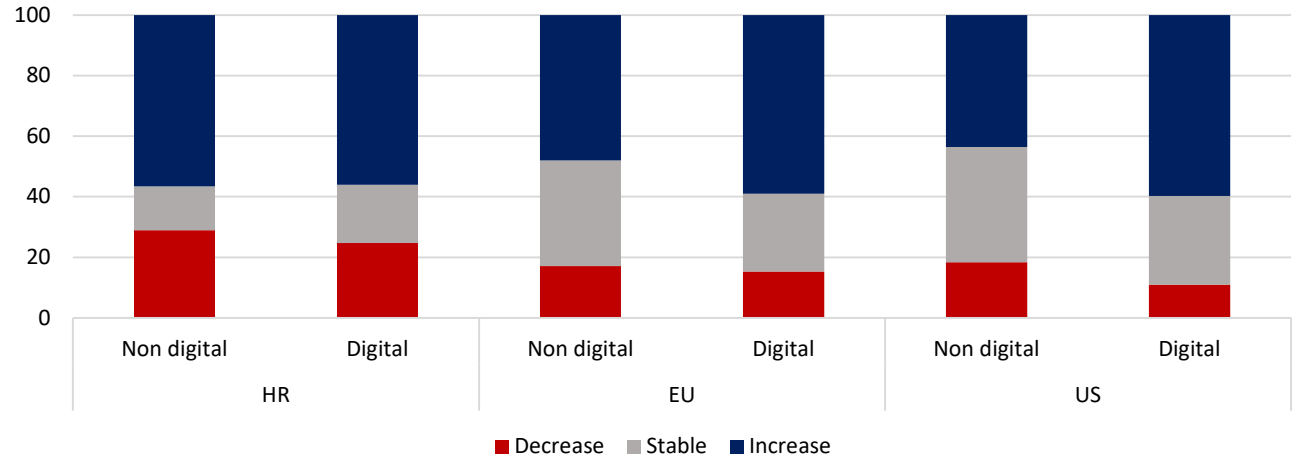
ADOPTION OF DIGITAL TECHNOLOGIES – CROATIA

Median labour productivity (in logarithm)



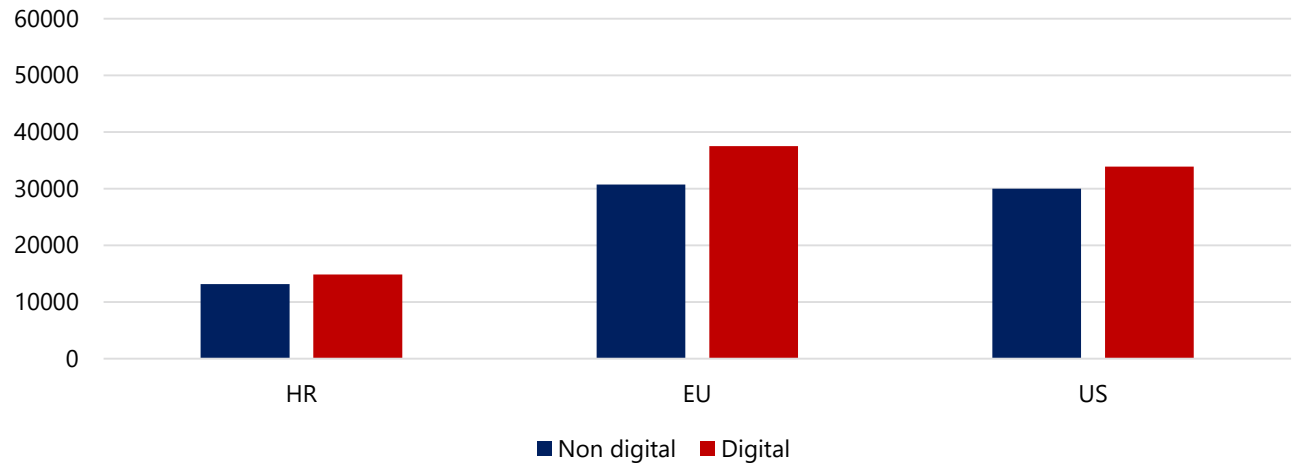
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

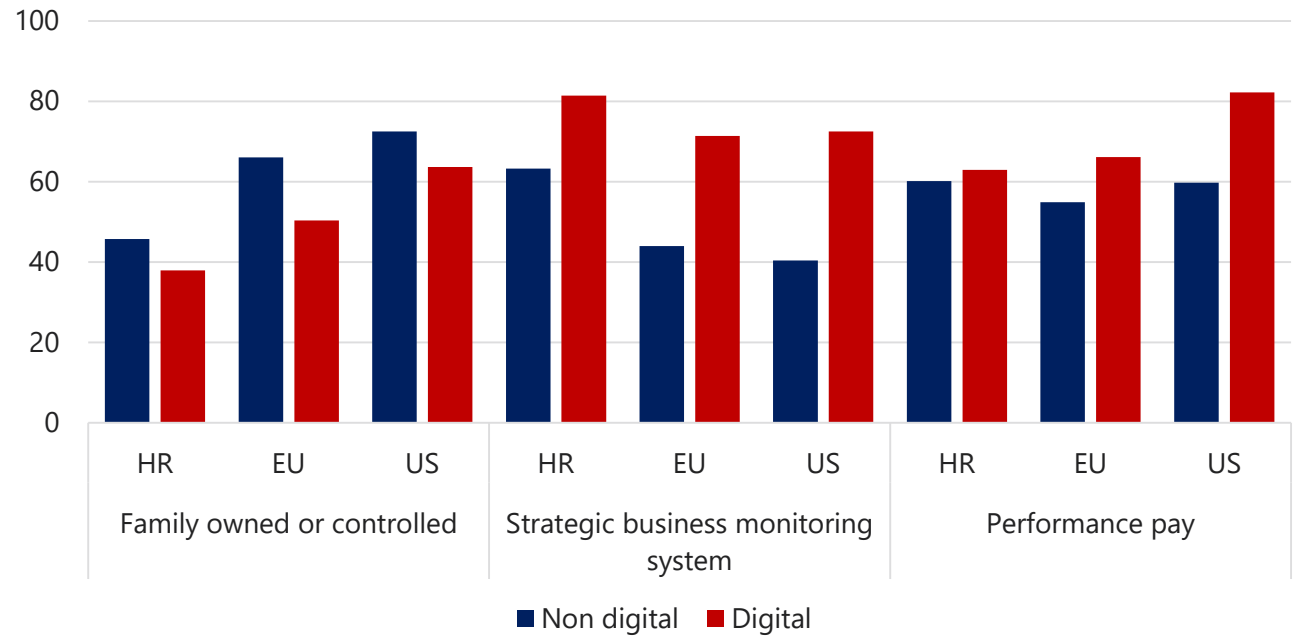
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

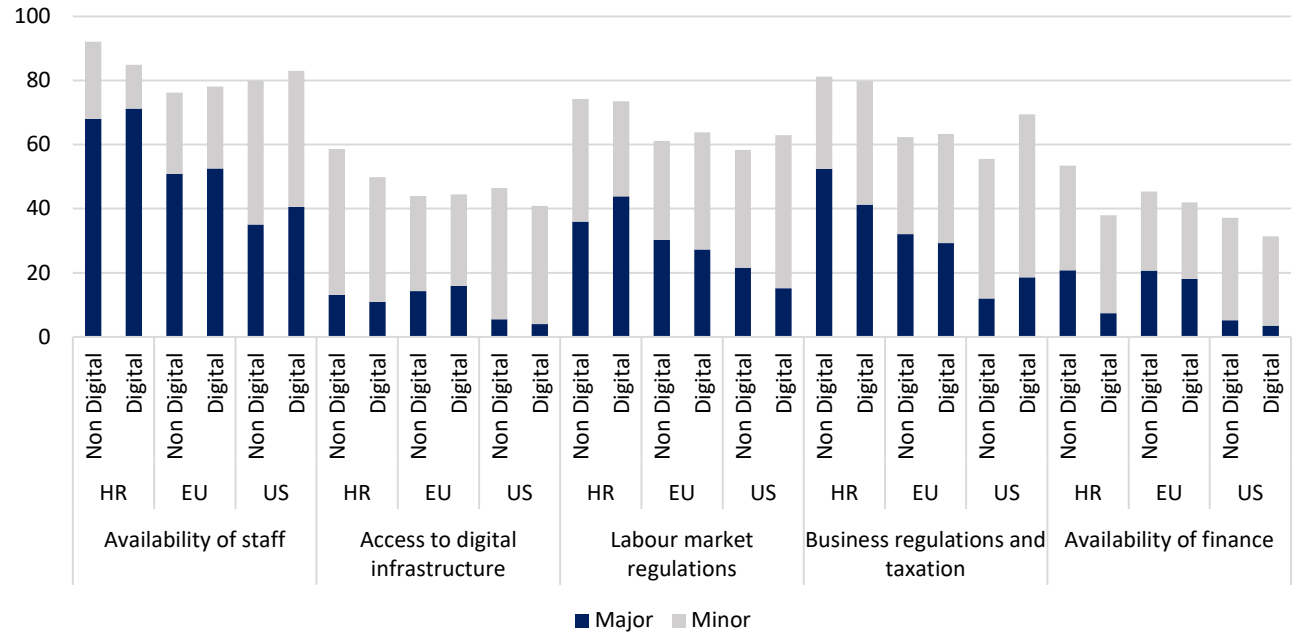
ADOPTION OF DIGITAL TECHNOLOGIES – CROATIA

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

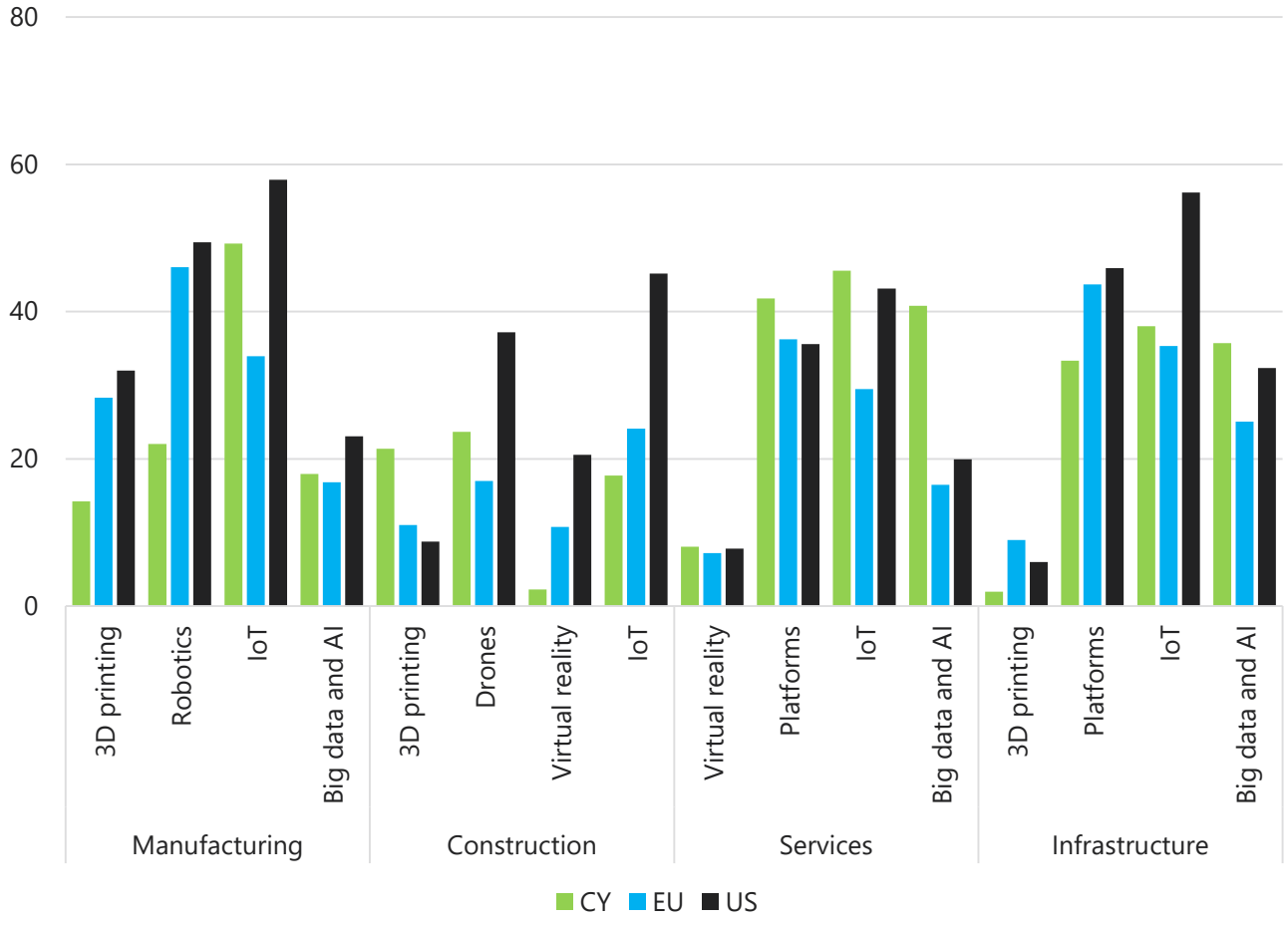


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – CYPRUS

- Cyprus ranks among the *moderate* countries on the EIBIS Digitalisation Index.
- Digital adoption rates in Cyprus are above the EU average for construction (3D printing and drones) and infrastructure (IoT and big data) sectors.
- In the services sector, the adoption rate of single technologies is above both the EU and US average for platforms, IoT and big data.
- 75% of digital firms report having increased the number of employees in the last three years, compared to less than 50% of non-digital firms.
- Among digital firms, median labour productivity is slightly below the EU average, while median wage per employee is almost half that in the EU.
- Among the reported obstacles to investment, 'lack of availability of staff' is the most cited by digital firms.

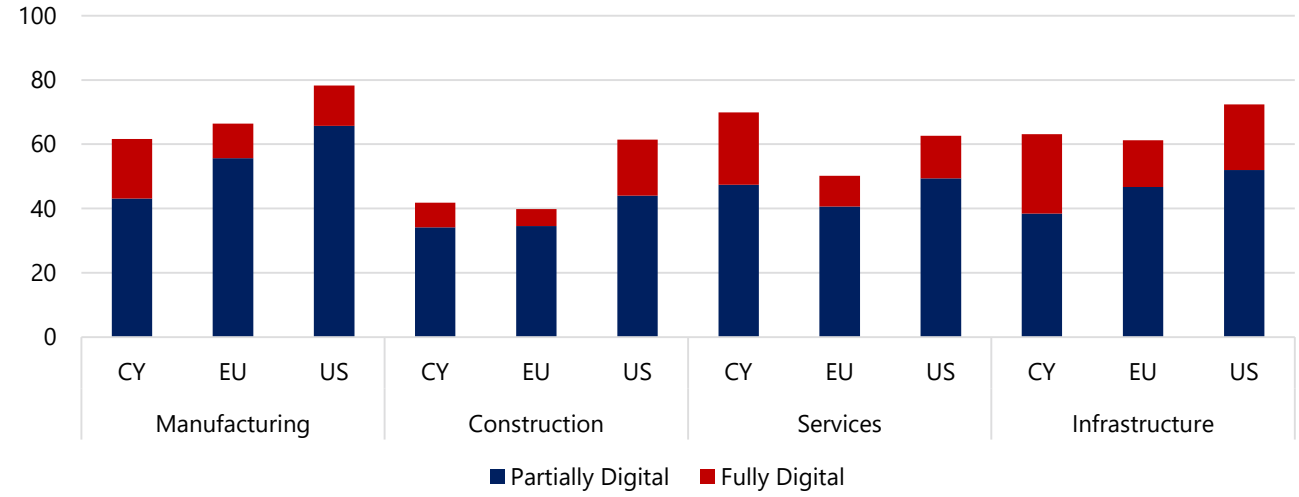
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

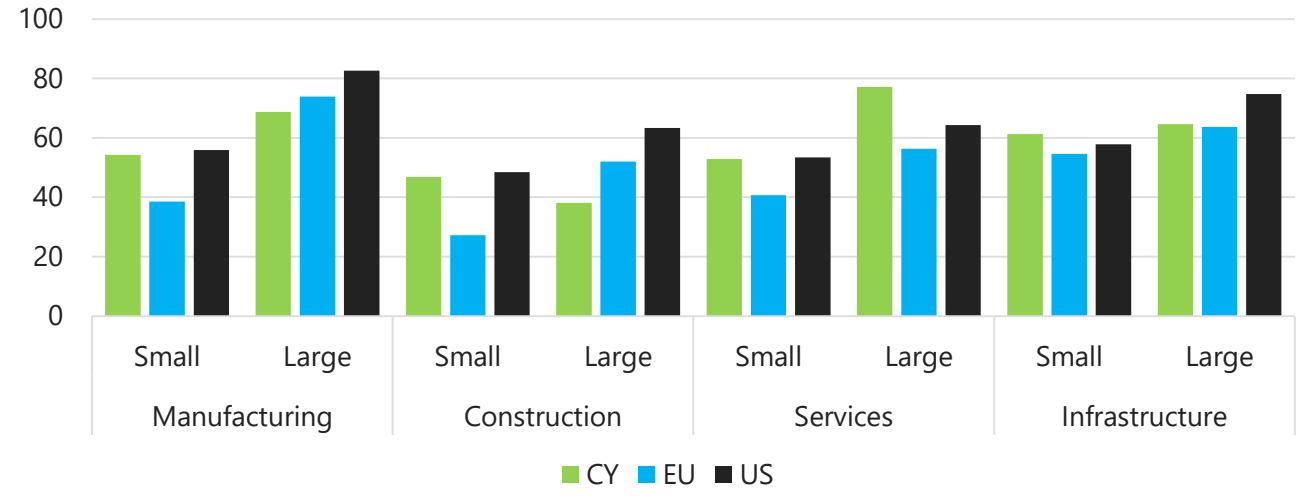
ADOPTION OF DIGITAL TECHNOLOGIES – CYPRUS

Digital adoption rates (in % of all firms), by sector



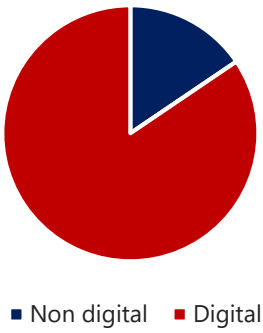
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

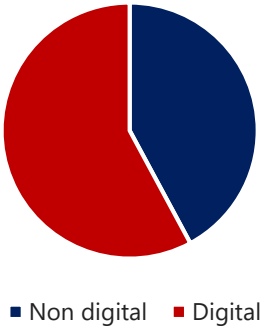


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



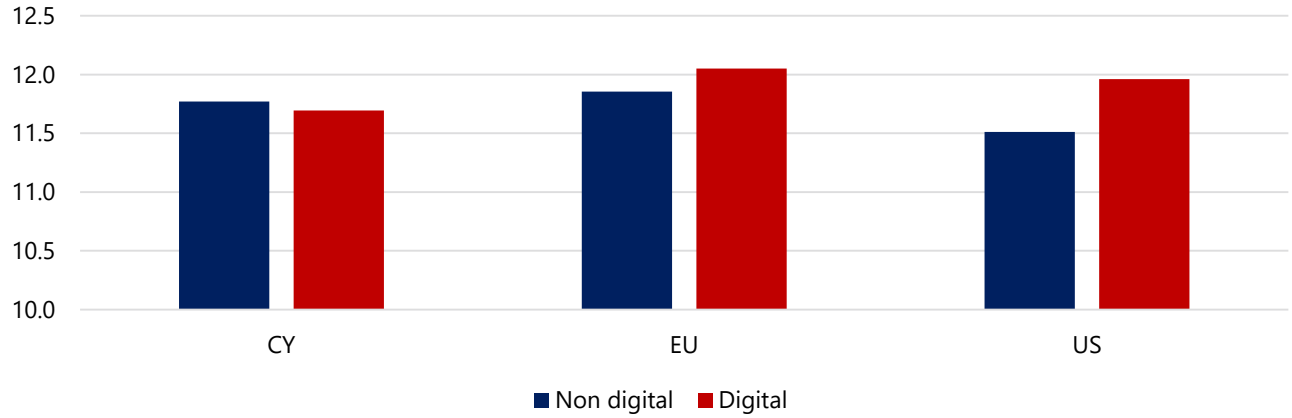
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

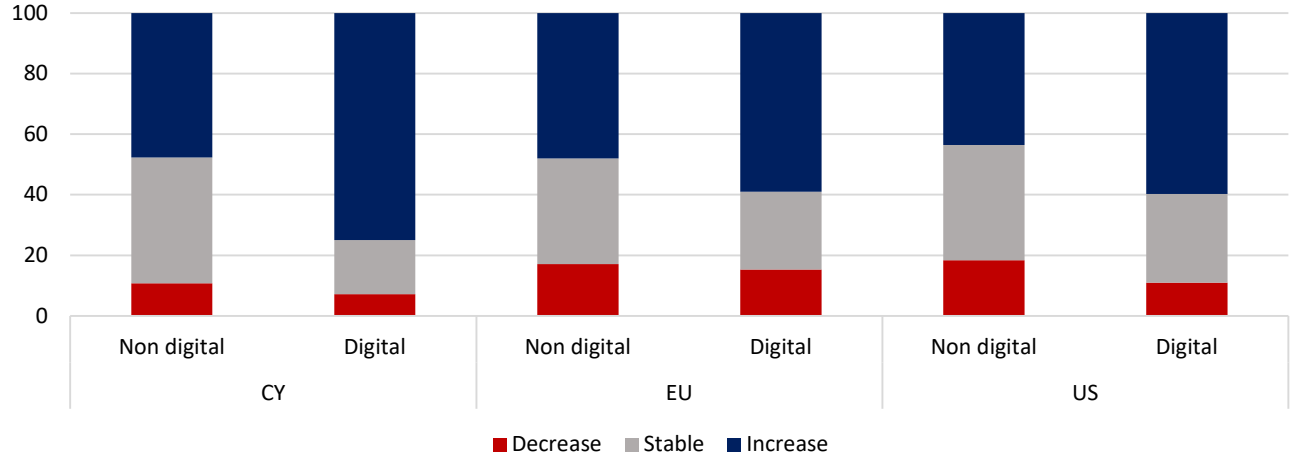
ADOPTION OF DIGITAL TECHNOLOGIES – CYPRUS

Median labour productivity (in logarithm)



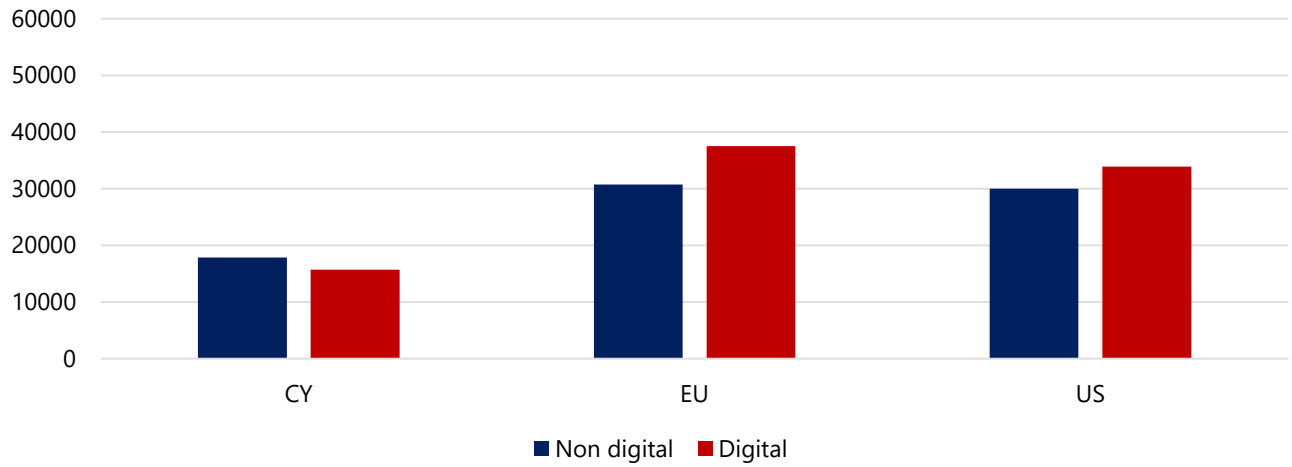
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

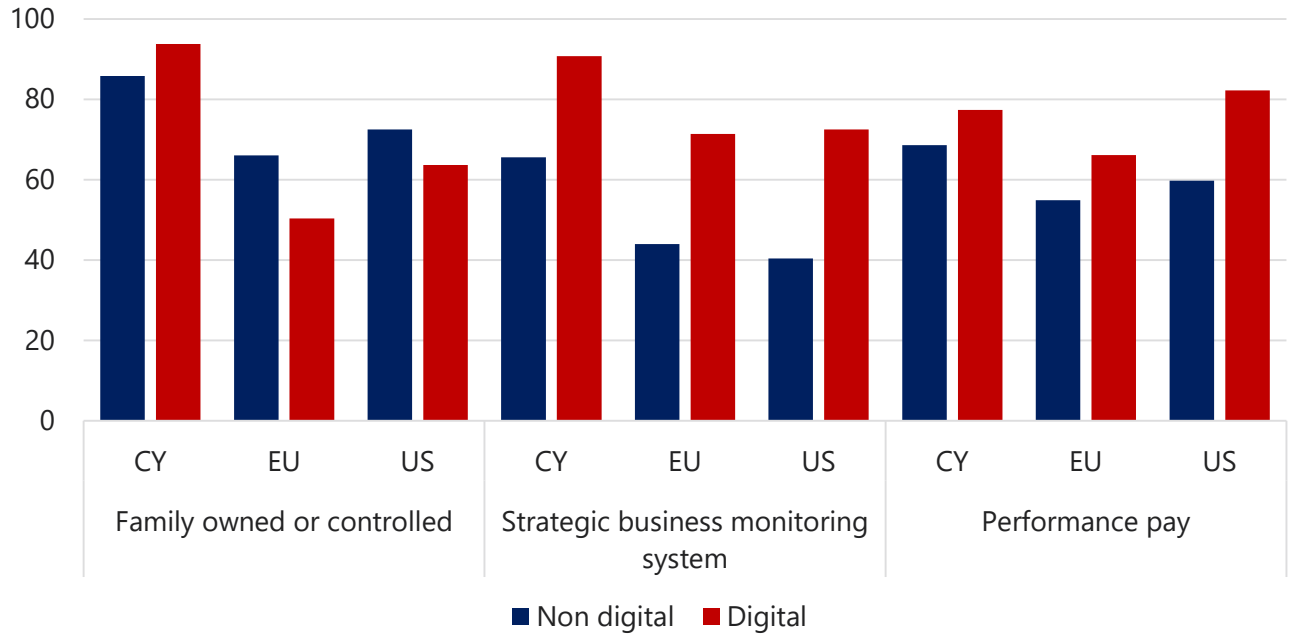
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

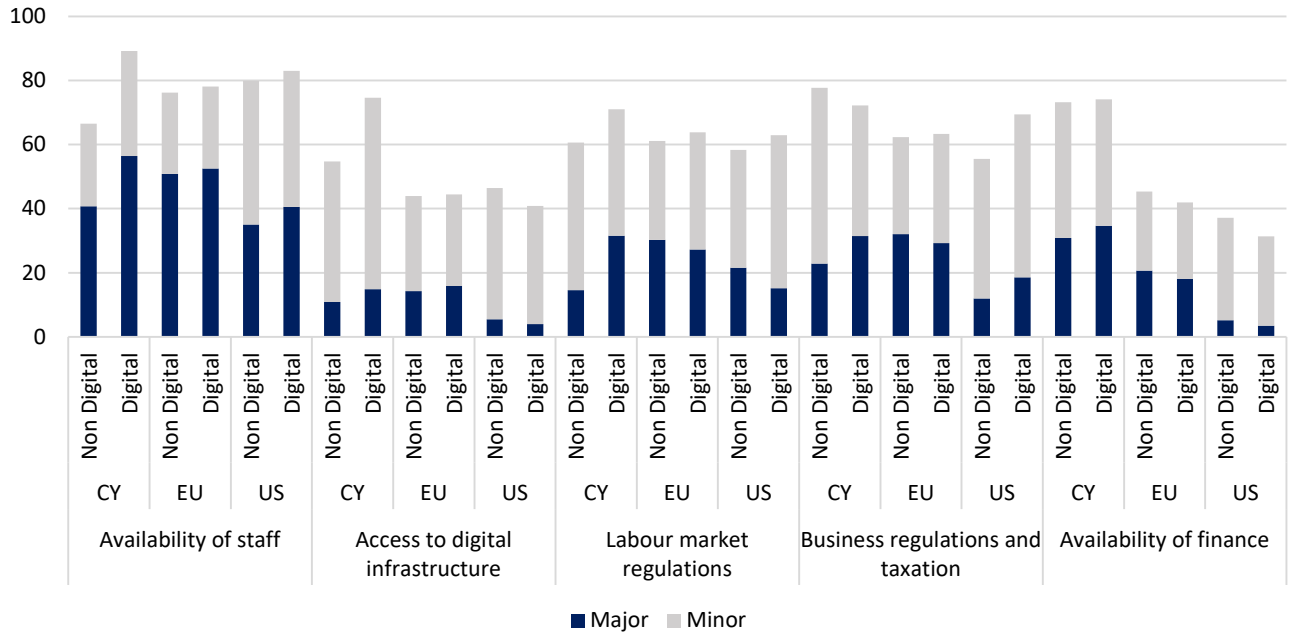
ADOPTION OF DIGITAL TECHNOLOGIES – CYPRUS

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

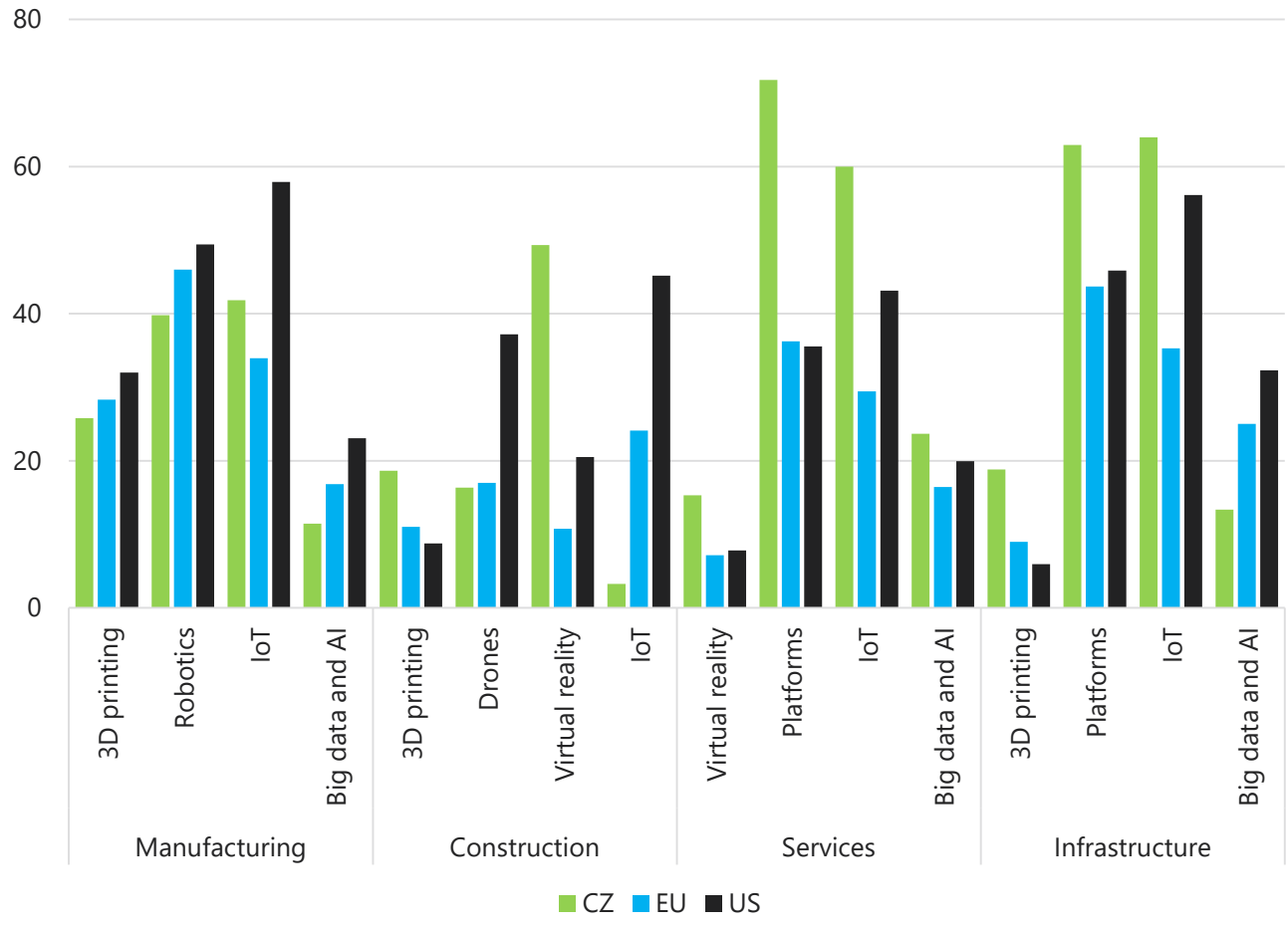


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – CZECH REPUBLIC

- The Czech Republic ranks among the *frontrunners* on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above the EU and US average for most technologies, and it is particularly high in the services and infrastructure sectors.
- Despite scoring below the EU average on the index, digital adoption rates of firms are above the EU average for all sectors and also above the US average, except for manufacturing.
- The share of firms that report having increased or kept stable the number of employees in the last three years is 87% for digital firms, compared to 76% for non-digital firms.
- Median labour productivity and median wage per employee do not differ strikingly between digital and non-digital firms in the Czech Republic.
- Among the reported obstacles to investment, 'lack of availability of staff' is cited by more than 90% of digital as well as non-digital firms.

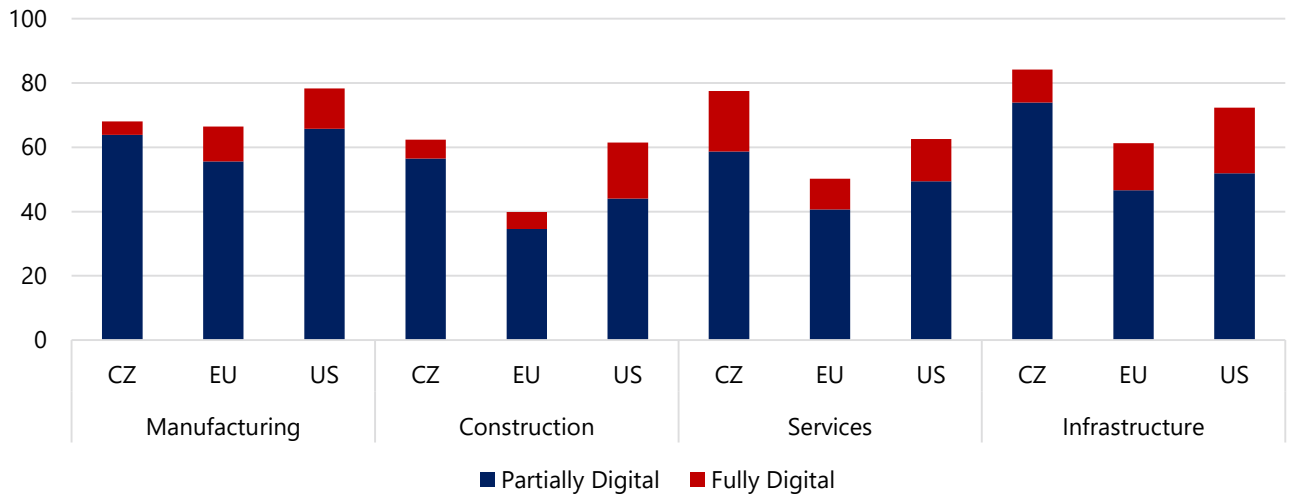
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

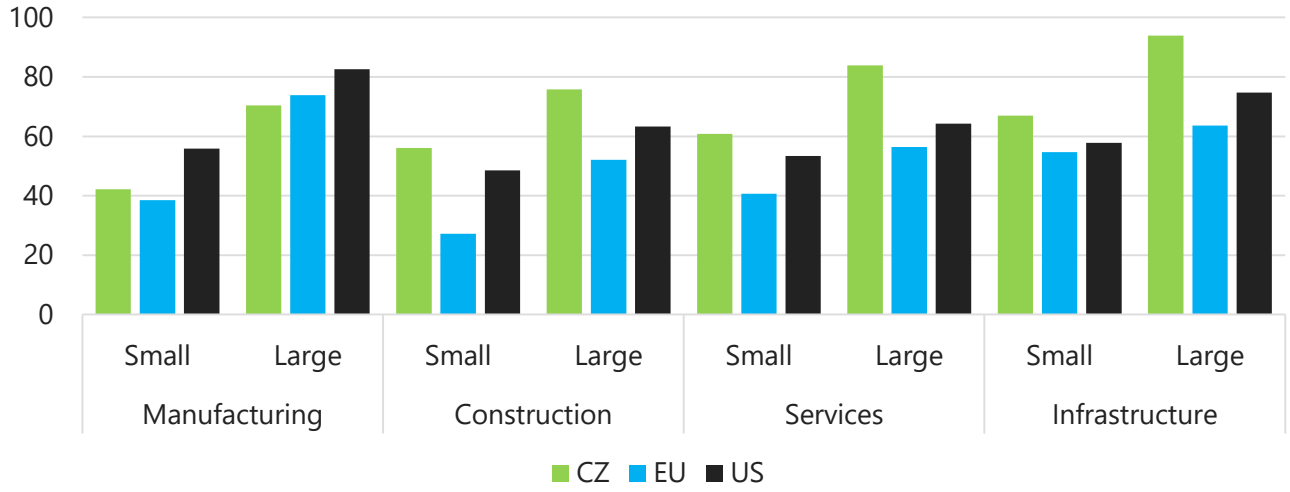
ADOPTION OF DIGITAL TECHNOLOGIES – CZECH REPUBLIC

Digital adoption rates (in % of all firms), by sector



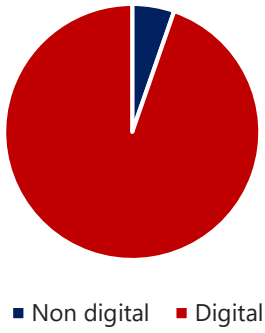
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

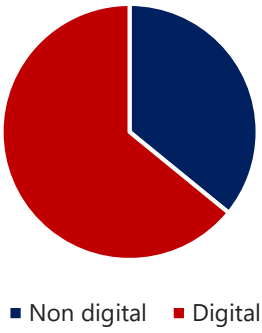


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



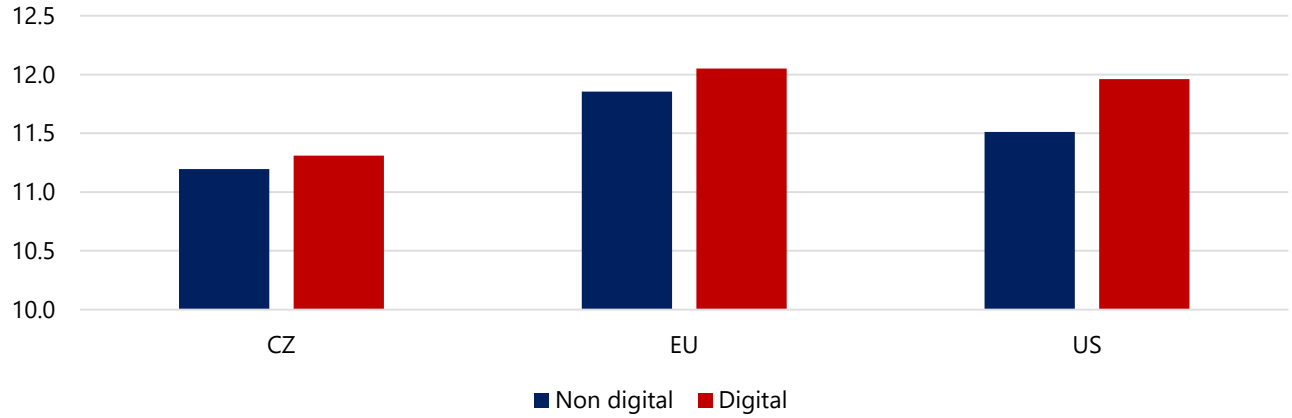
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

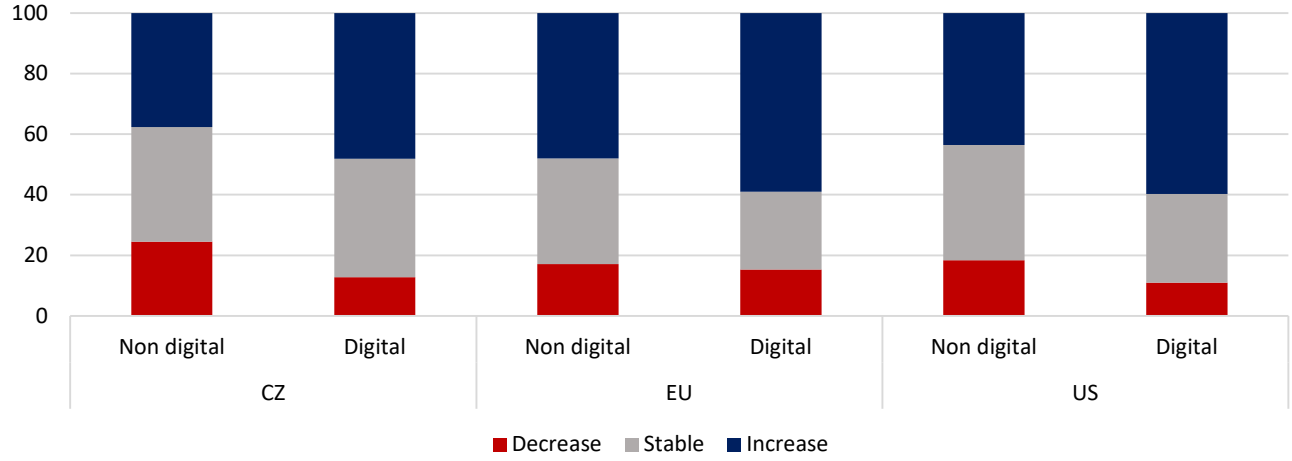
ADOPTION OF DIGITAL TECHNOLOGIES – CZECH REPUBLIC

Median labour productivity (in logarithm)



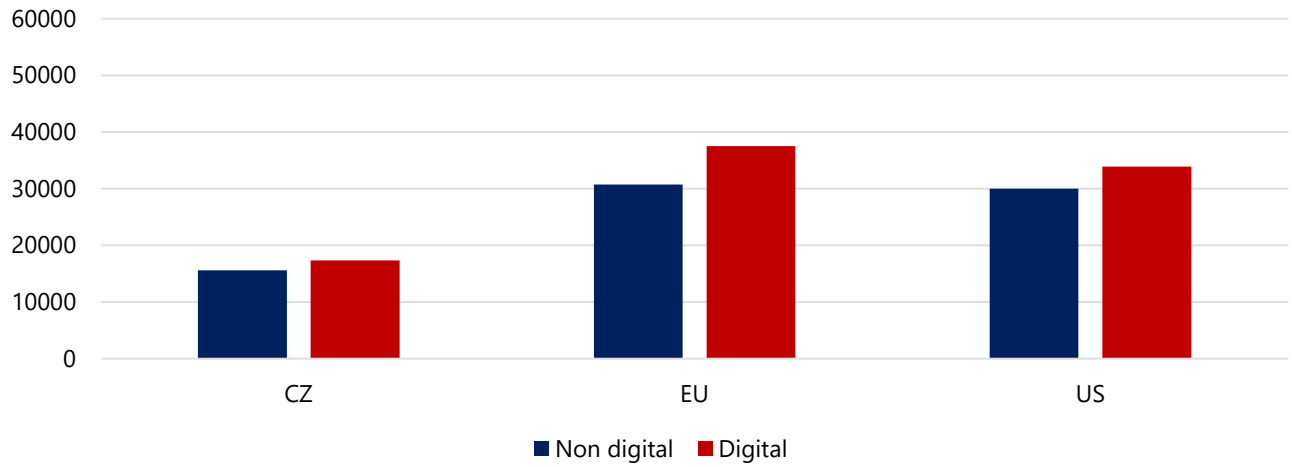
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

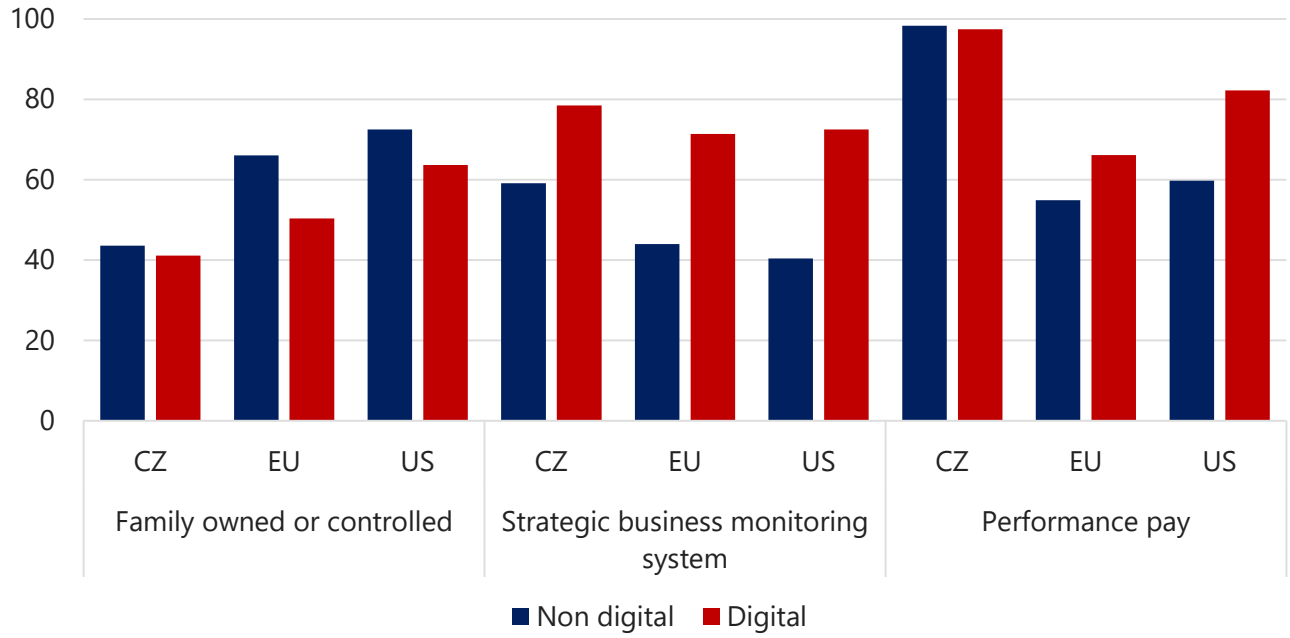
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

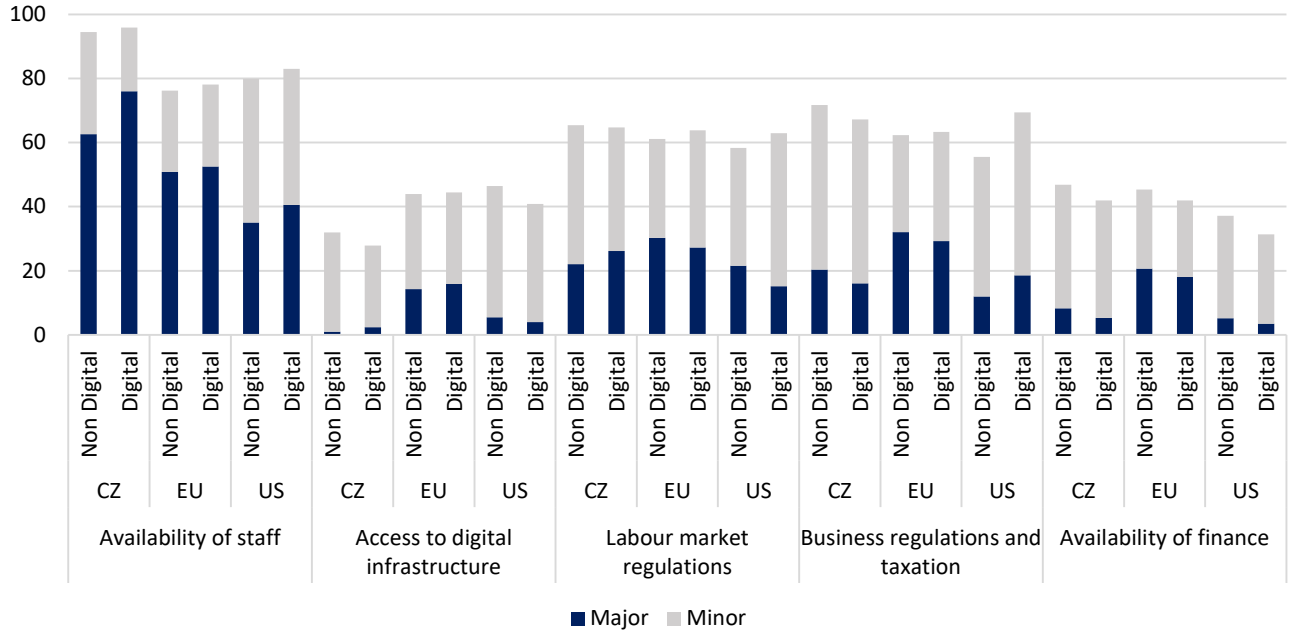
ADOPTION OF DIGITAL TECHNOLOGIES – CZECH REPUBLIC

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

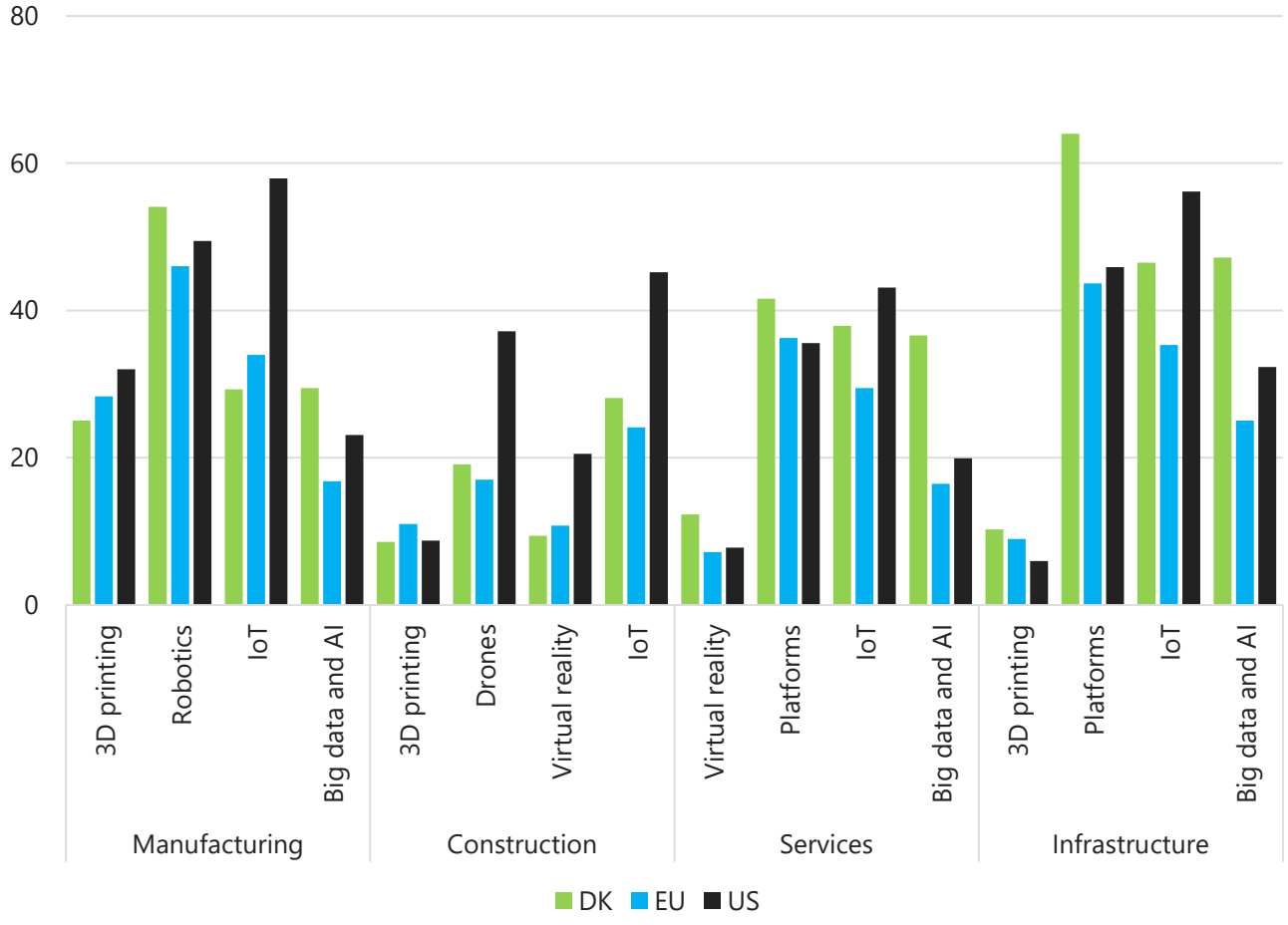


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – DENMARK

- Denmark ranks among the *frontrunners* on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above the EU and US average for platforms, robotics and big data.
- Digital adoption rates in Denmark are above the EU average for the manufacturing, services and infrastructure sectors but behind the US average for the manufacturing and construction sectors.
- The share of firms that report having increased the number of employees in the last three years is 60% for digital firms and 48% for non-digital firms.
- Median wage per employee are 1.6 times the EU average for non-digital firms and 1.8 times the EU average for digital firms in Denmark.
- Among the reported obstacles to investment, 'lack of availability of staff' is the most cited by digital firms.

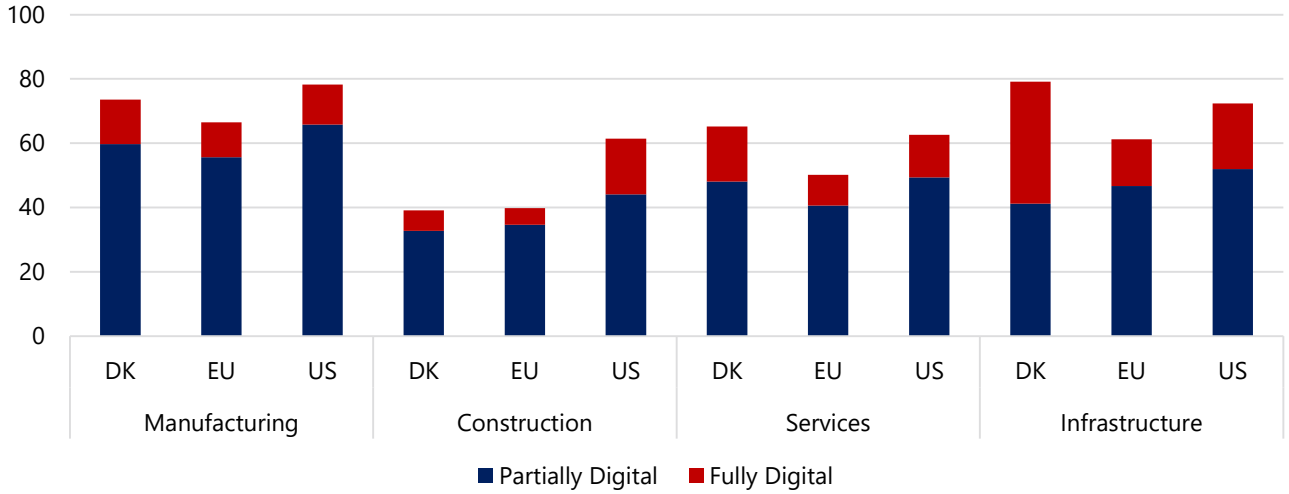
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

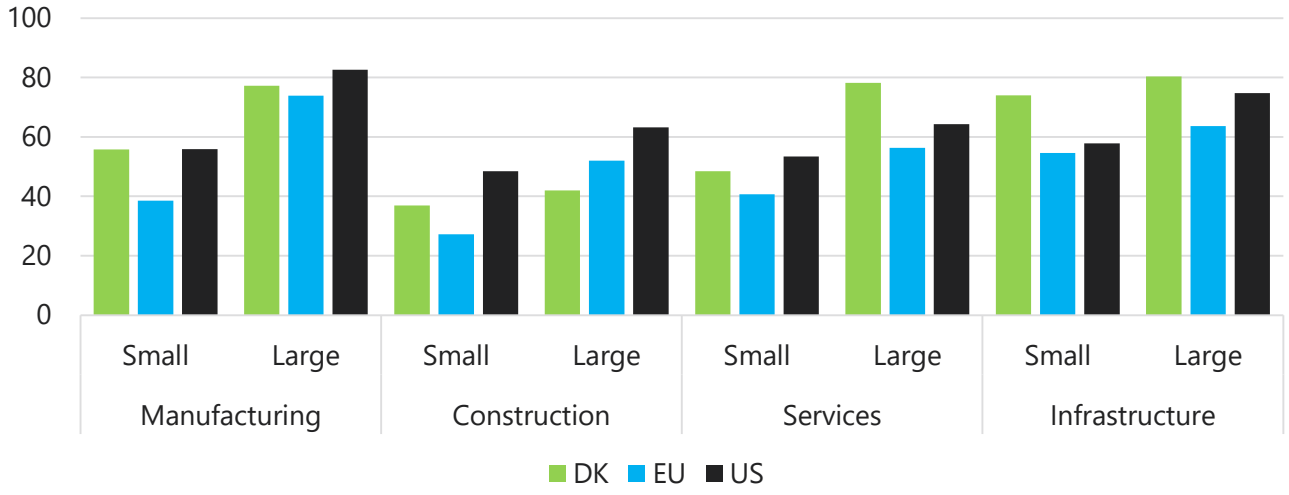
ADOPTION OF DIGITAL TECHNOLOGIES – DENMARK

Digital adoption rates (in % of all firms), by sector



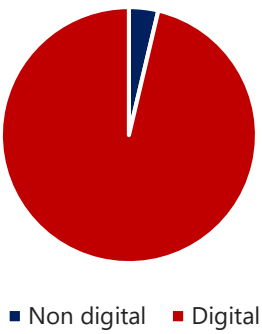
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

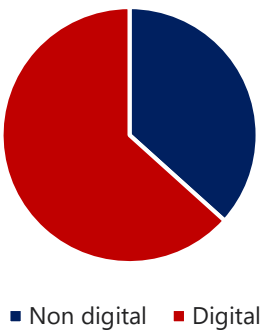


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



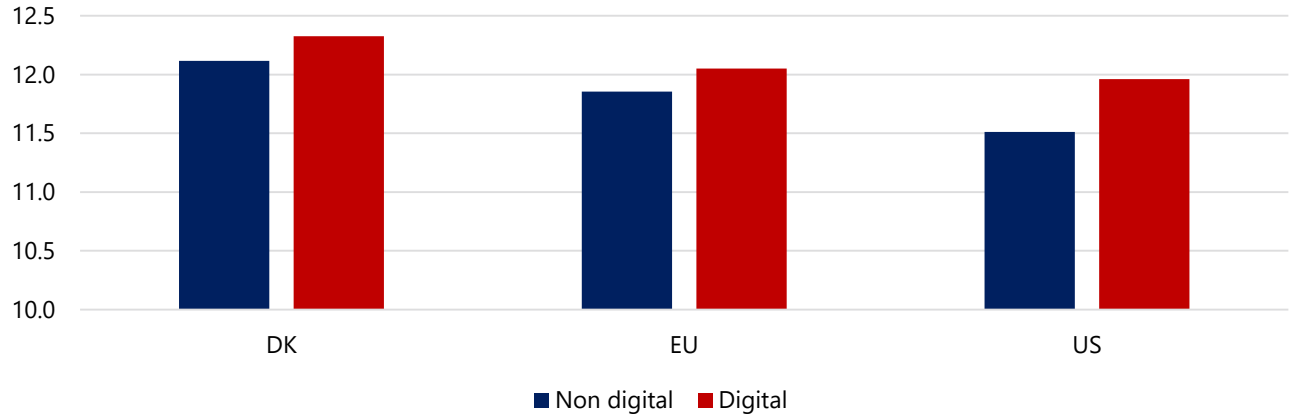
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

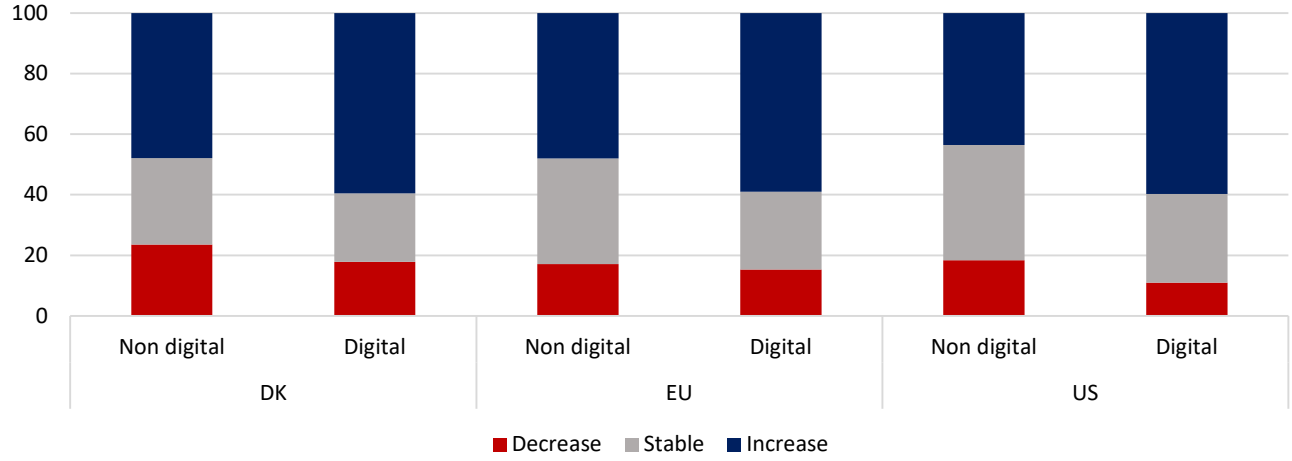
ADOPTION OF DIGITAL TECHNOLOGIES – DENMARK

Median labour productivity (in logarithm)



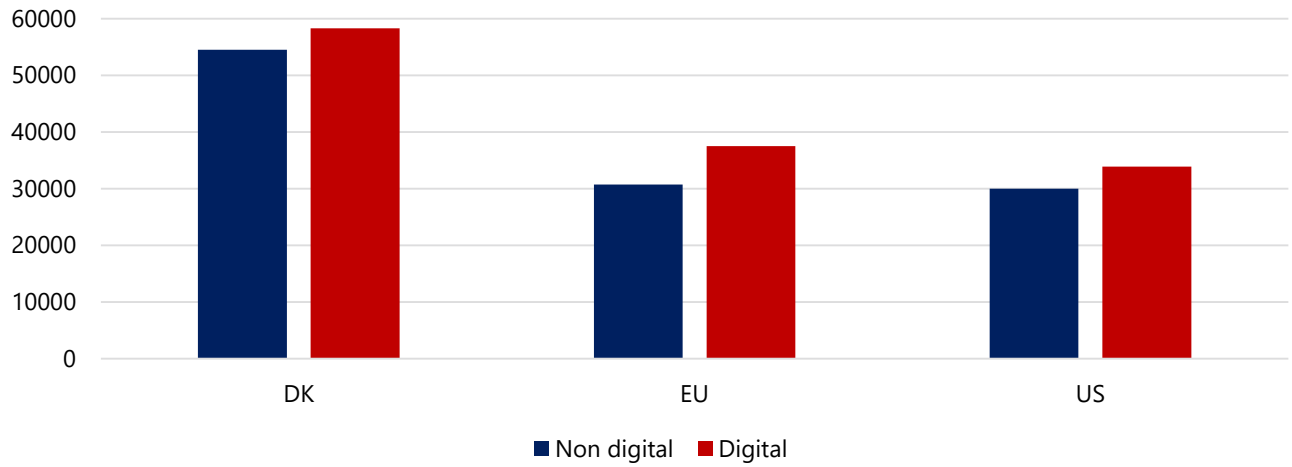
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

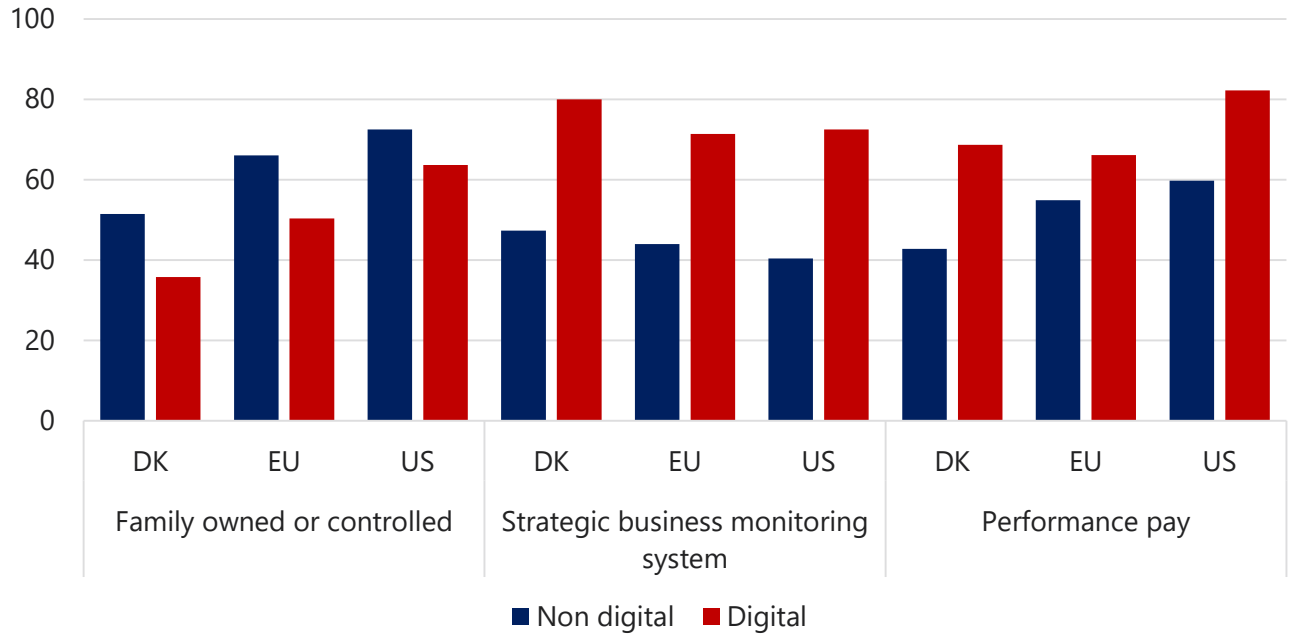
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

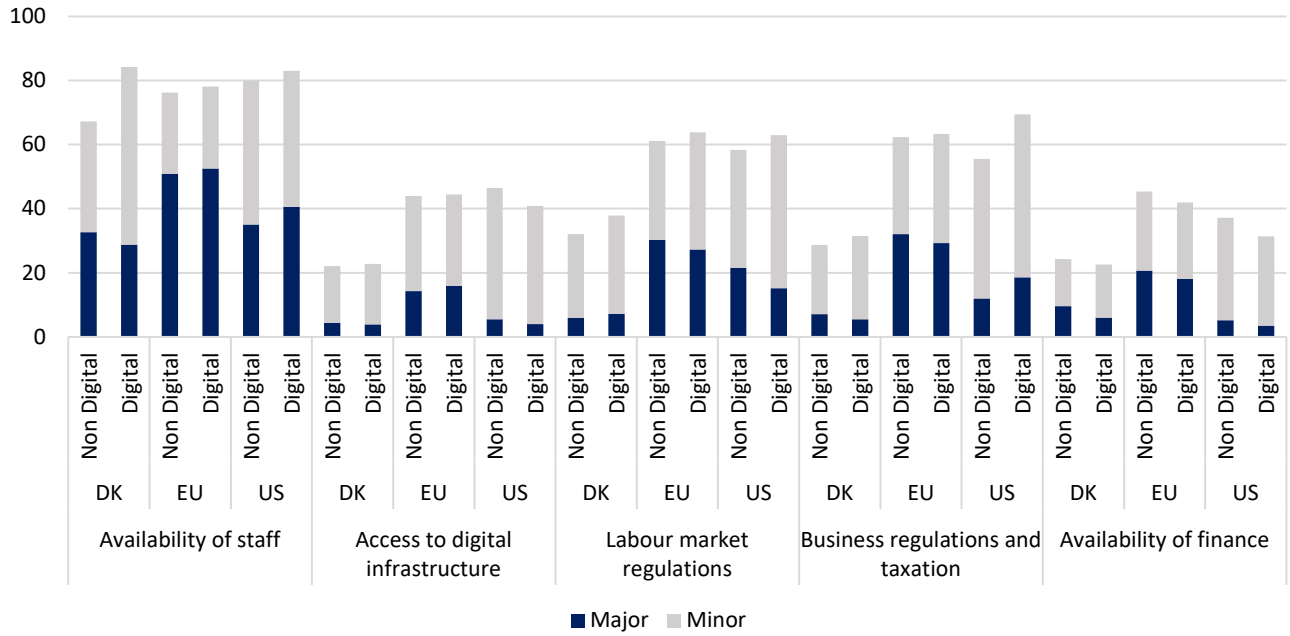
ADOPTION OF DIGITAL TECHNOLOGIES – DENMARK

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

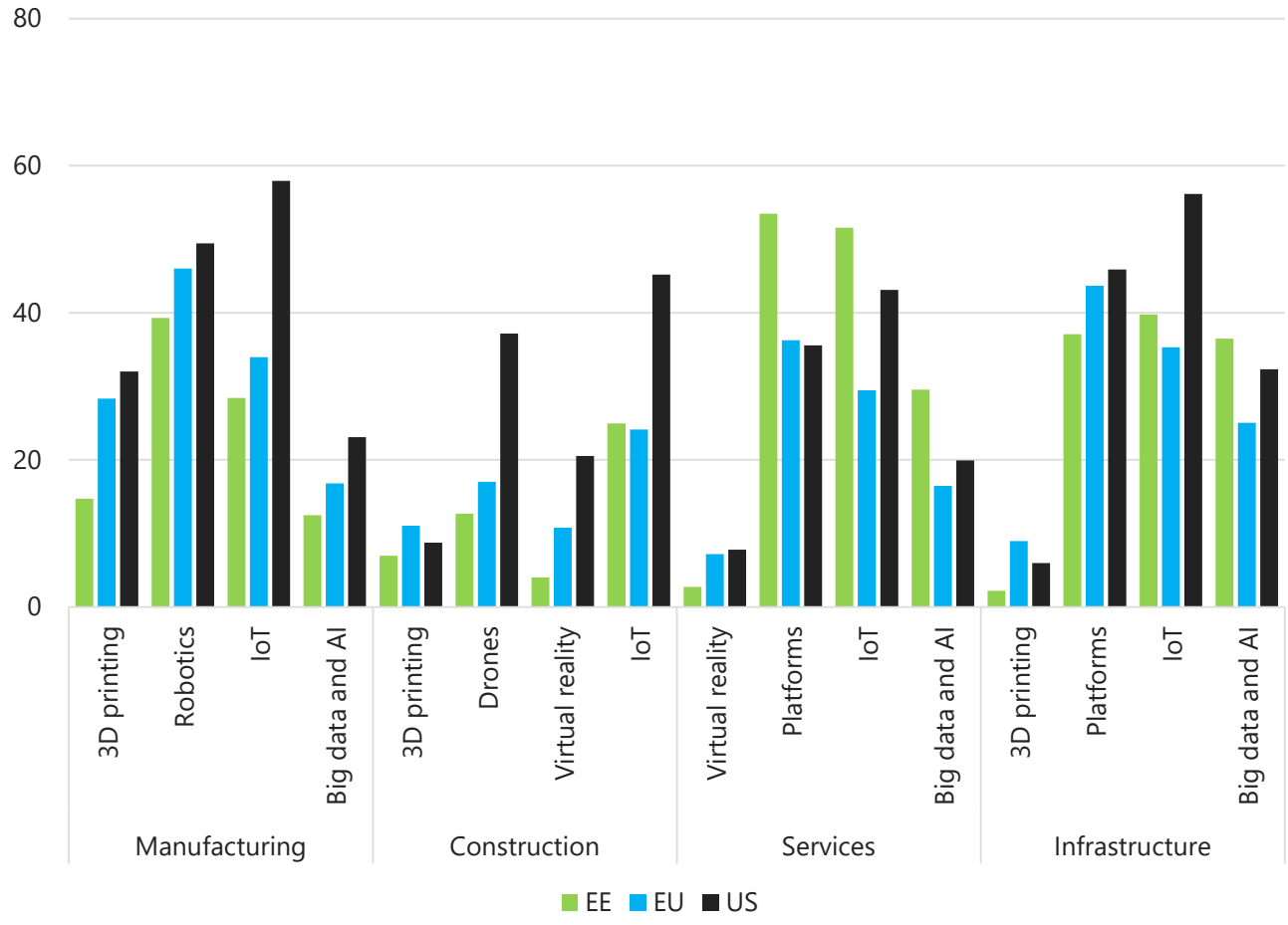


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – ESTONIA

- Estonia ranks among the *strong* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above the EU and US average for platforms, IoT and big data in the services sector and for big data in the infrastructure sector.
- Digital adoption rates in Estonia are above the EU and also the US average for the services sector.
- More than 55% of digital firms report having increased the number of employees in the last three years, compared to almost 38% of non-digital firms.
- Median wage per employee is 1.3 times higher for digital than non-digital firms in Estonia.
- Among the reported obstacles to investment, 'lack of availability of staff' is the most cited, especially by non-digital firms.

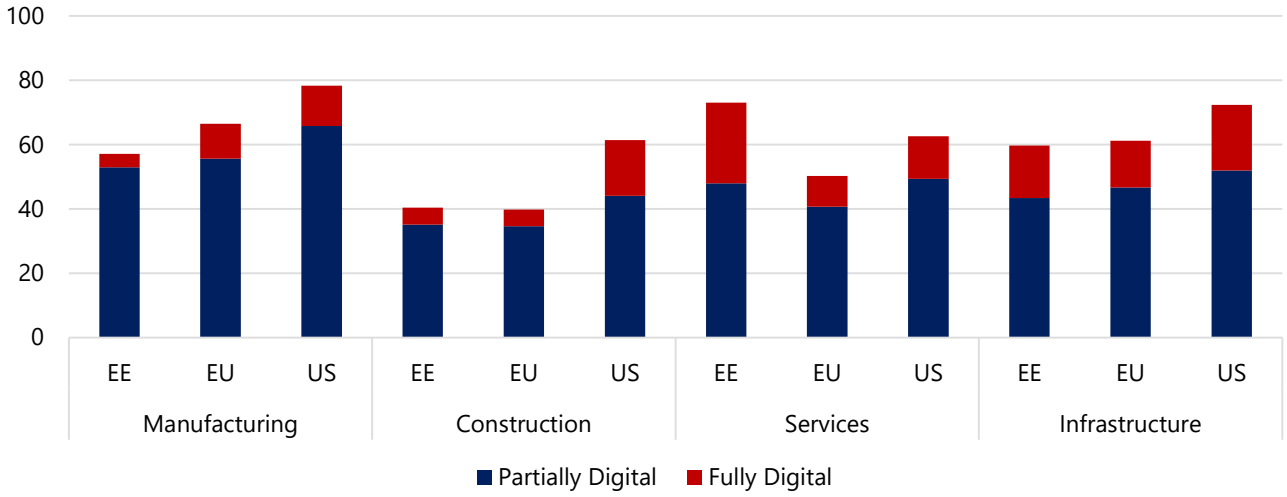
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

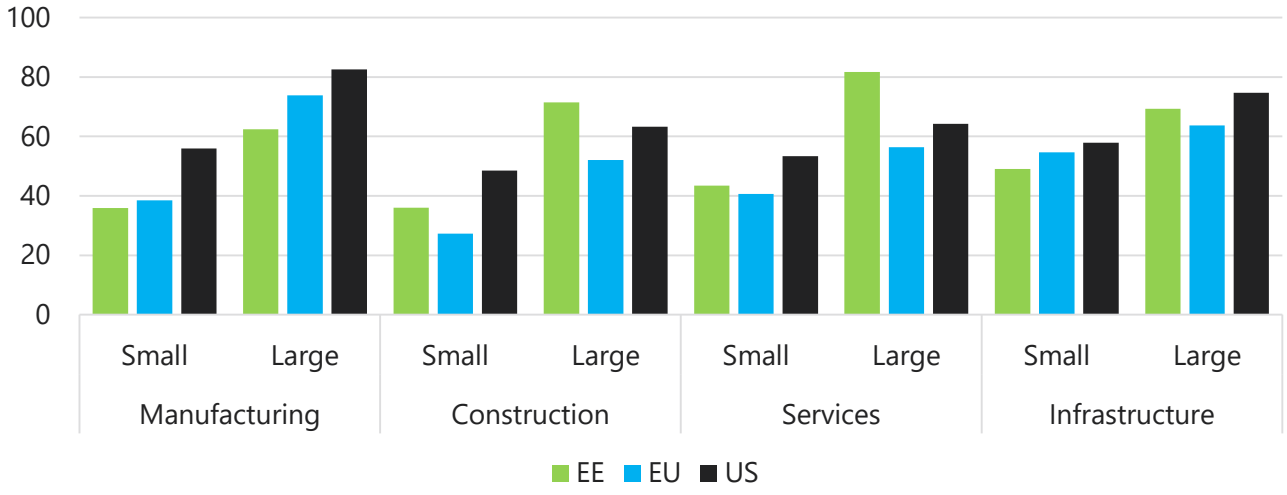
ADOPTION OF DIGITAL TECHNOLOGIES – ESTONIA

Digital adoption rates (in % of all firms), by sector



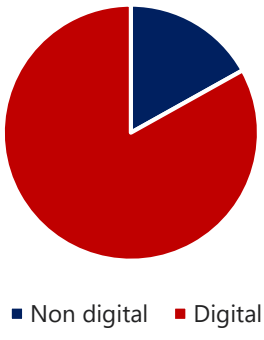
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

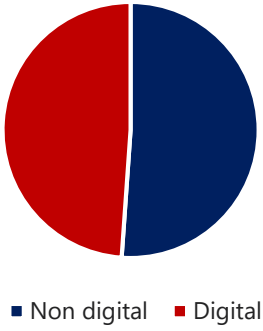


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



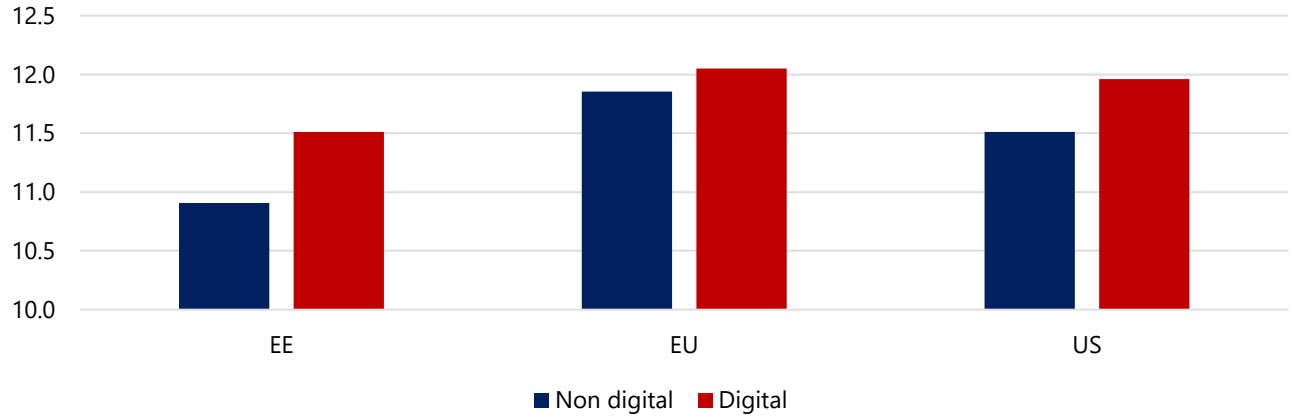
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

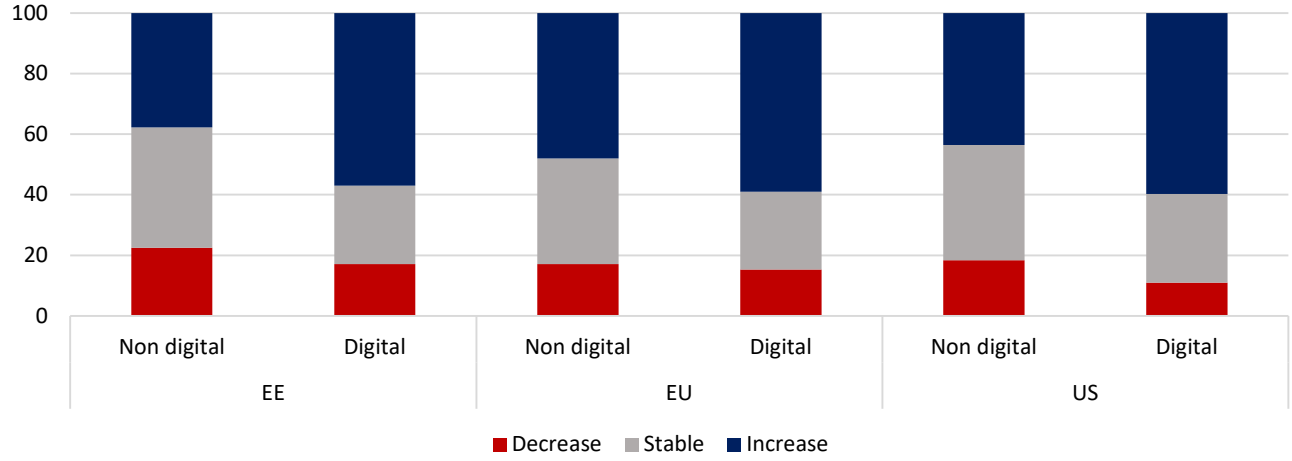
ADOPTION OF DIGITAL TECHNOLOGIES – ESTONIA

Median labour productivity (in logarithm)



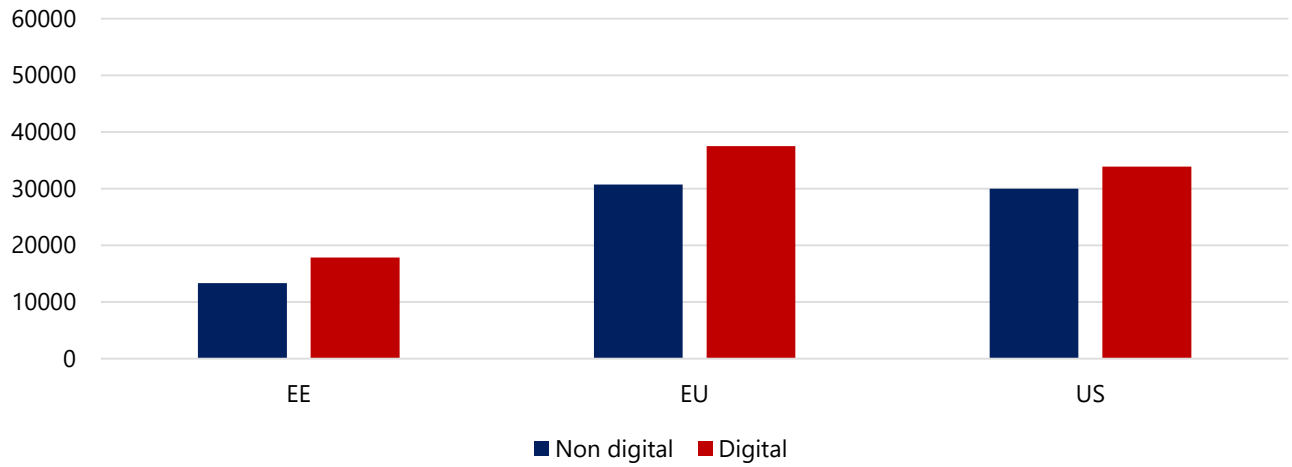
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

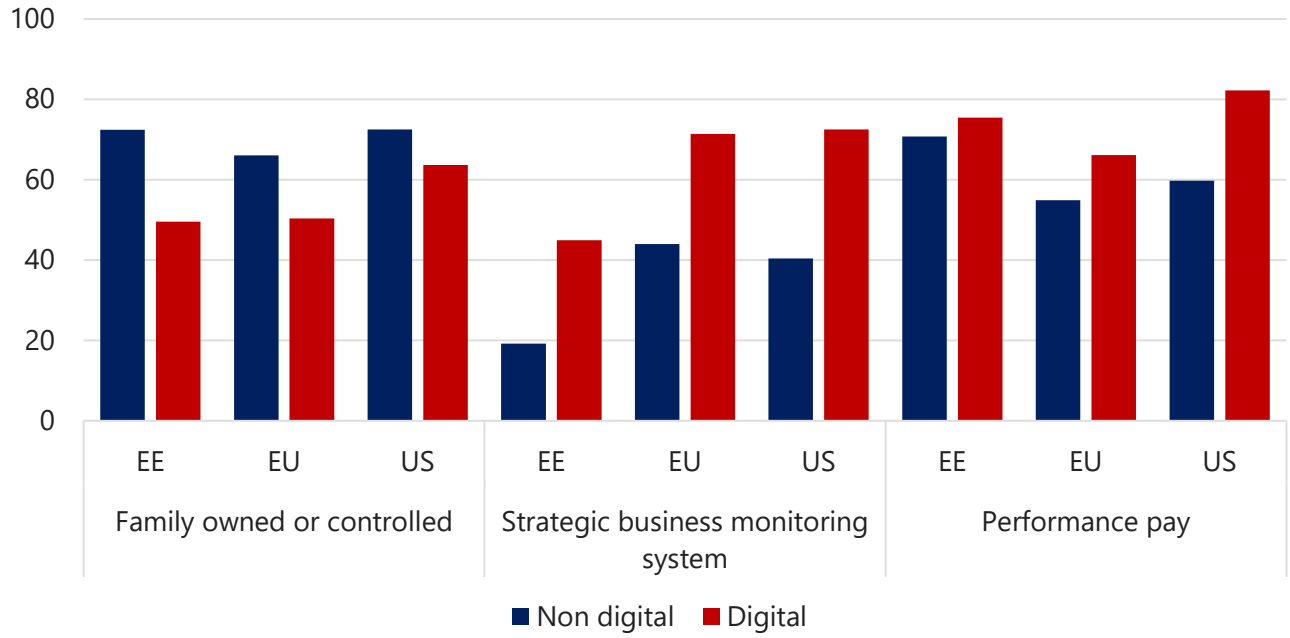
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

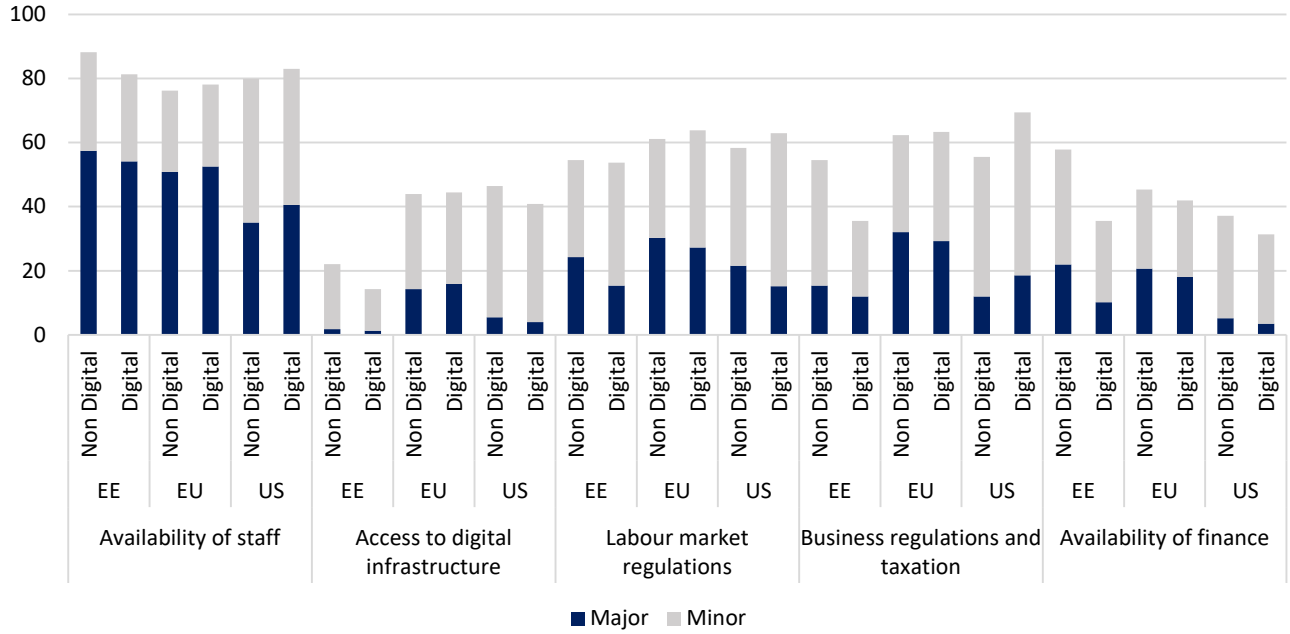
ADOPTION OF DIGITAL TECHNOLOGIES – ESTONIA

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

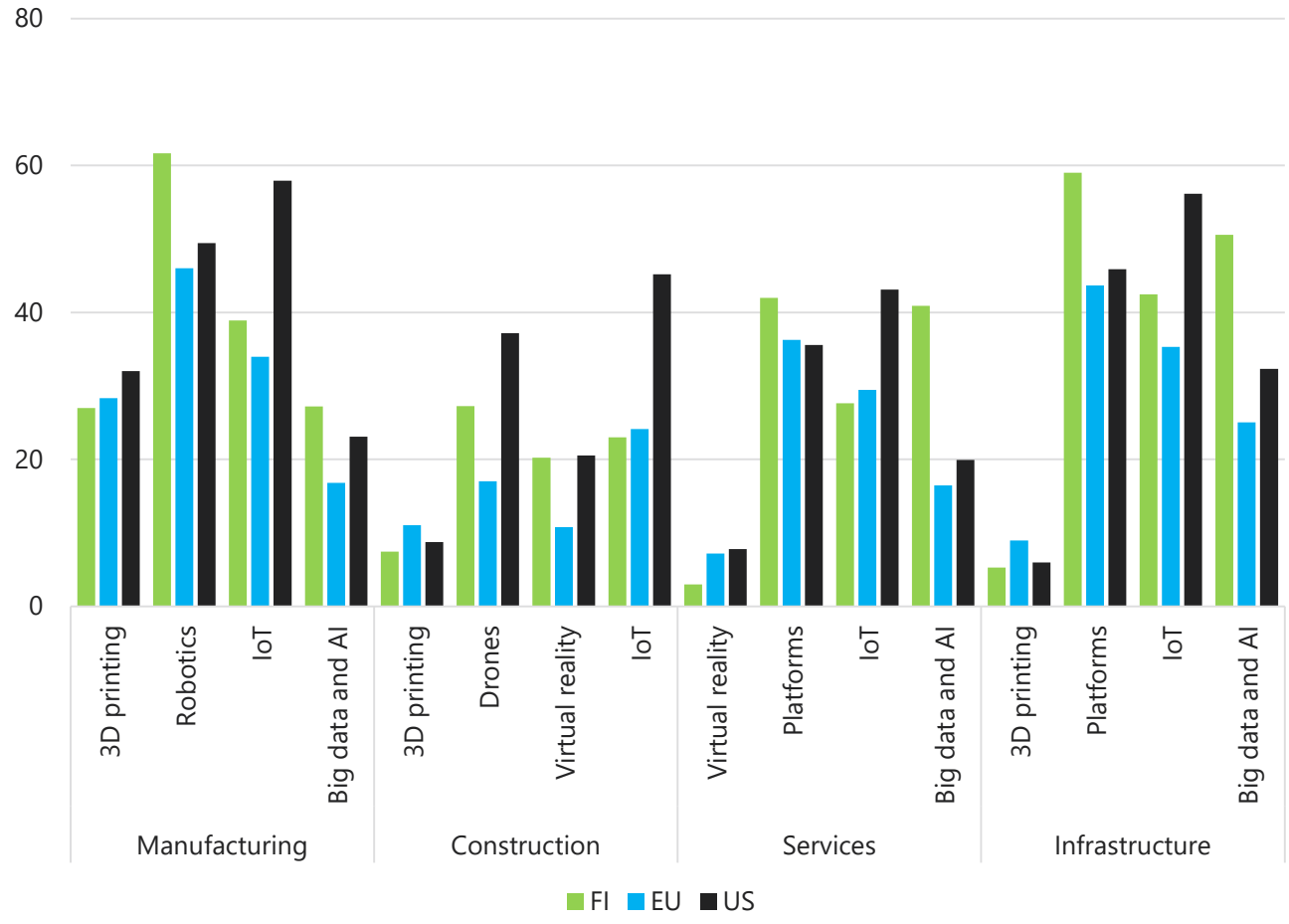


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – FINLAND

- Finland ranks among the *frontrunners* on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above the EU and US average for robotics, platforms and big data.
- Digital adoption rates in Finland are above the EU average for all sectors and also above the US average for the services and infrastructure sectors.
- More than 50% of digital firms in Finland report having increased the number of employees in the last three years, compared to 36% of non-digital firms.
- Median labour productivity of Finnish digital firms is the highest registered in Europe.
- Finnish digital firms report fewer major obstacles than their non-digital peers and complain in general less than similar firms in the EU or the US.

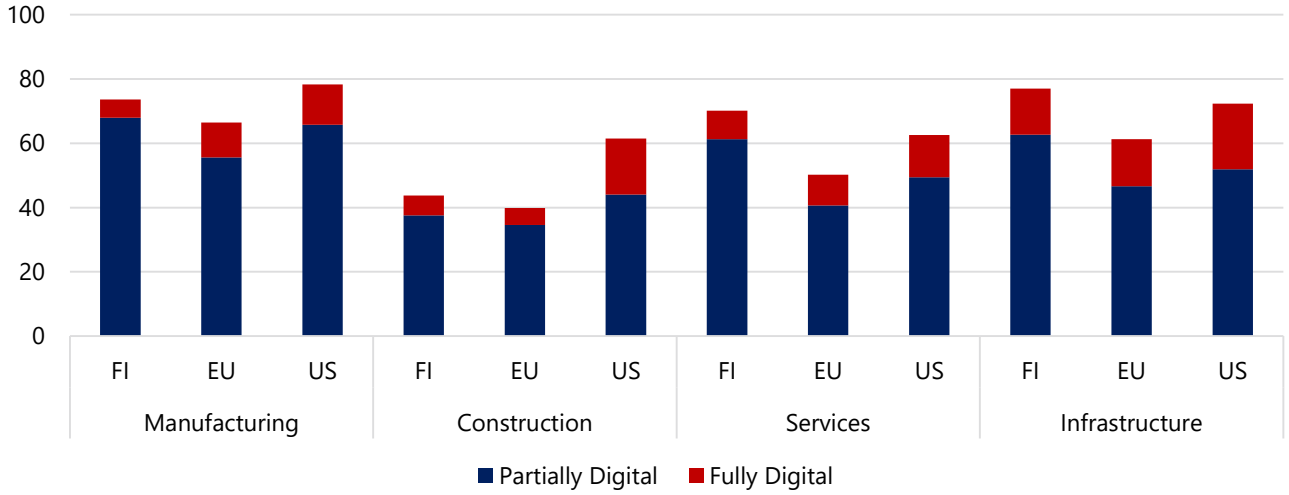
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

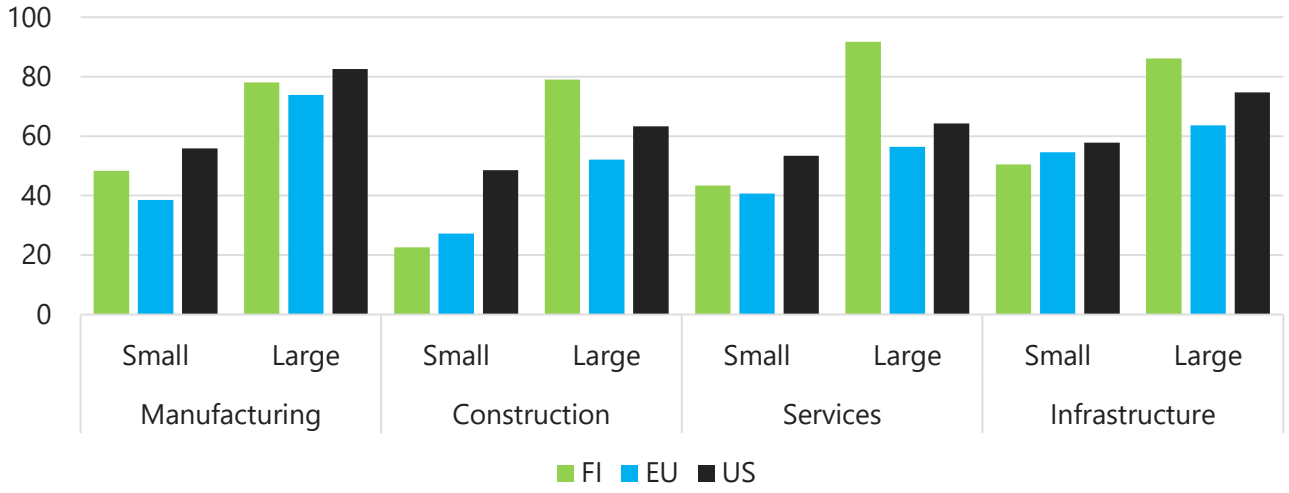
ADOPTION OF DIGITAL TECHNOLOGIES – FINLAND

Digital adoption rates (in % of all firms), by sector



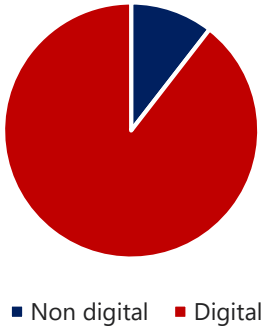
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

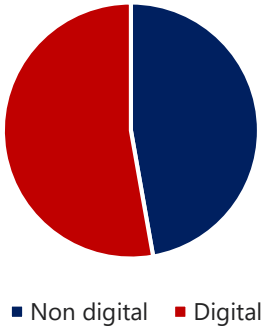


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



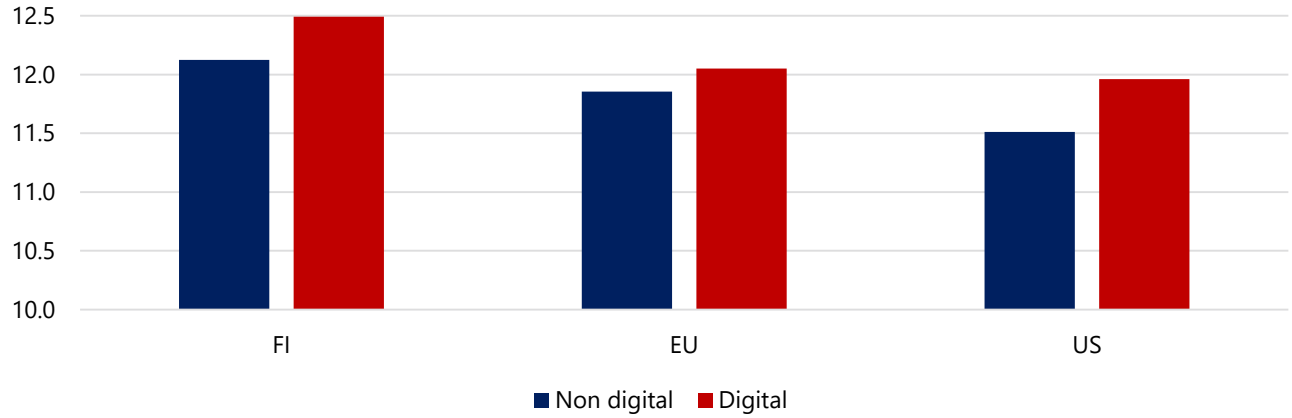
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

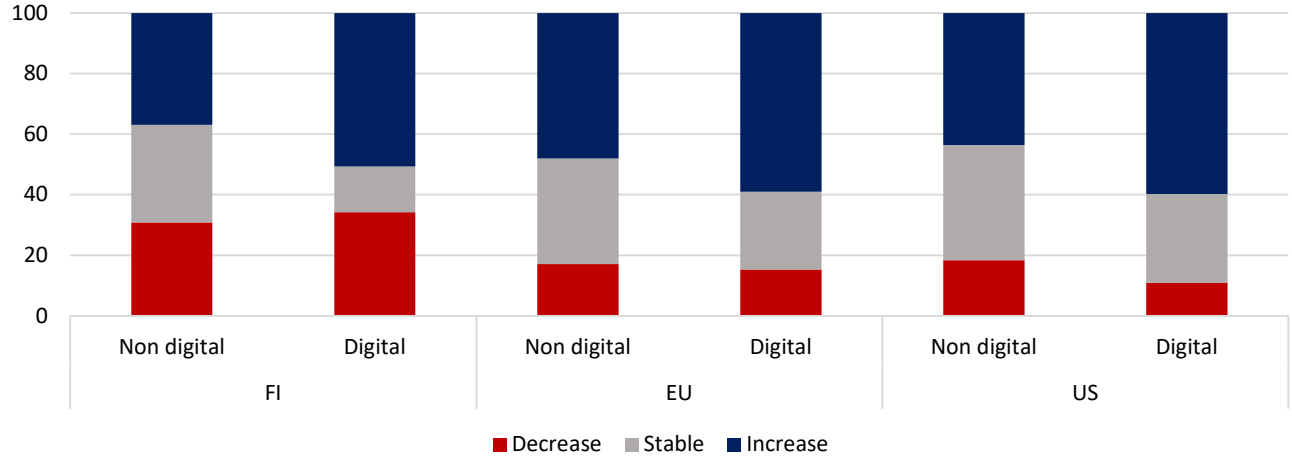
ADOPTION OF DIGITAL TECHNOLOGIES – FINLAND

Median labour productivity (in logarithm)



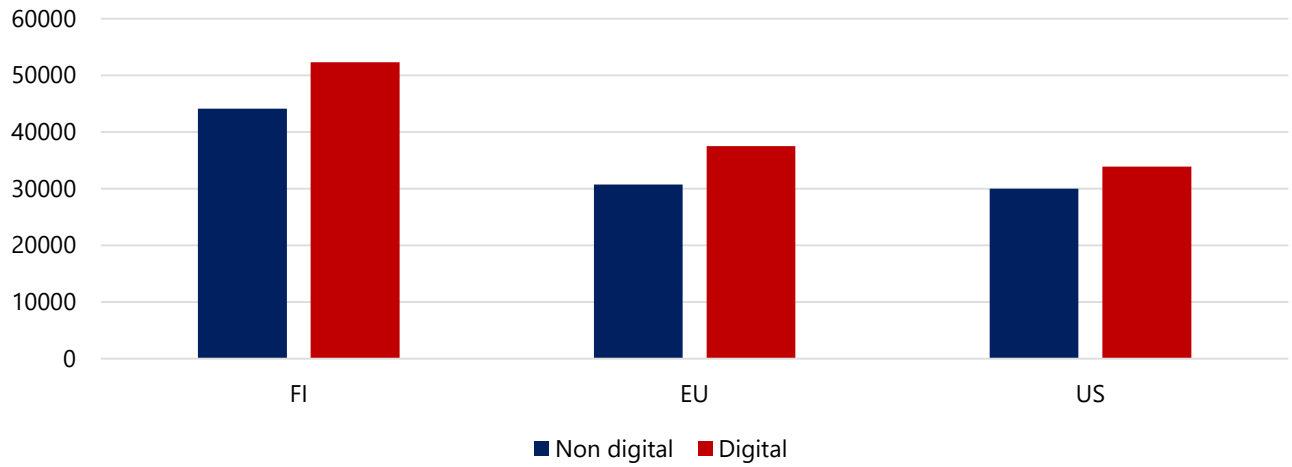
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

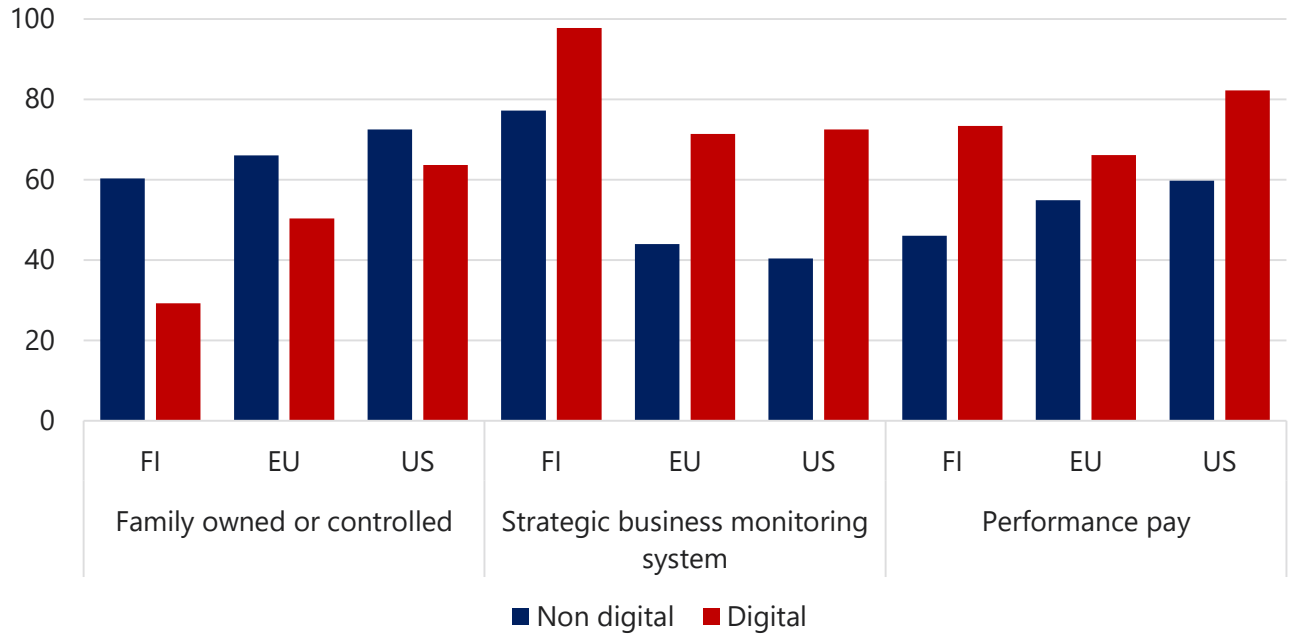
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

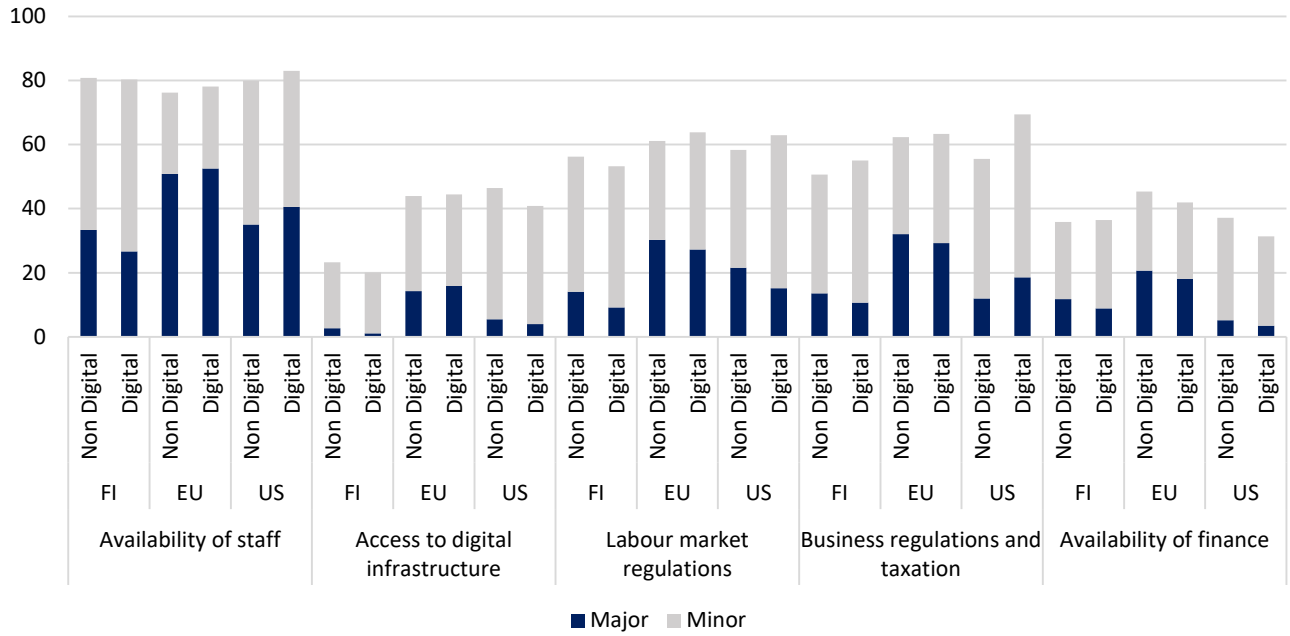
ADOPTION OF DIGITAL TECHNOLOGIES – FINLAND

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

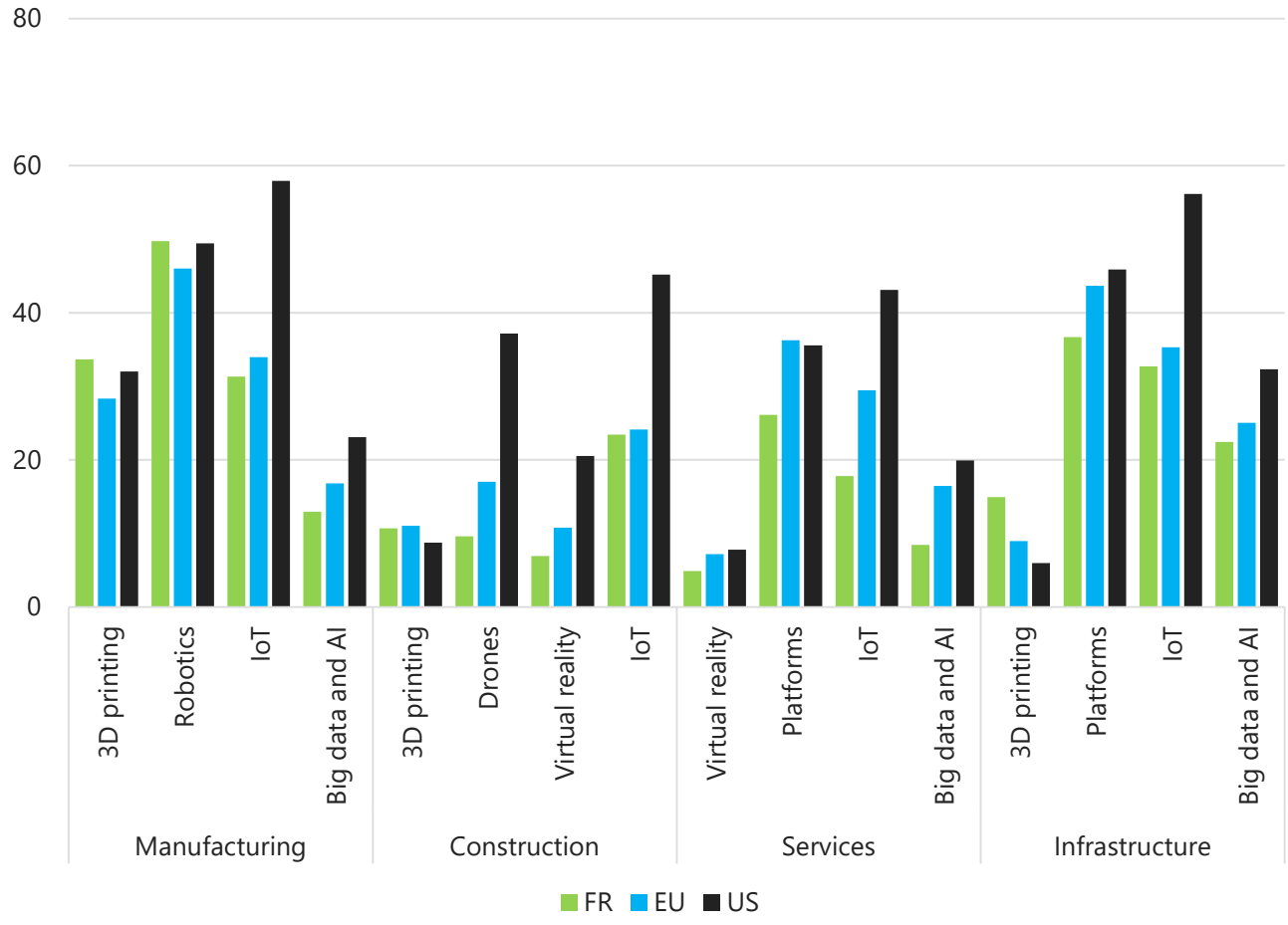


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – FRANCE

- France ranks among the *moderate* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above the EU and US average for 3D printing and robotics.
- Digital adoption rates in France are below the EU and the US average for all sectors.
- About 50% of digital firms report having increased the number of employees in the last three years, compared to less than 45% of non-digital firms.
- Median labour productivity in France is higher than the EU and the US average, however median wage per employee is below the EU average for both digital and non-digital firms.
- Among the reported obstacles to investment, 'lack of availability of staff' is the most cited, immediately followed by 'labour market regulations'. 'Lack of availability of staff' is indicated as a major obstacle especially among digital firms.

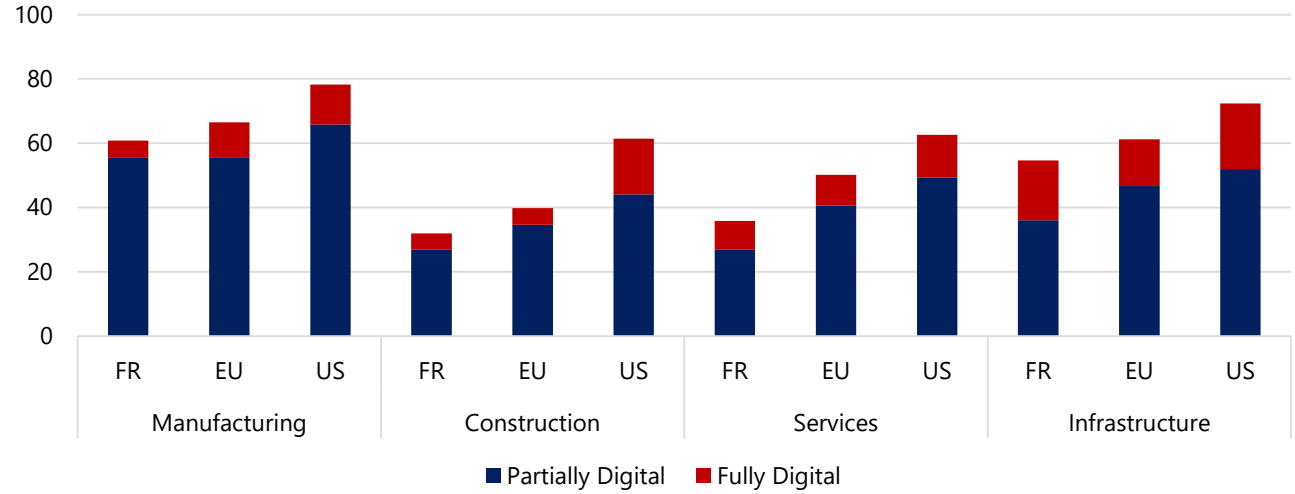
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

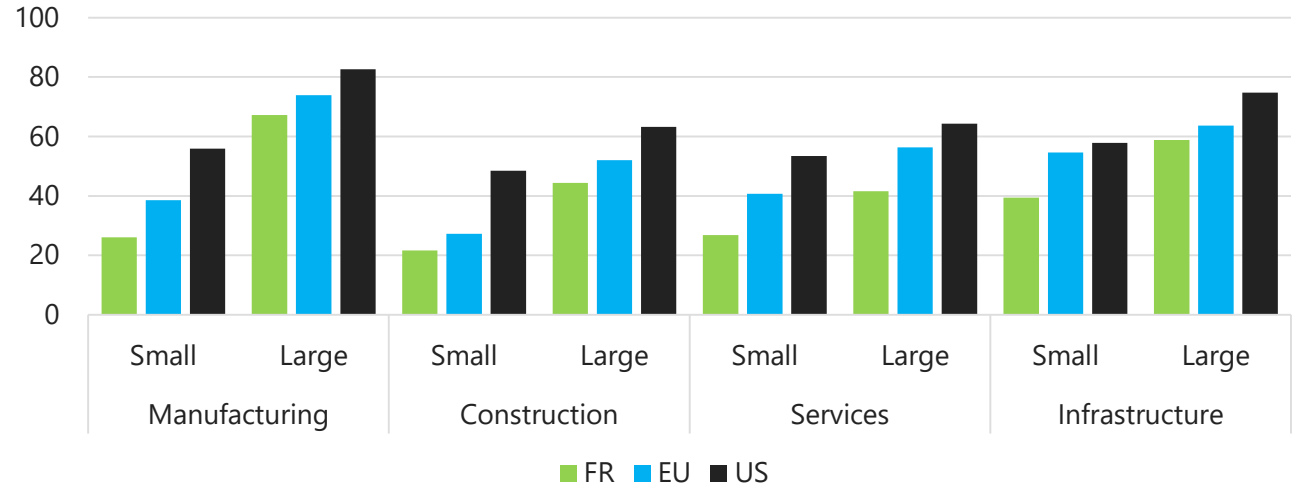
ADOPTION OF DIGITAL TECHNOLOGIES – FRANCE

Digital adoption rates (in % of all firms), by sector



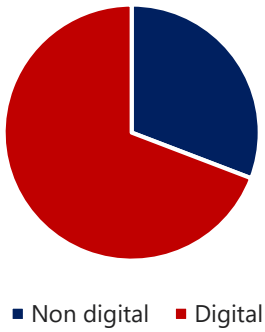
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

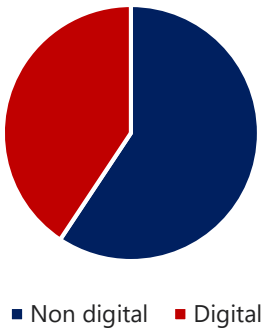


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



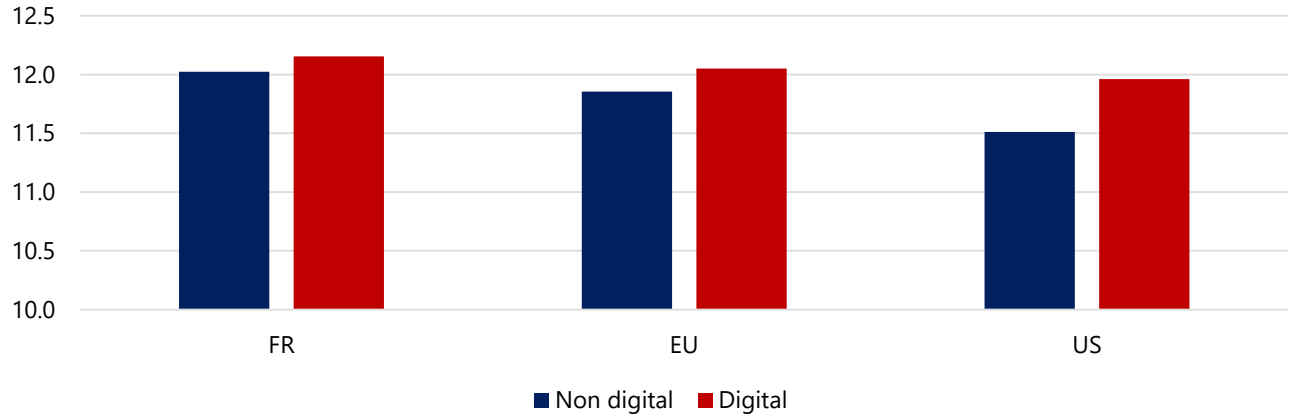
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

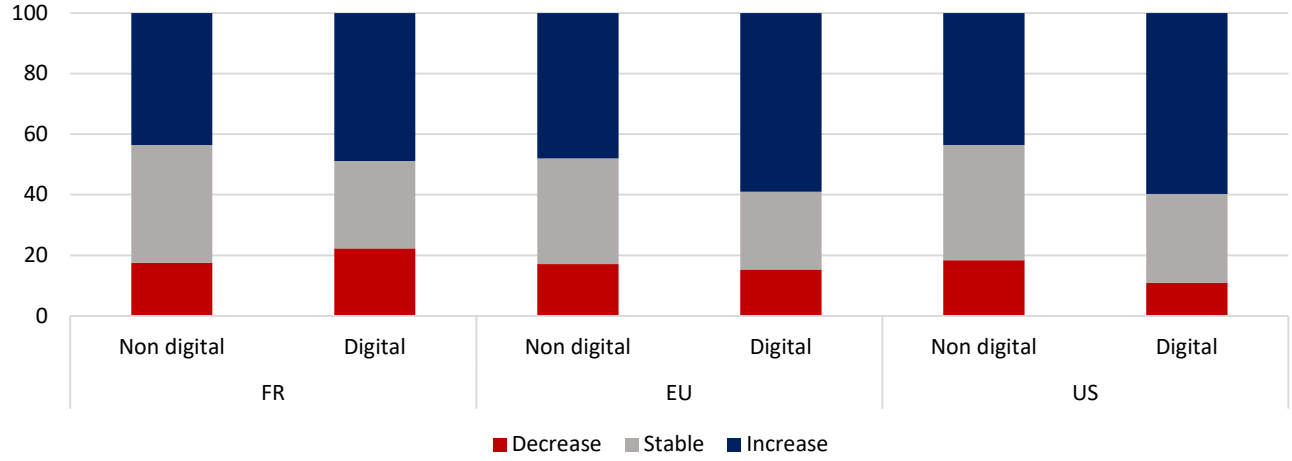
ADOPTION OF DIGITAL TECHNOLOGIES – FRANCE

Median labour productivity (in logarithm)



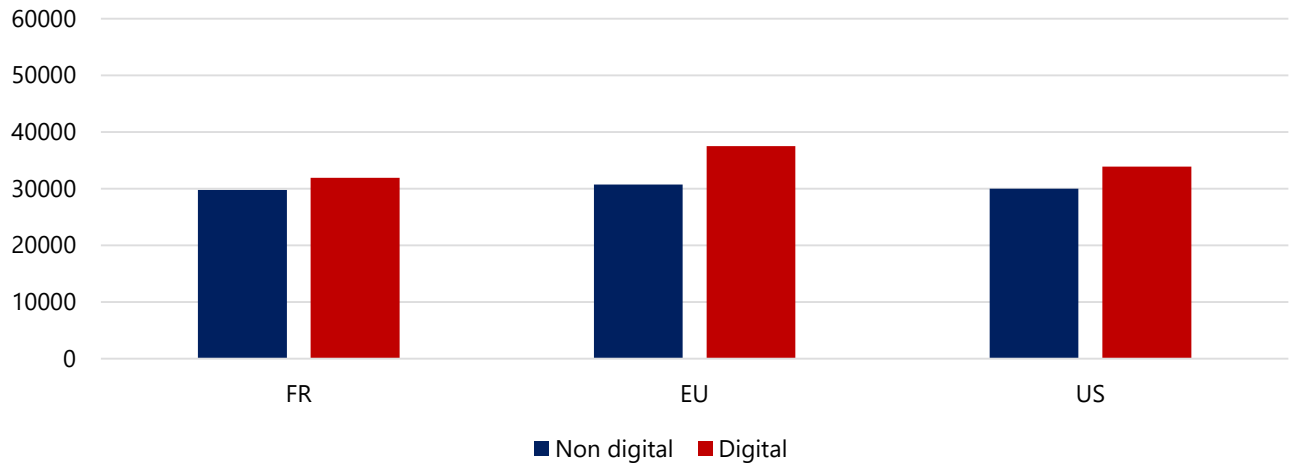
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

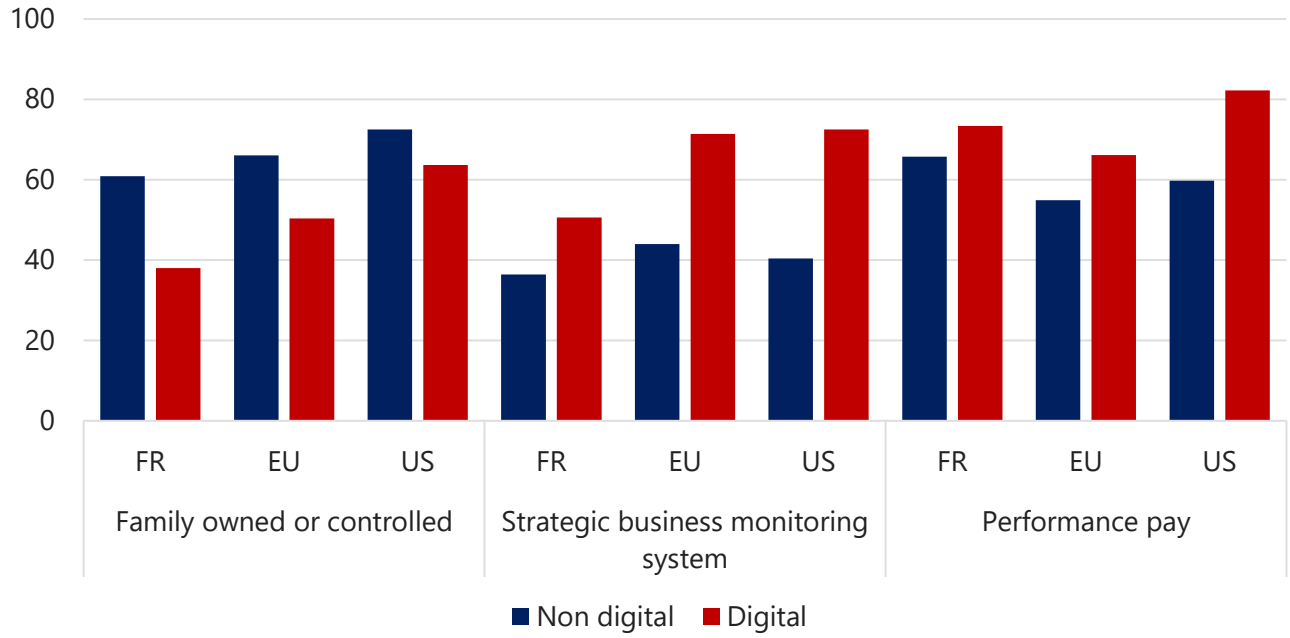
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

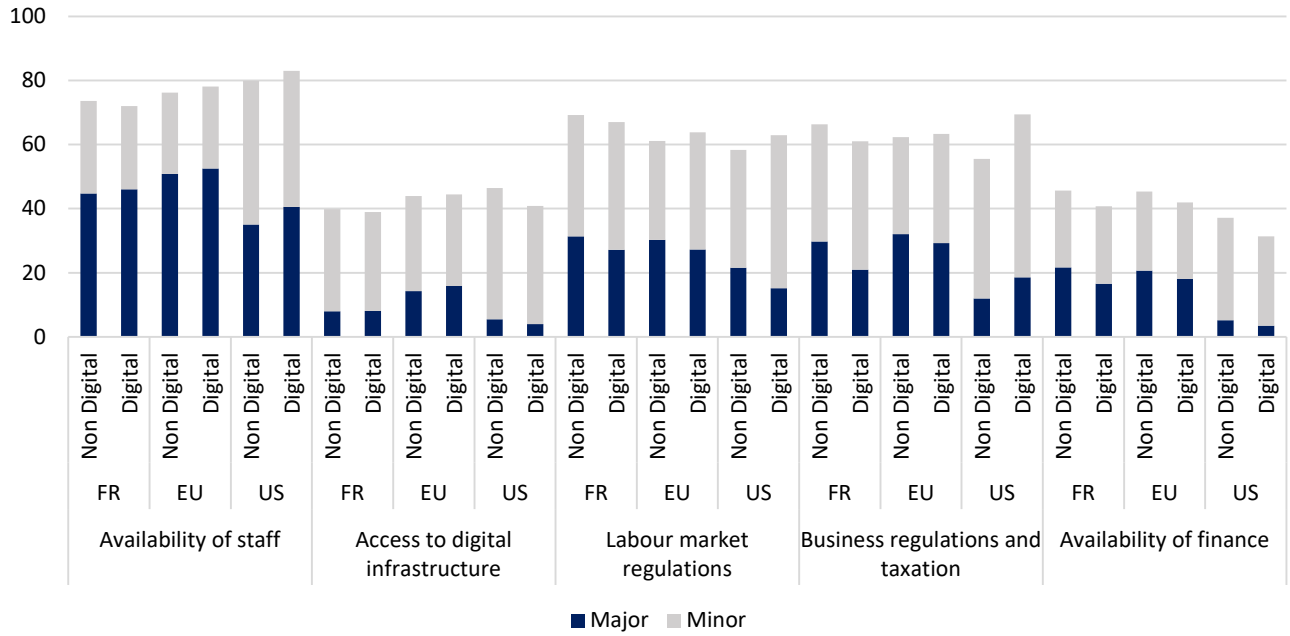
ADOPTION OF DIGITAL TECHNOLOGIES – FRANCE

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

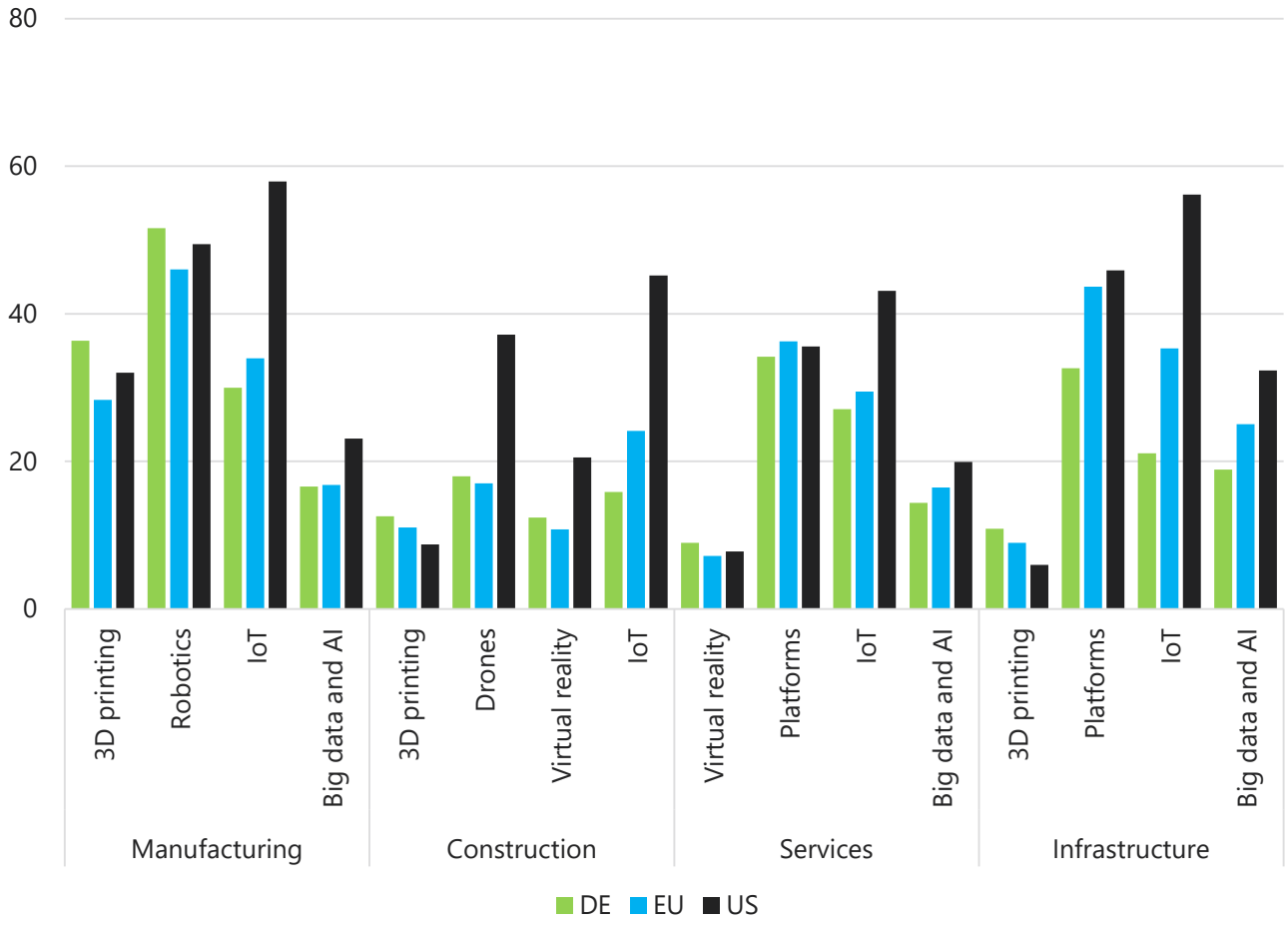


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – GERMANY

- Germany ranks among the *moderate* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above both the EU and US average for robotics, 3D printing and virtual reality technologies.
- Digital adoption rates in Germany are above the EU average for the manufacturing sector. However, German firms lag behind the US average for all sectors.
- More than 65% of digital firms report having increased the number of employees in the last three years compared to 48% of non-digital firms in Germany.
- Median labour productivity is in line with the EU average for both digital and non-digital firms and above the US average.
- Among the reported obstacles to investment, 'lack of availability of staff with the right skills' is the most cited, especially among digital firms.

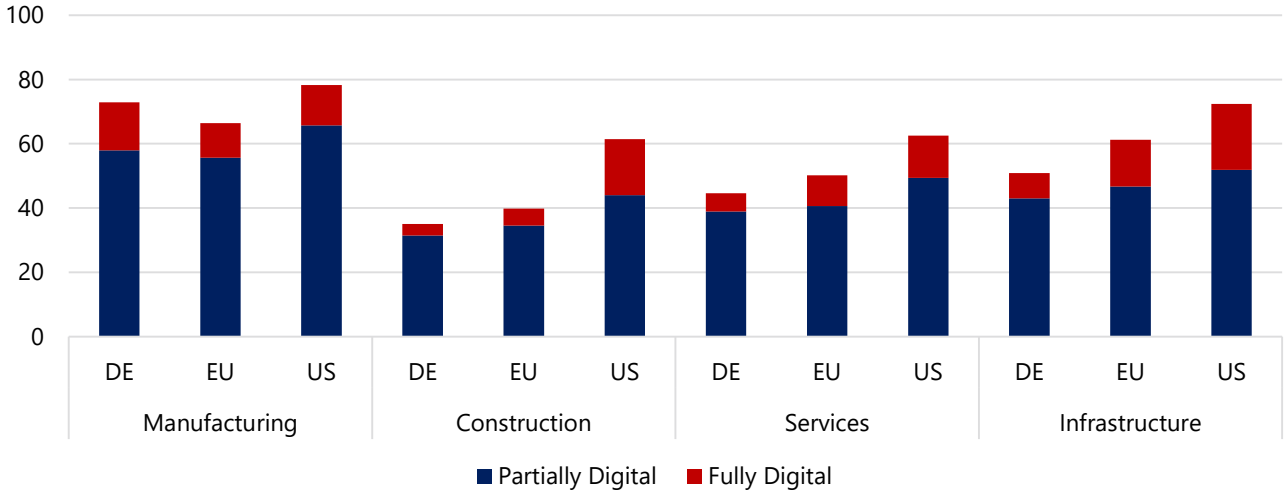
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

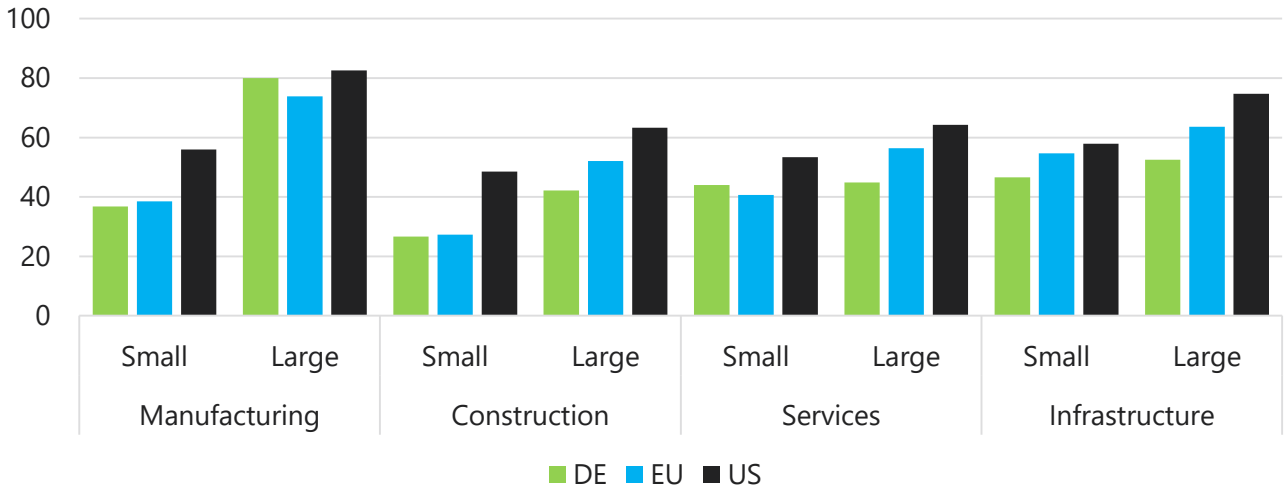
ADOPTION OF DIGITAL TECHNOLOGIES – GERMANY

Digital adoption rates (in % of all firms), by sector



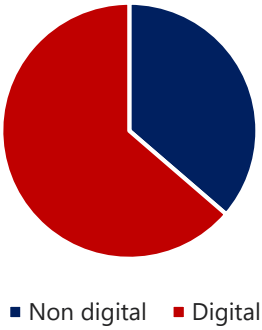
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

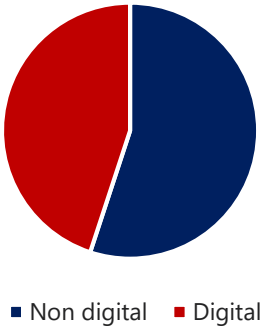


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



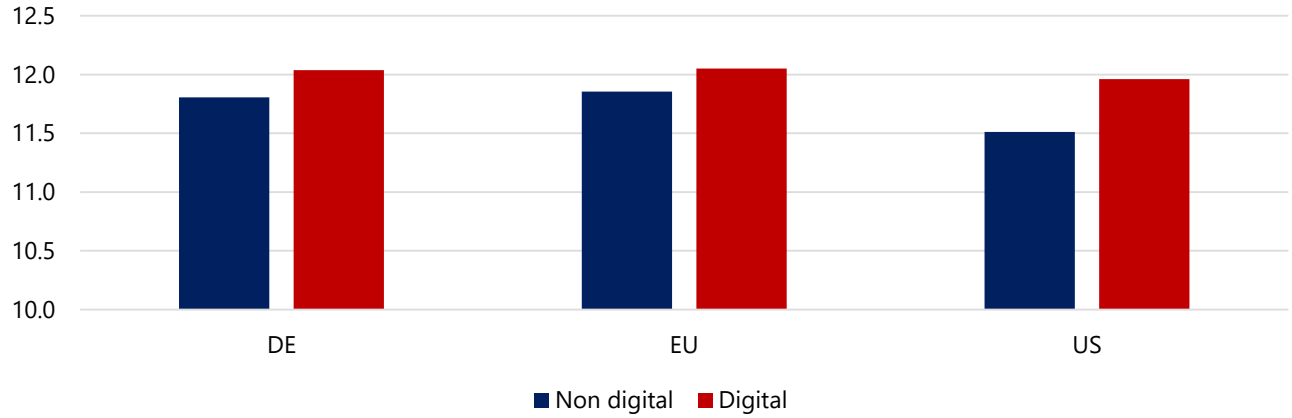
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

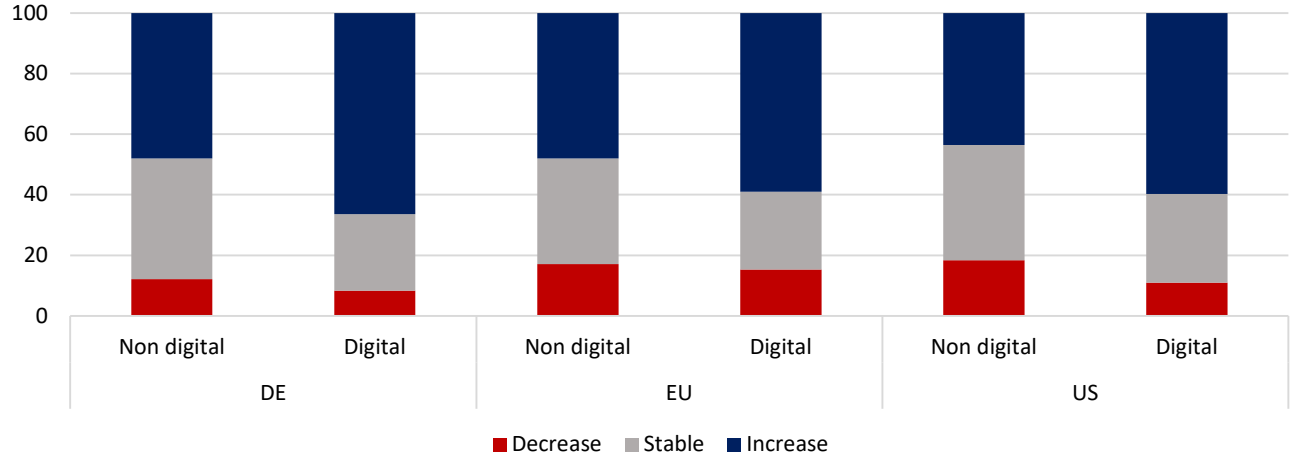
ADOPTION OF DIGITAL TECHNOLOGIES – GERMANY

Median labour productivity (in logarithm)



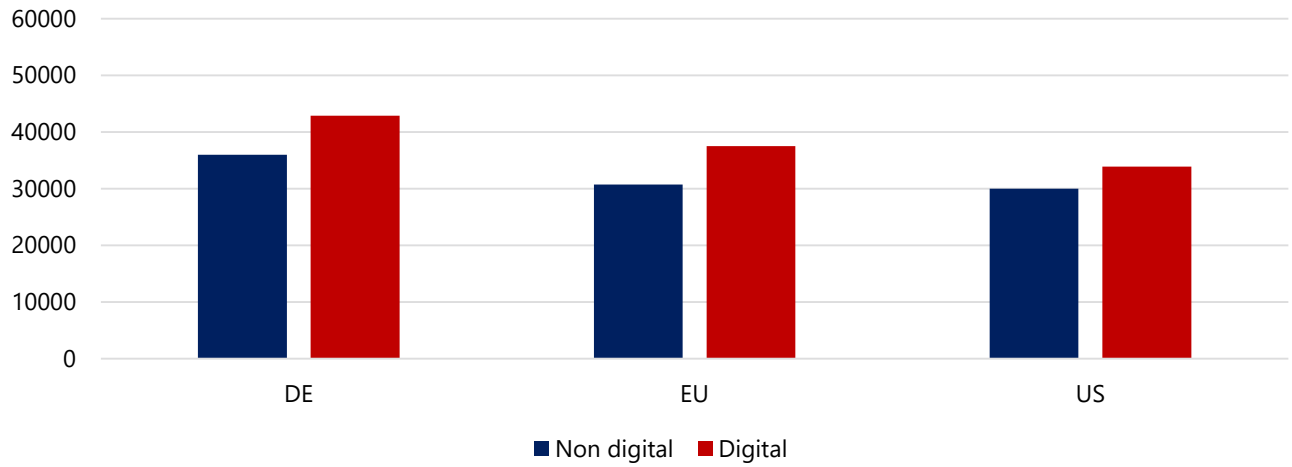
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

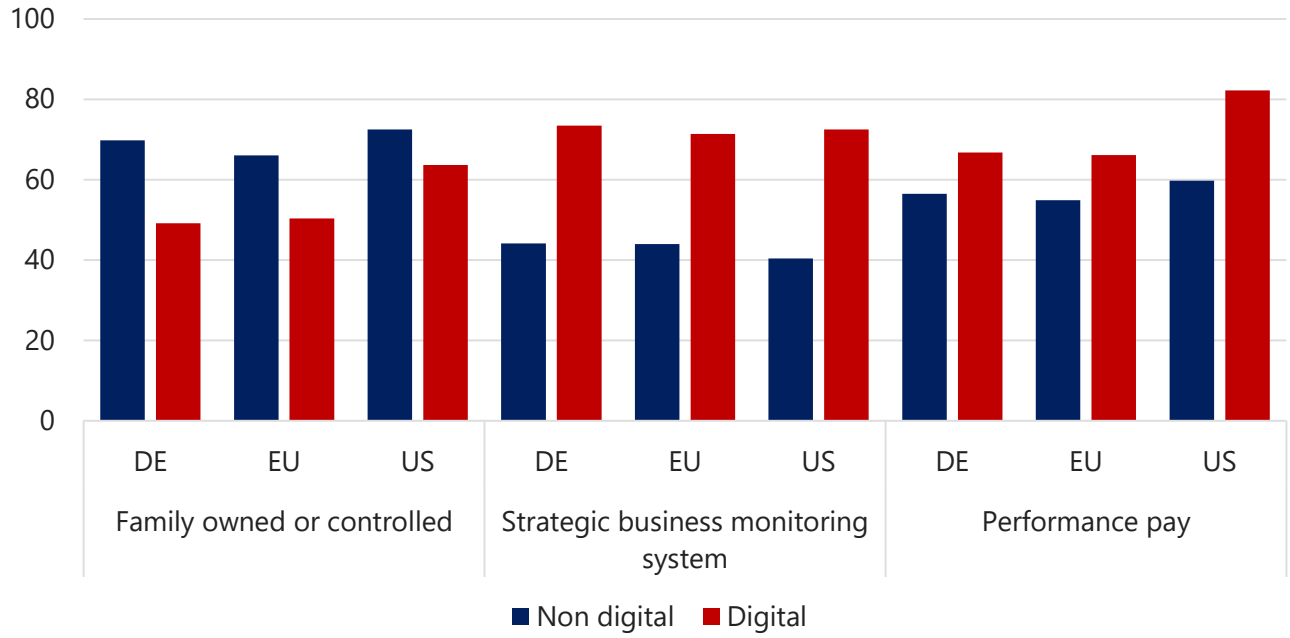
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

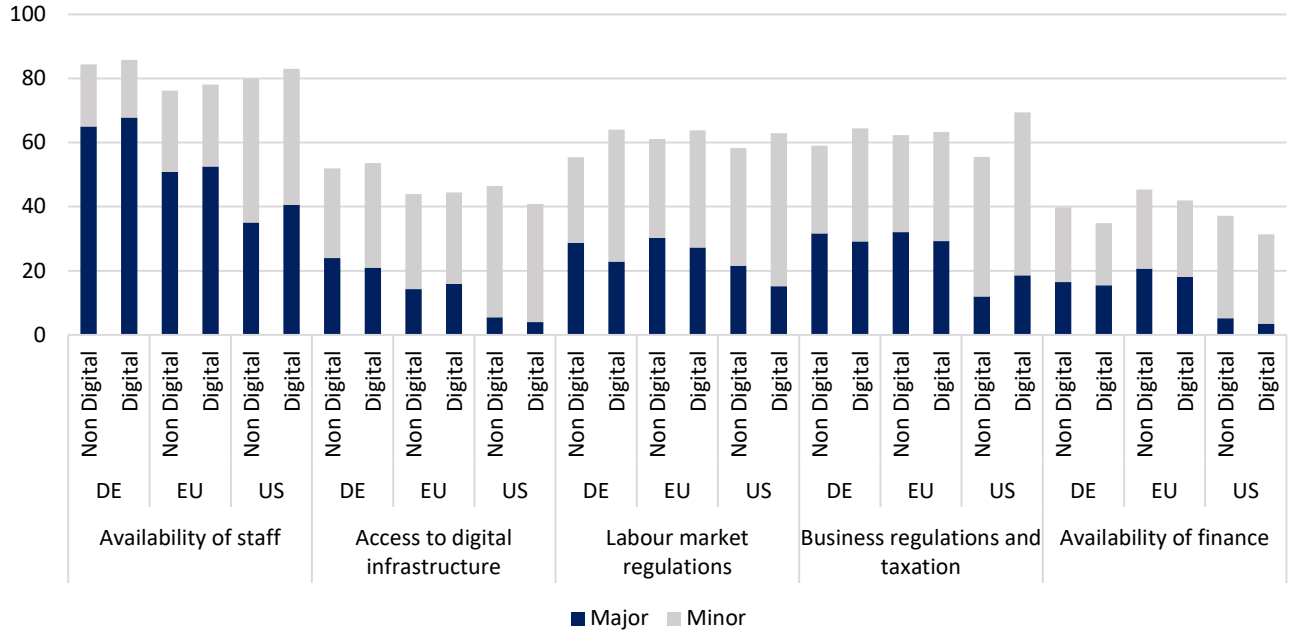
ADOPTION OF DIGITAL TECHNOLOGIES – GERMANY

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

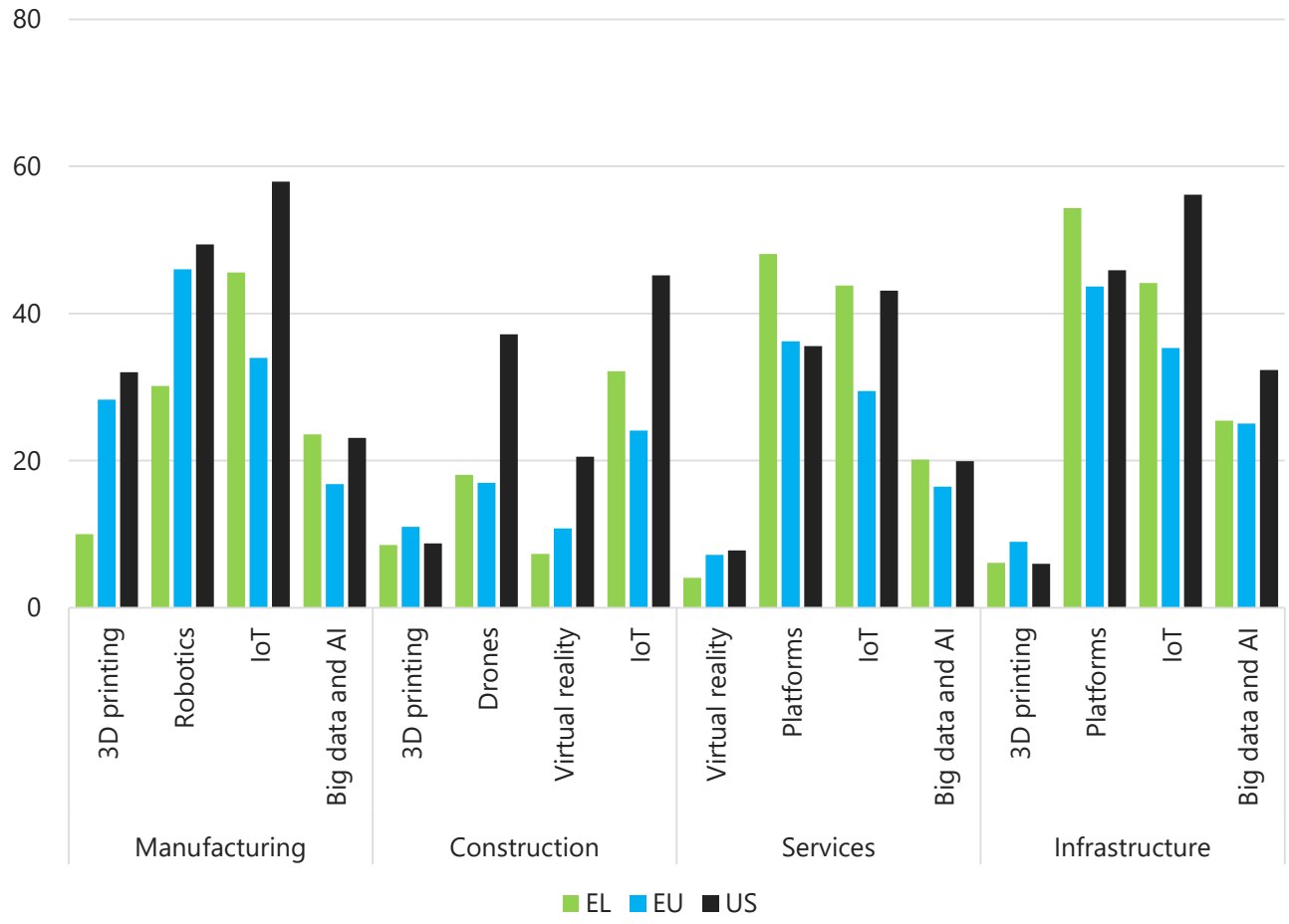


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – GREECE

- Greece ranks among the *modest* countries on the EIBIS Digitalisation Index.
- By contrast the adoption rate of single technologies is above both the EU and US average for platforms.
- Digital adoption rates in Greece are above the EU average for the construction, services and infrastructure sectors and also above the US average for the services sector.
- Almost 50% of digital firms report having increased the number of employees in the last three years, compared to less than 35% of non-digital firms.
- Median wage per employee is below the EU average for digital and non-digital firms in Greece. Among digital firms, median wage per employee is 1.3 times higher compared to non-digital firms.
- Both digital and non-digital Greek firms identify obstacles to investment relatively frequently, notably regulations and taxation; unlike the EU average, 'lack of availability of skills' is not frequently reported but is the only obstacle significantly affecting digital firms more than non-digital ones.

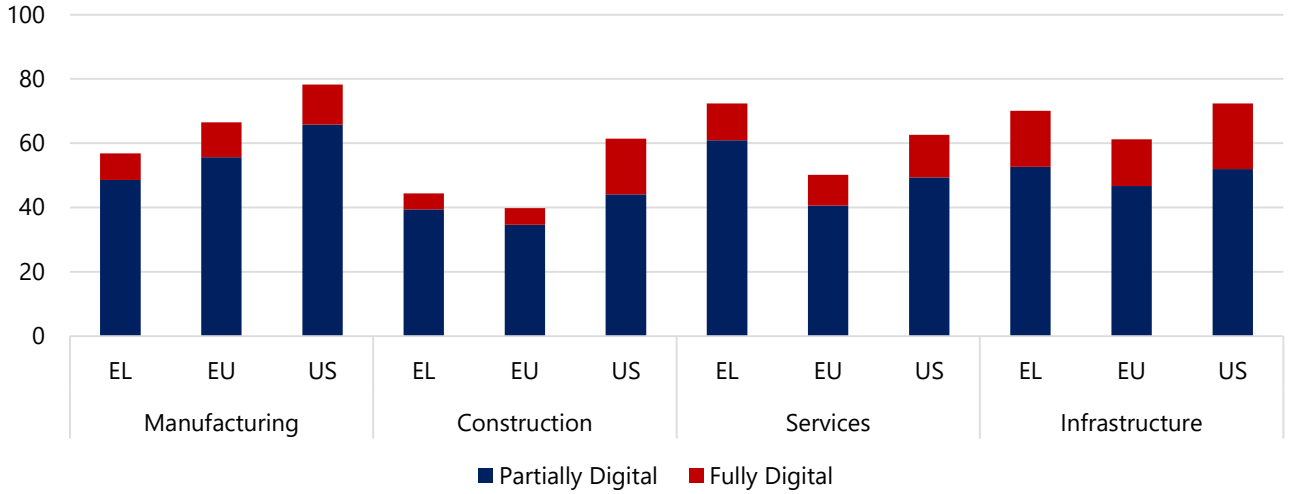
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

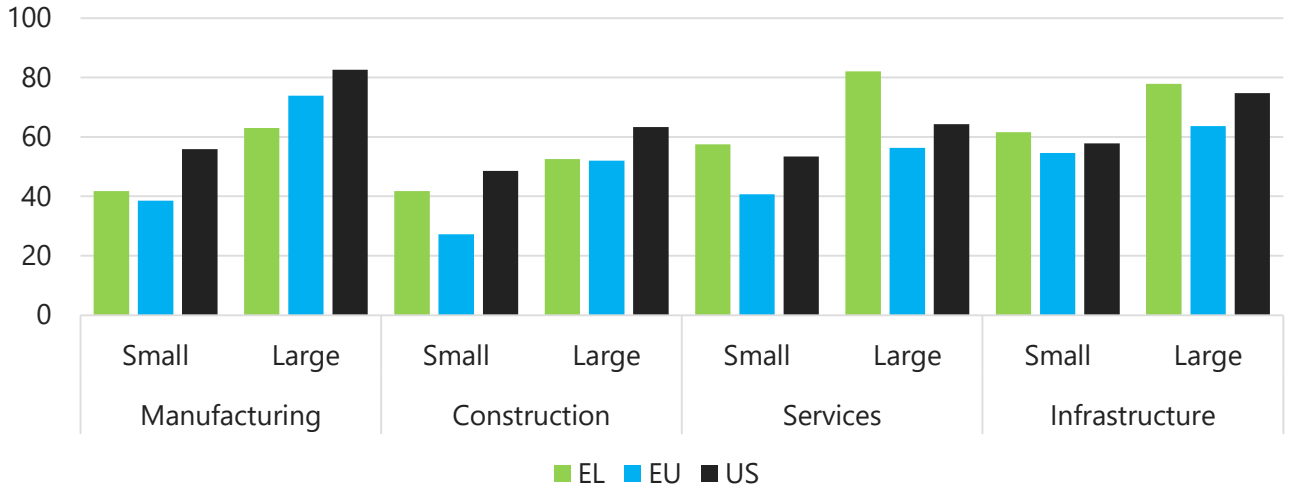
ADOPTION OF DIGITAL TECHNOLOGIES – GREECE

Digital adoption rates (in % of all firms), by sector



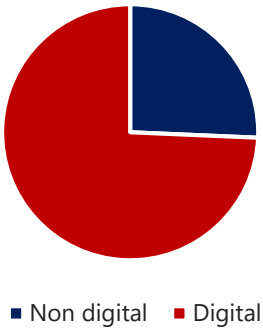
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

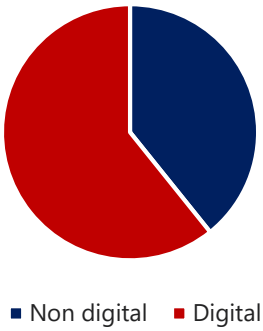


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



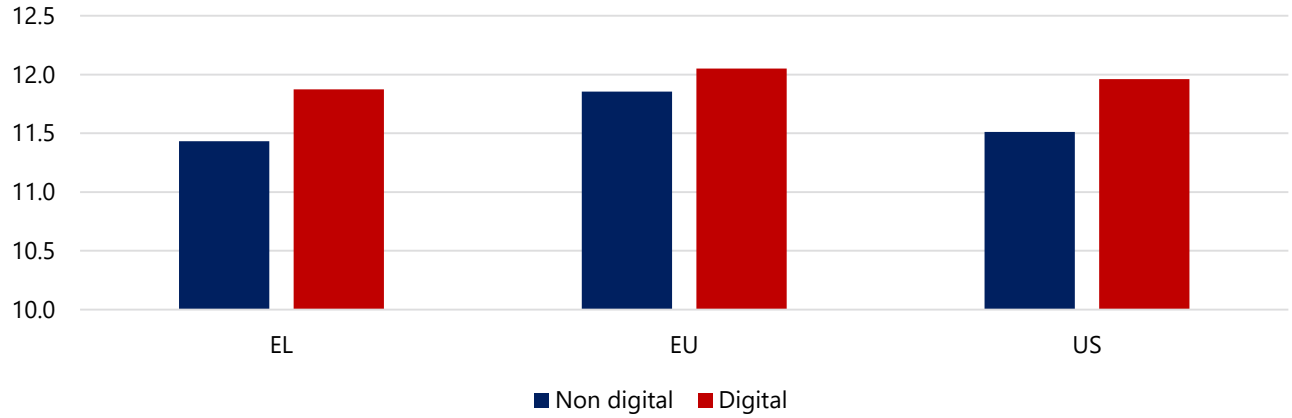
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

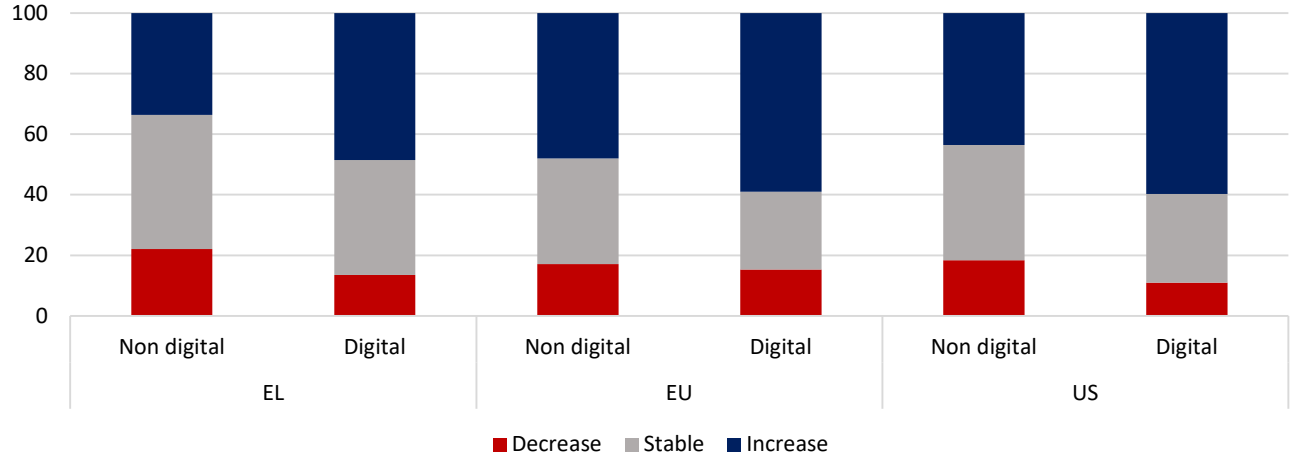
ADOPTION OF DIGITAL TECHNOLOGIES – GREECE

Median labour productivity (in logarithm)



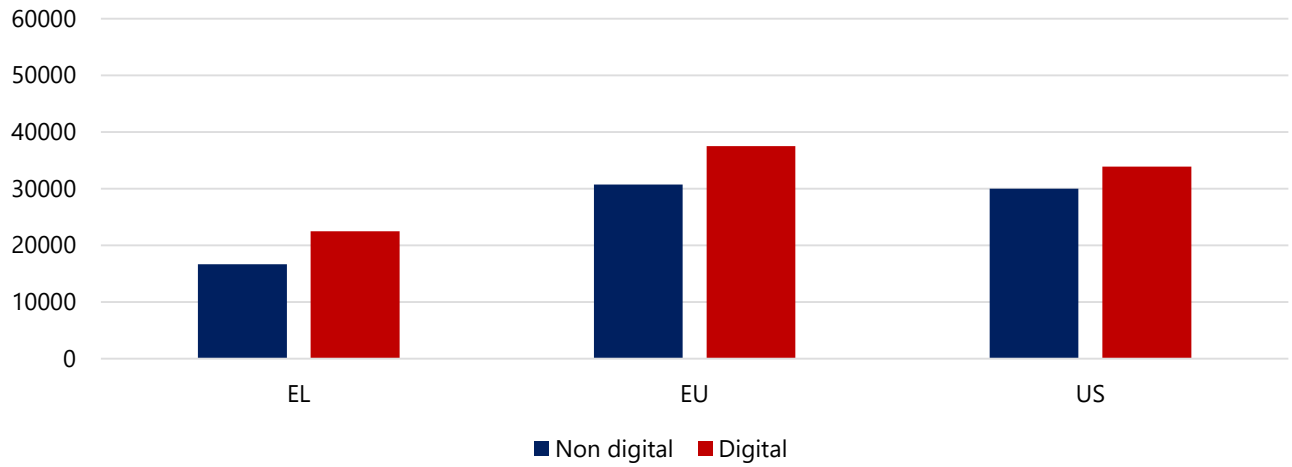
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

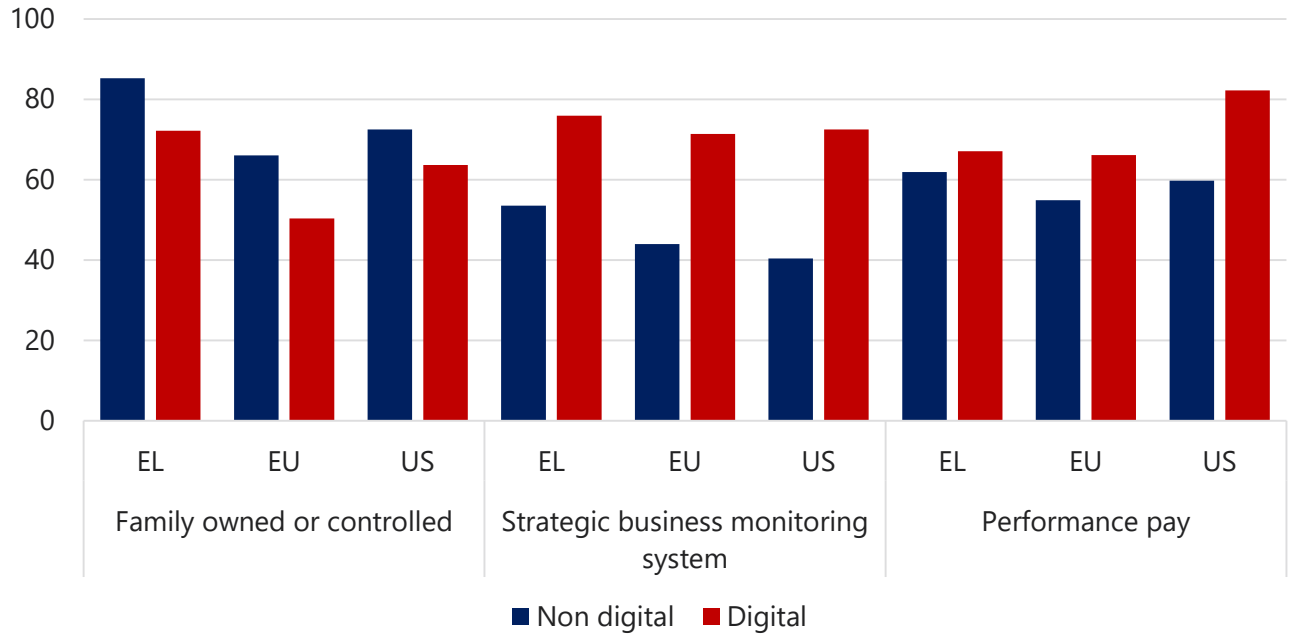
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

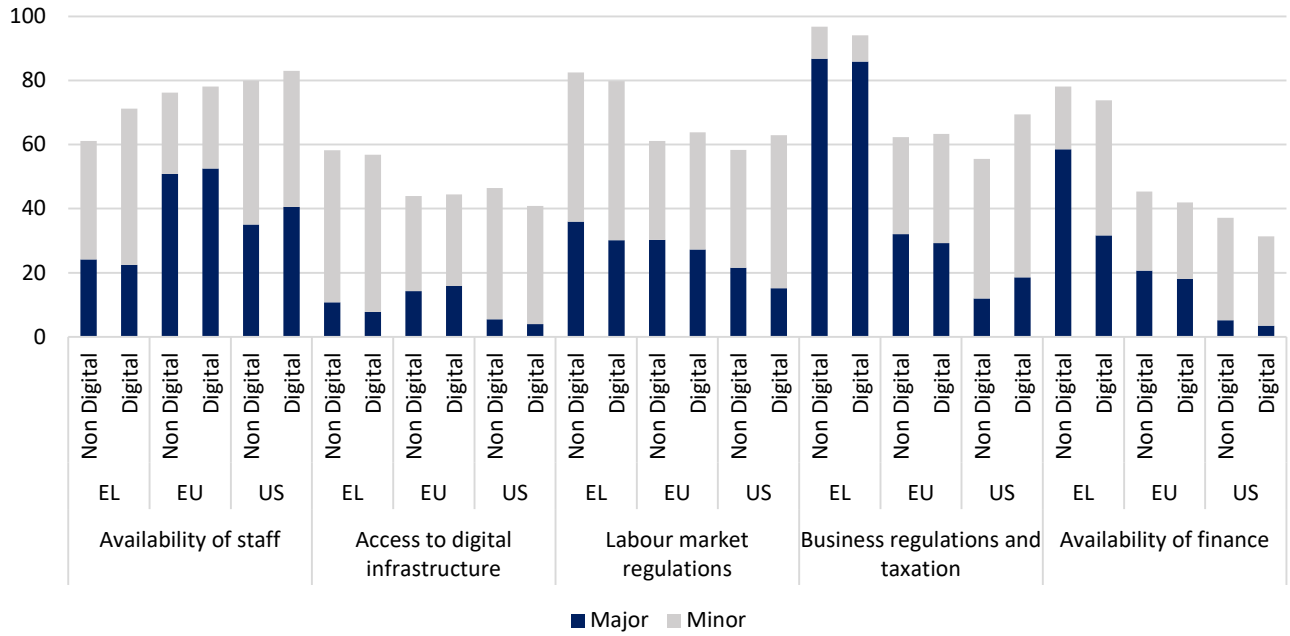
ADOPTION OF DIGITAL TECHNOLOGIES – GREECE

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

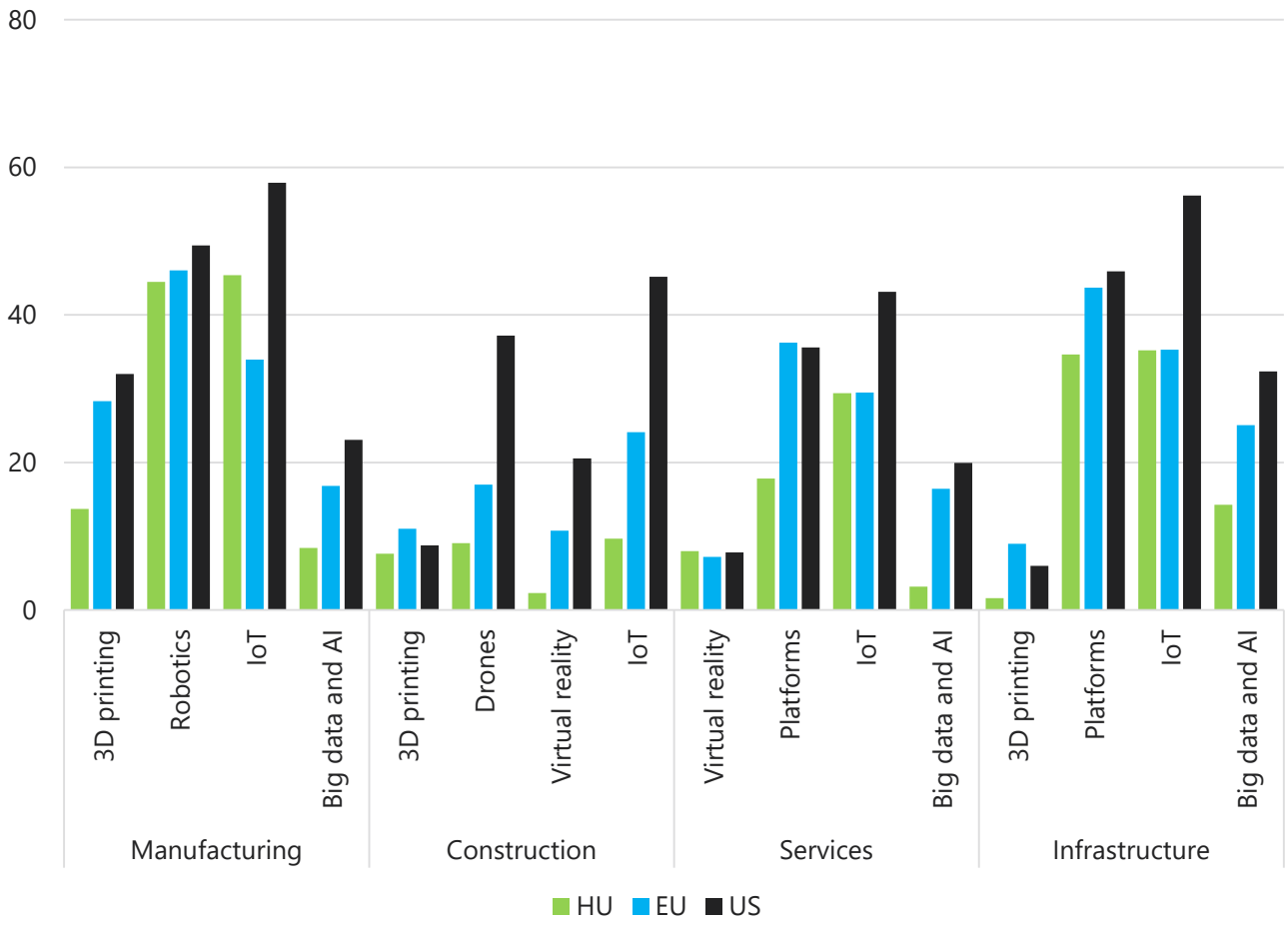


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – HUNGARY

- Hungary ranks among the *moderate* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above the EU average for IoT in the manufacturing sector and slightly above the US average for virtual reality in the services sector.
- Digital adoption rates in Hungary are below both the EU and the US average for all sectors.
- More than 64% of digital firms report having increased the number of employees in the last three years, compared to less than 50% of non-digital firms.
- Median wage per employee for digital firms in Hungary is 2.5 times lower than the EU average. There is a significant gap in wages between digital and non-digital firms.
- 'Lack of availability of staff' is the most cited as major obstacle to investment, especially by digital firms.

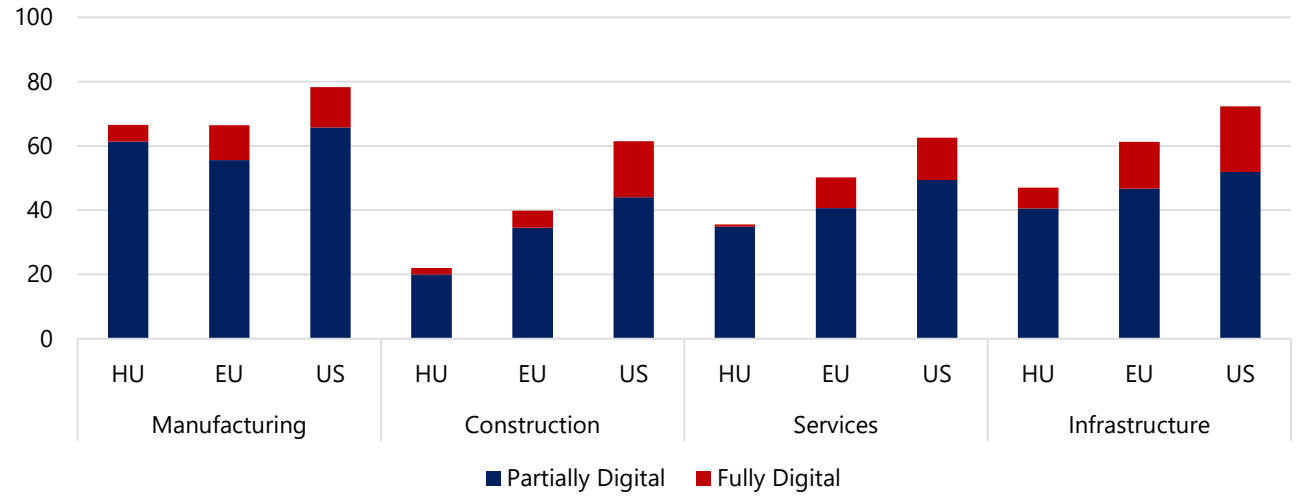
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

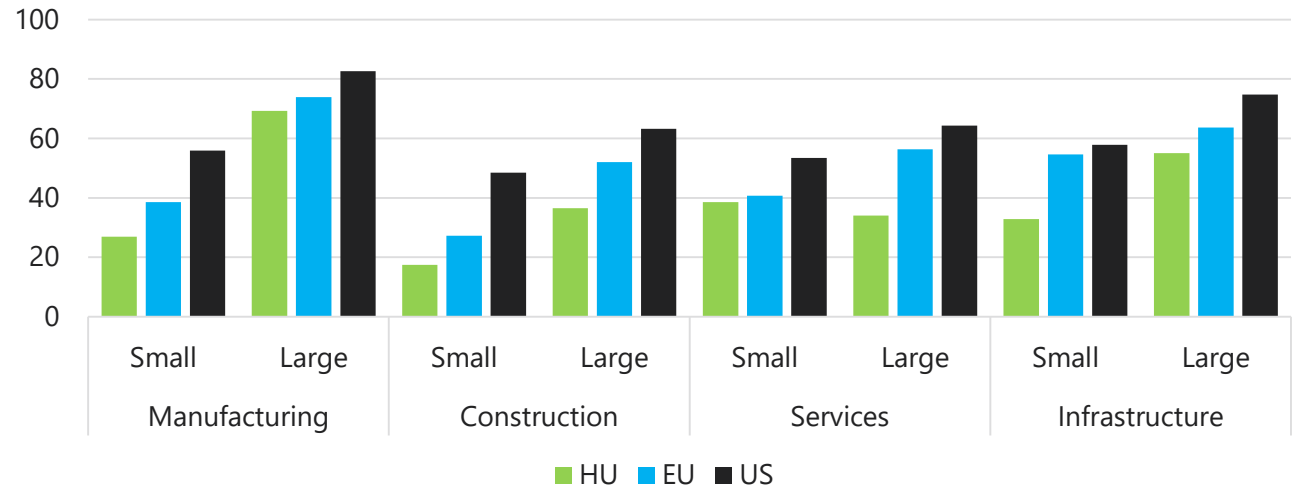
ADOPTION OF DIGITAL TECHNOLOGIES – HUNGARY

Digital adoption rates (in % of all firms), by sector



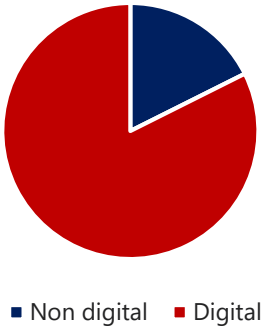
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

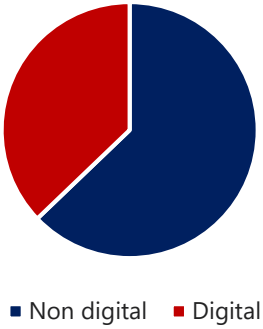


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



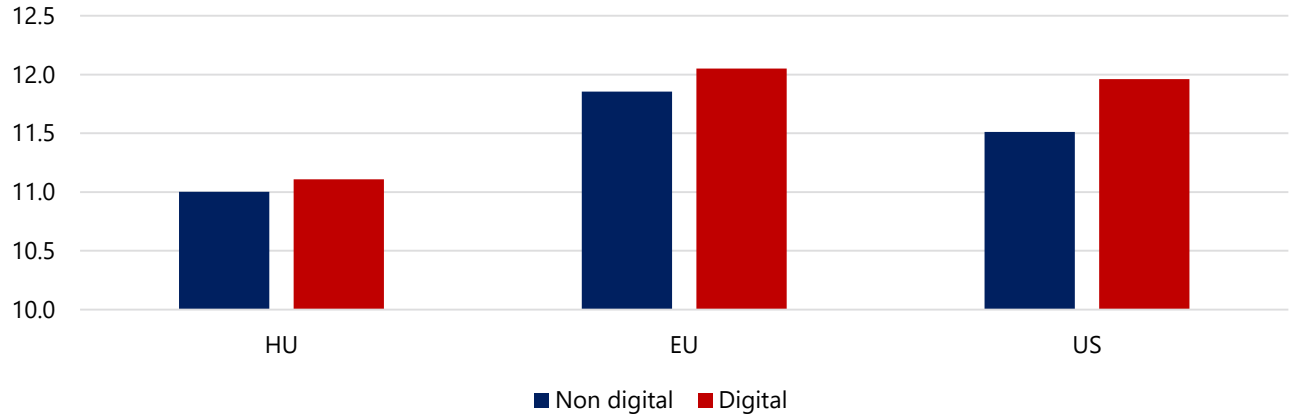
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

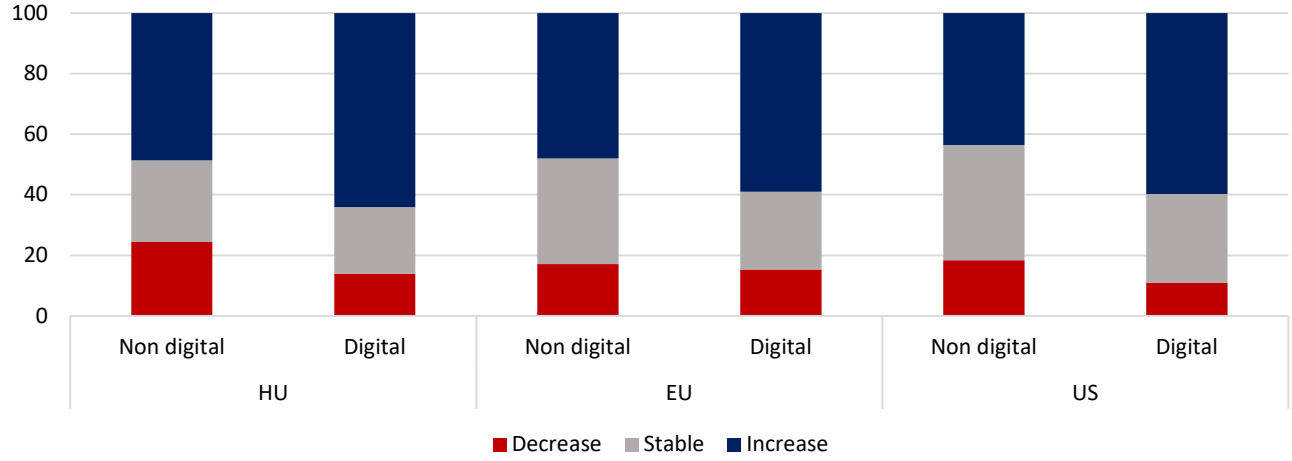
ADOPTION OF DIGITAL TECHNOLOGIES – HUNGARY

Median labour productivity (in logarithm)



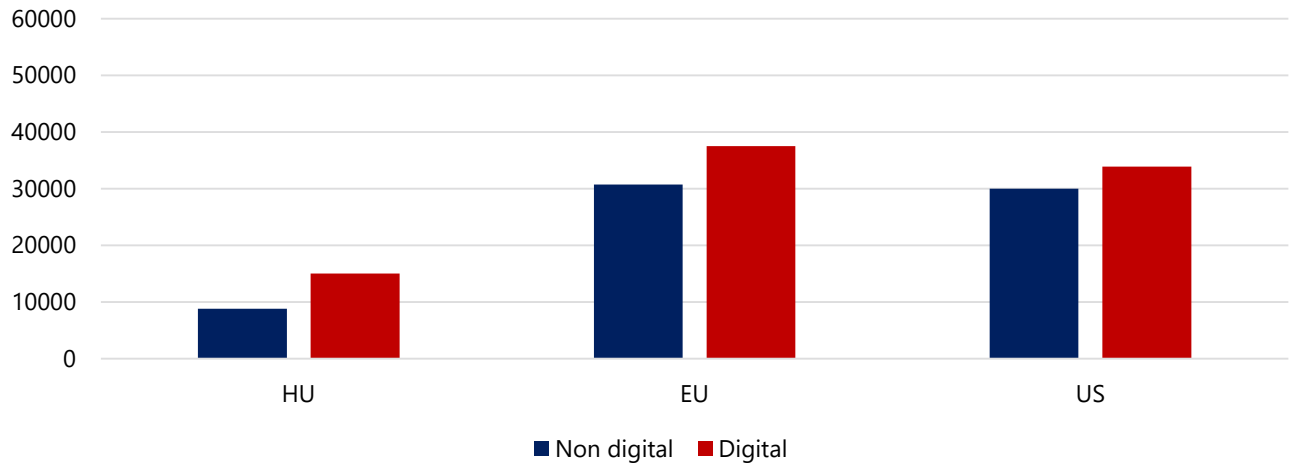
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

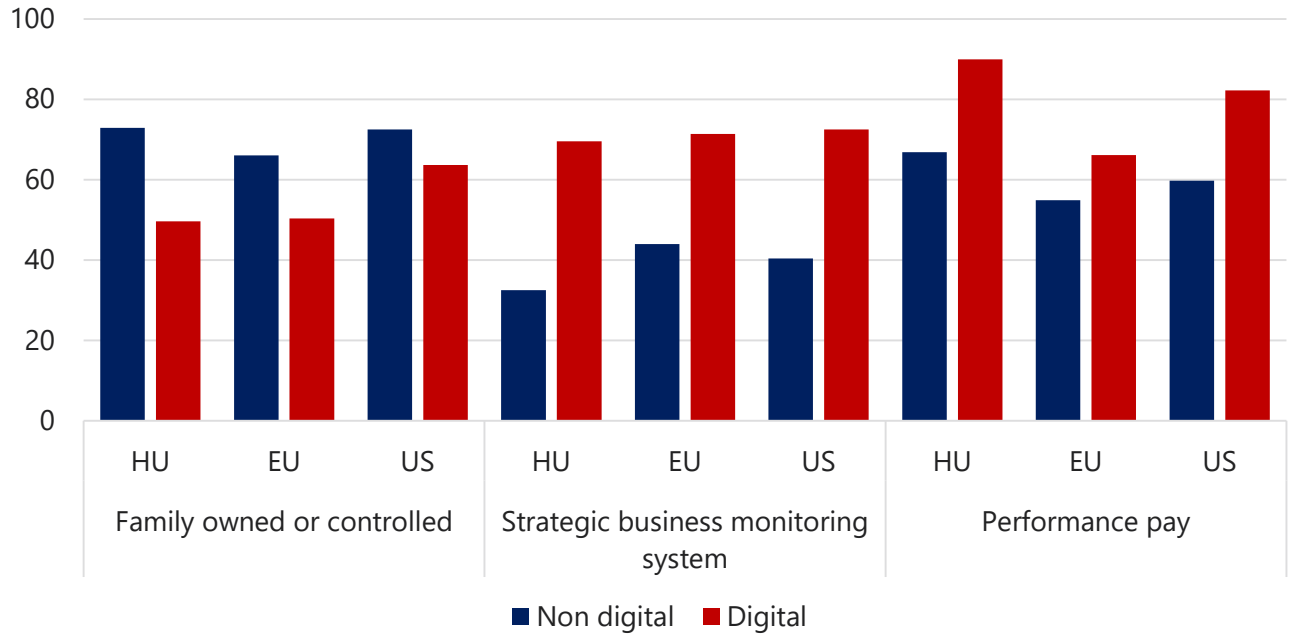
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

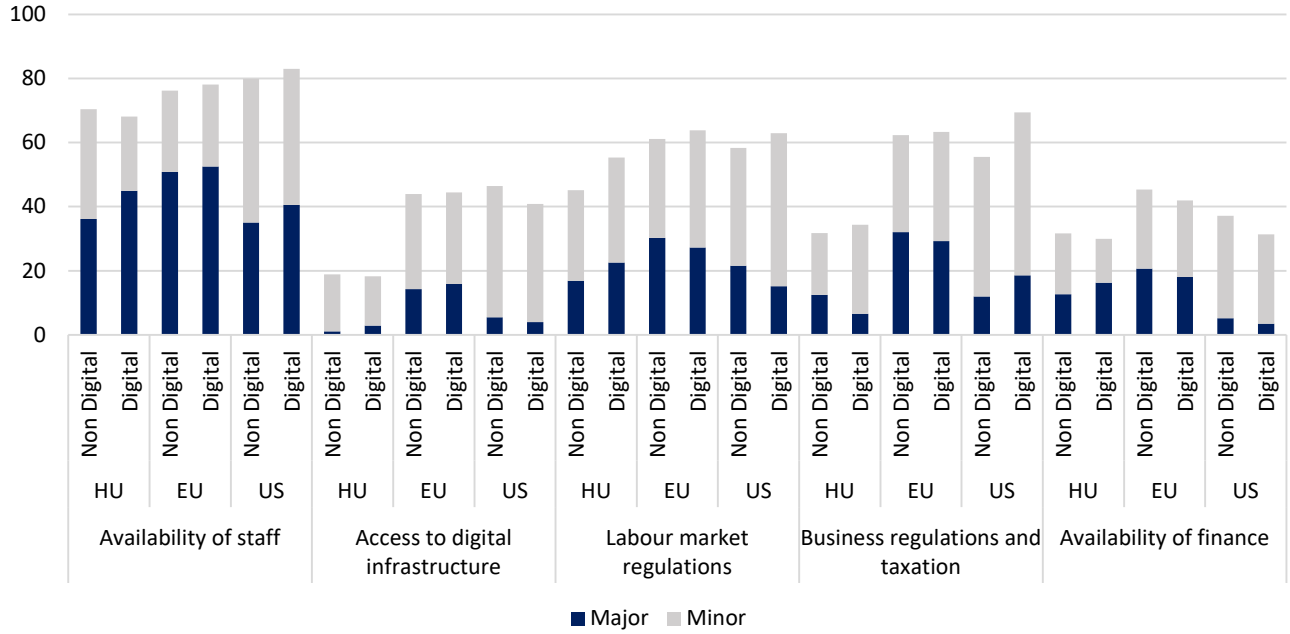
ADOPTION OF DIGITAL TECHNOLOGIES – HUNGARY

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

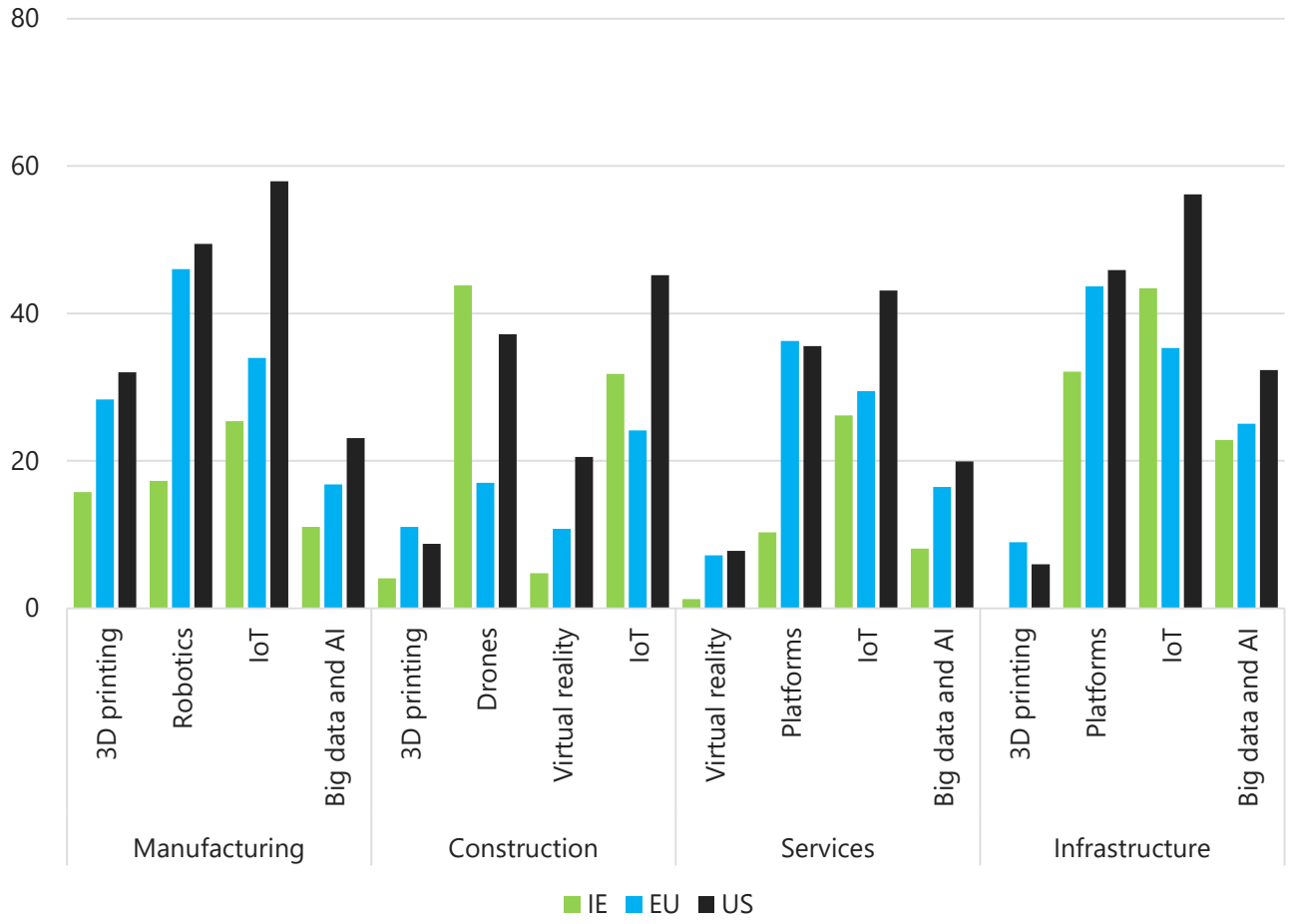


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – IRELAND

- Ireland ranks among the *modest* countries on the EIBIS Digitalisation Index.
- Ireland's construction sector's adoption rate of single technologies is the only one to exceed those of EU and US.
- Digital adoption rates in Ireland are above the EU average for the construction sector but behind the US average for all sectors.
- Median labour productivity is slightly higher for non-digital firms than digital firms in Ireland.
- Median wage per employee is 1.2 times higher for digital than non-digital firms, in line with the EU and the US average.
- Irish digital firms identify relatively frequently obstacles to investment. While 'lack of availability of staff' is the most cited, regulations and lack of access to 'digital infrastructure' affect a relatively large share of digital firms .

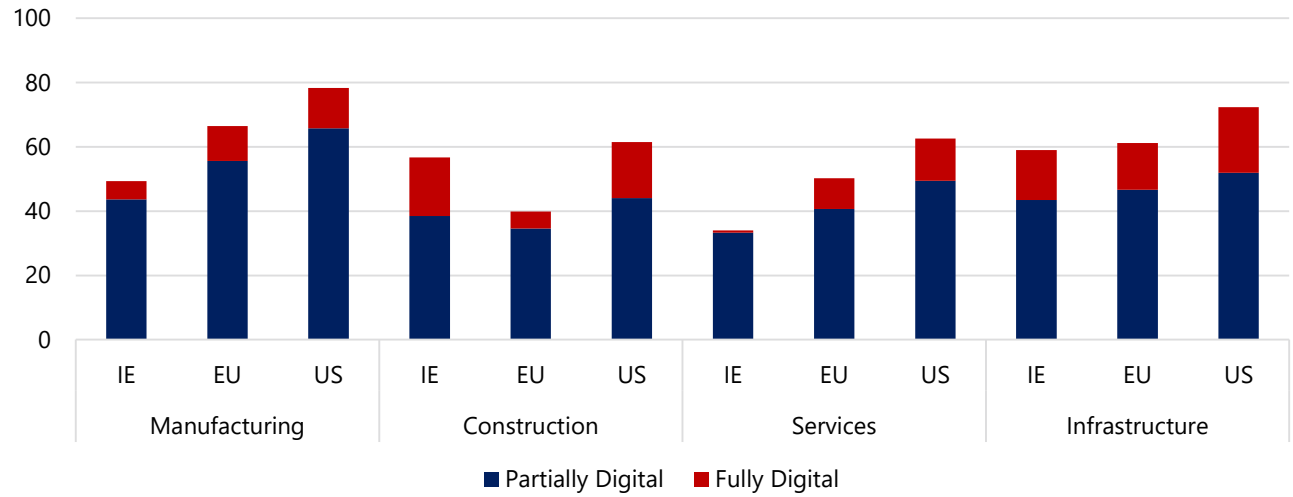
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

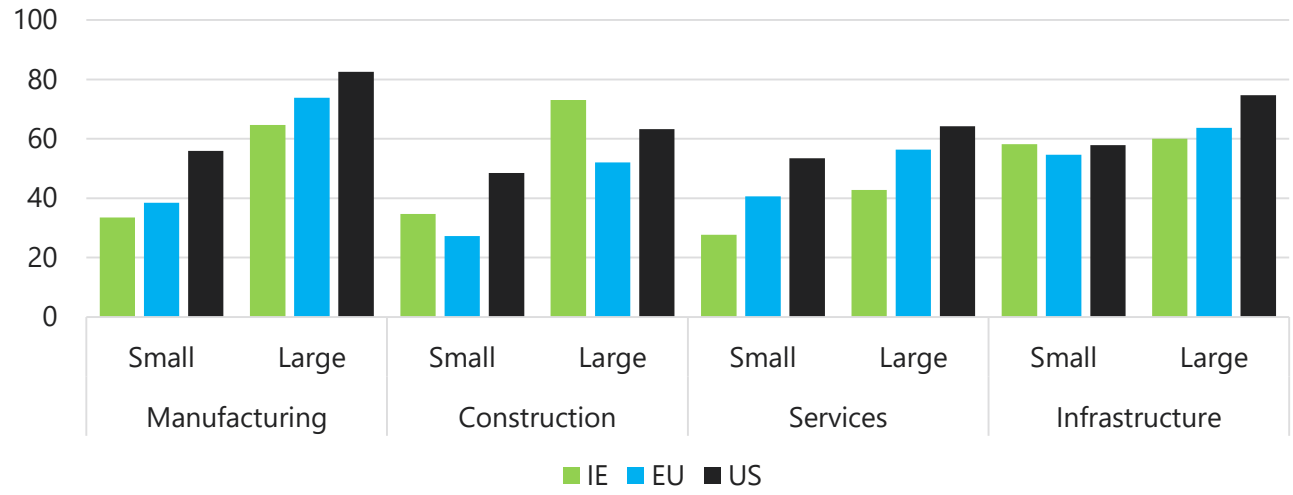
ADOPTION OF DIGITAL TECHNOLOGIES – IRELAND

Digital adoption rates (in % of all firms), by sector



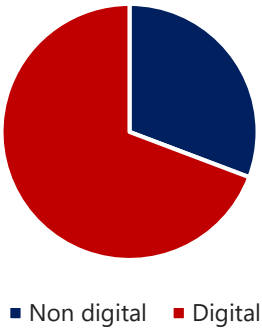
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

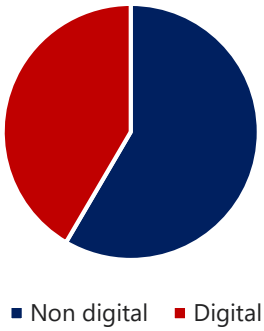


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



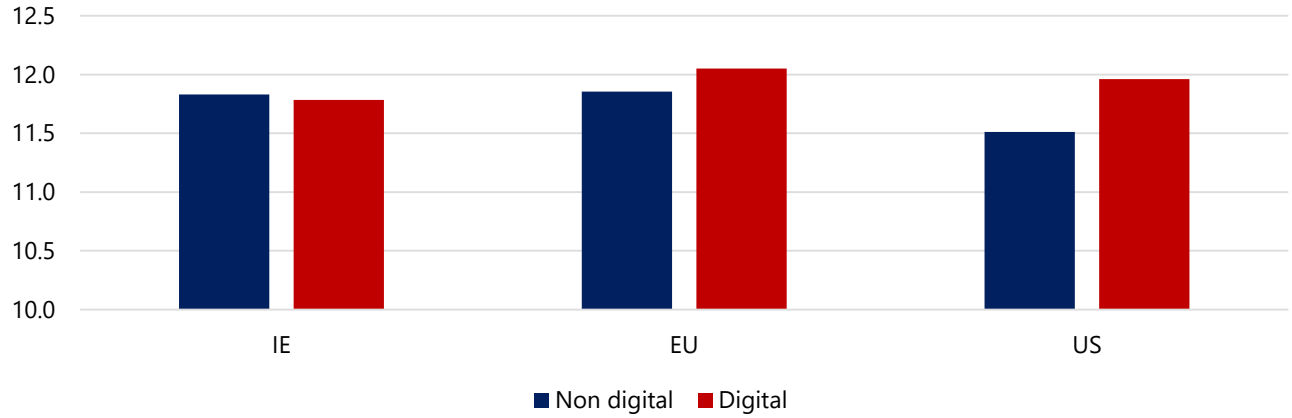
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

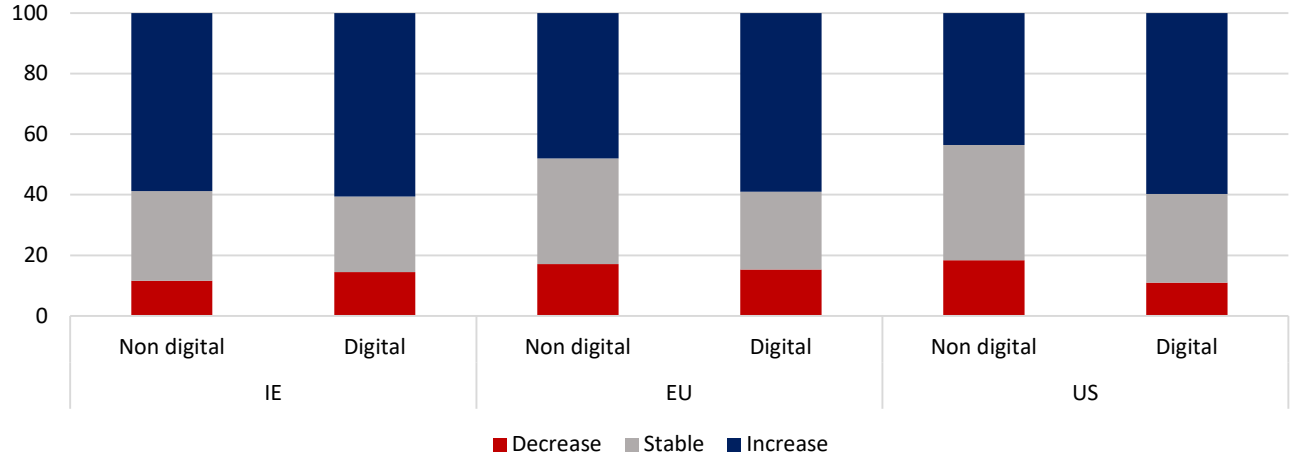
ADOPTION OF DIGITAL TECHNOLOGIES – IRELAND

Median labour productivity (in logarithm)



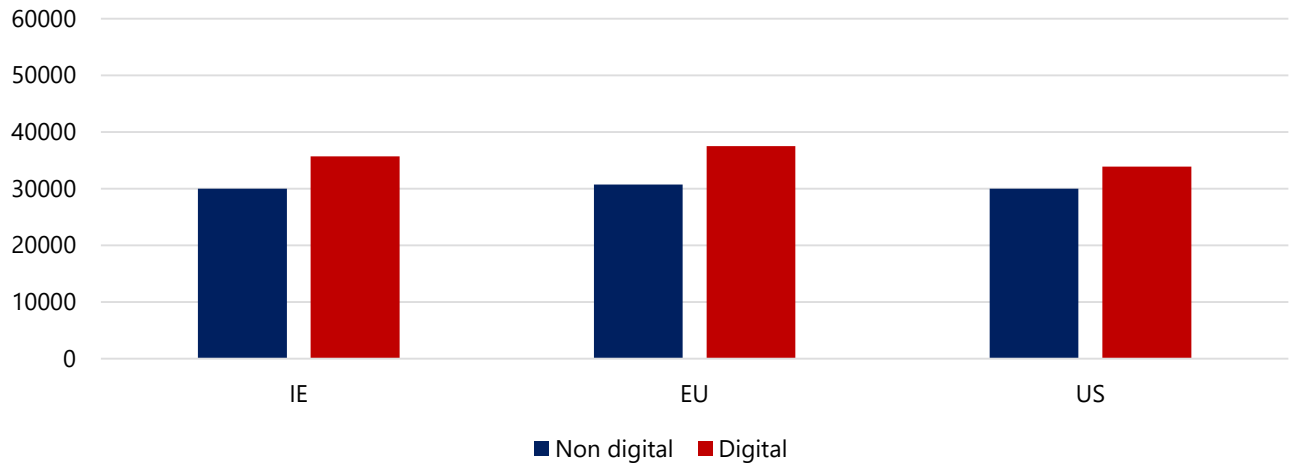
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

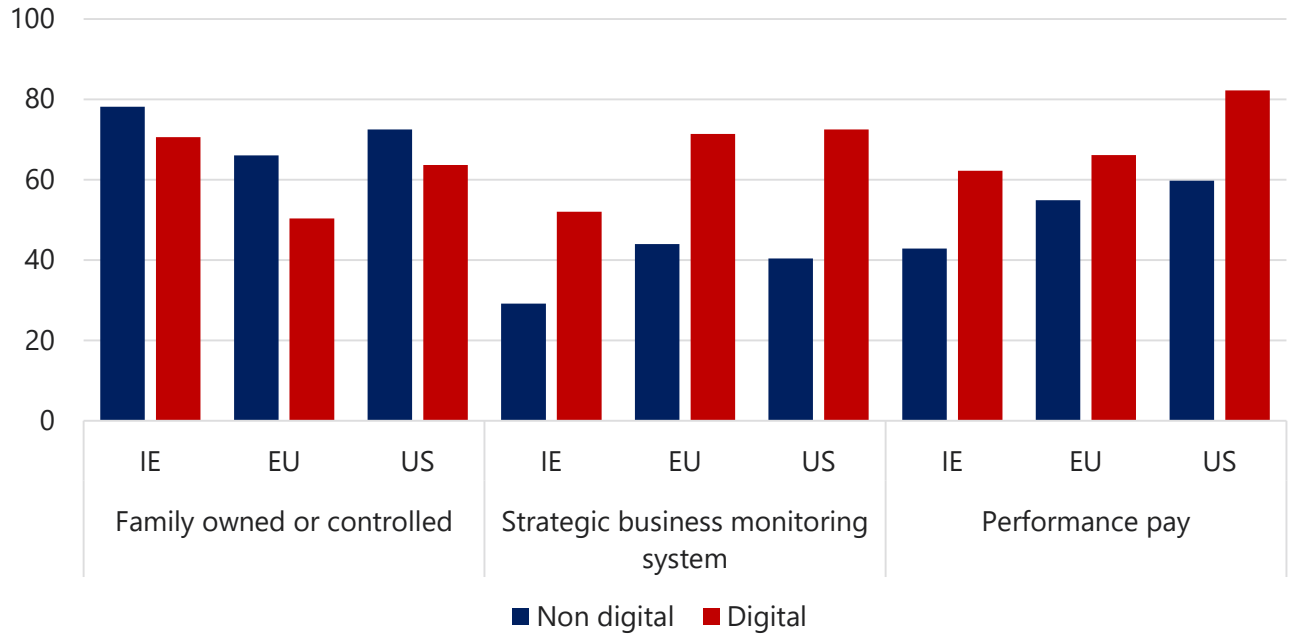
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

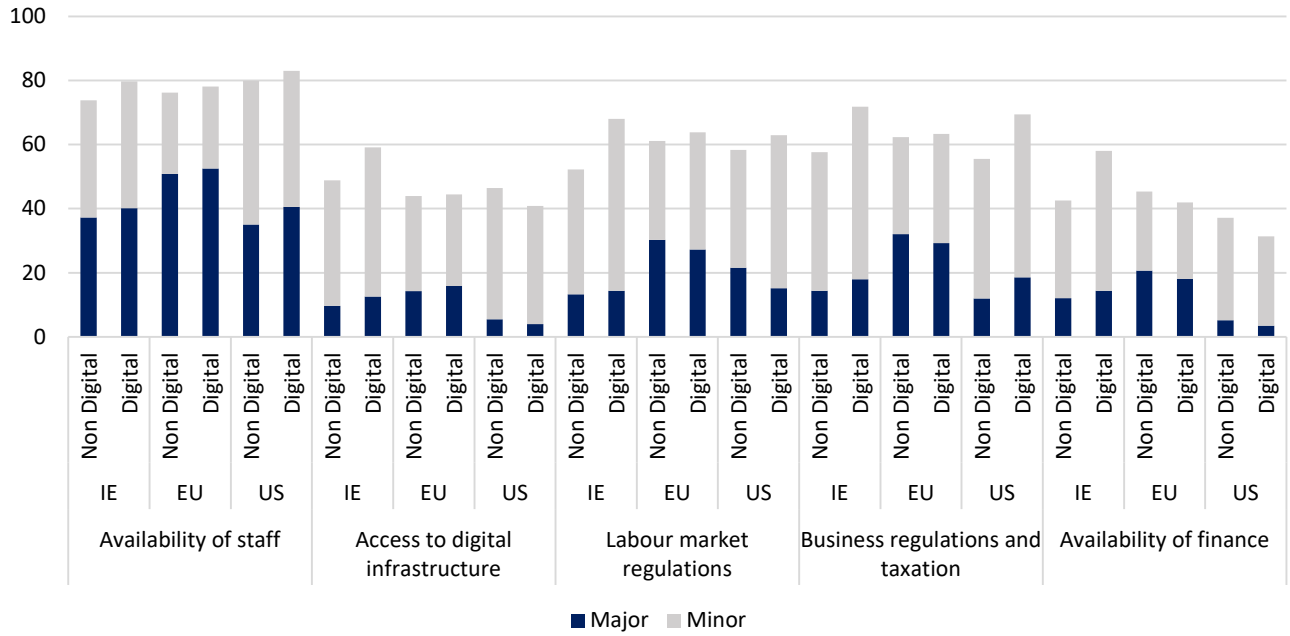
ADOPTION OF DIGITAL TECHNOLOGIES – IRELAND

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

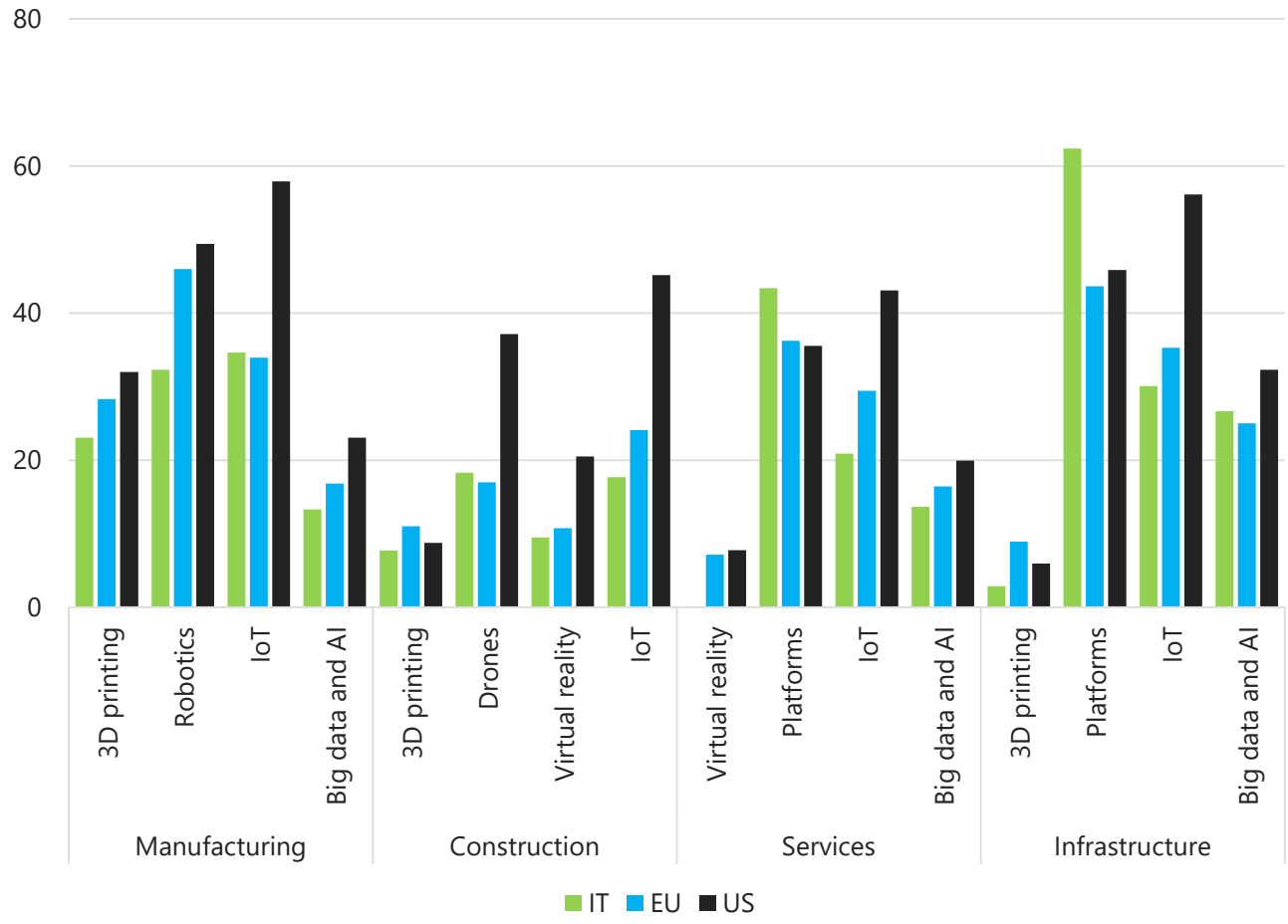


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – ITALY

- Italy ranks among the *modest* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above both the EU and US average for platforms.
- Digital adoption rates in Italy are above the EU average for the services and infrastructure sectors but behind the US average for all sectors.
- Almost 60% of digital firms report having increased the number of employees in the last three years, compared to about 50% of non-digital firms.
- Median labour productivity and median average per employee are both higher than the EU and the US average for digital and non-digital firms in Italy.
- Among the reported obstacles to investment, 'labour market regulations is the most cited, followed by 'business regulations and taxation' and 'lack of availability of staff'.

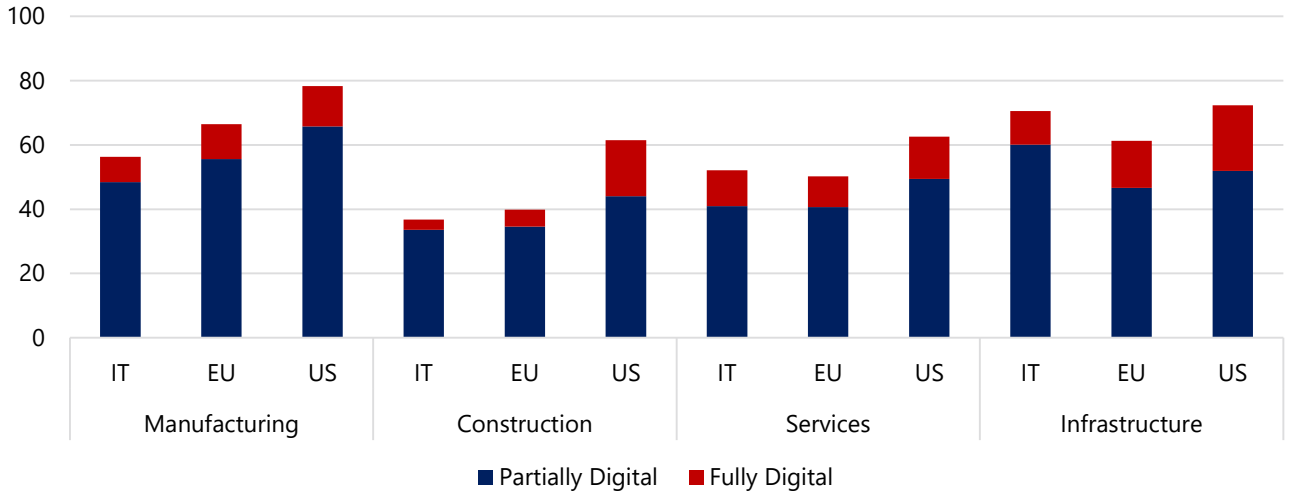
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

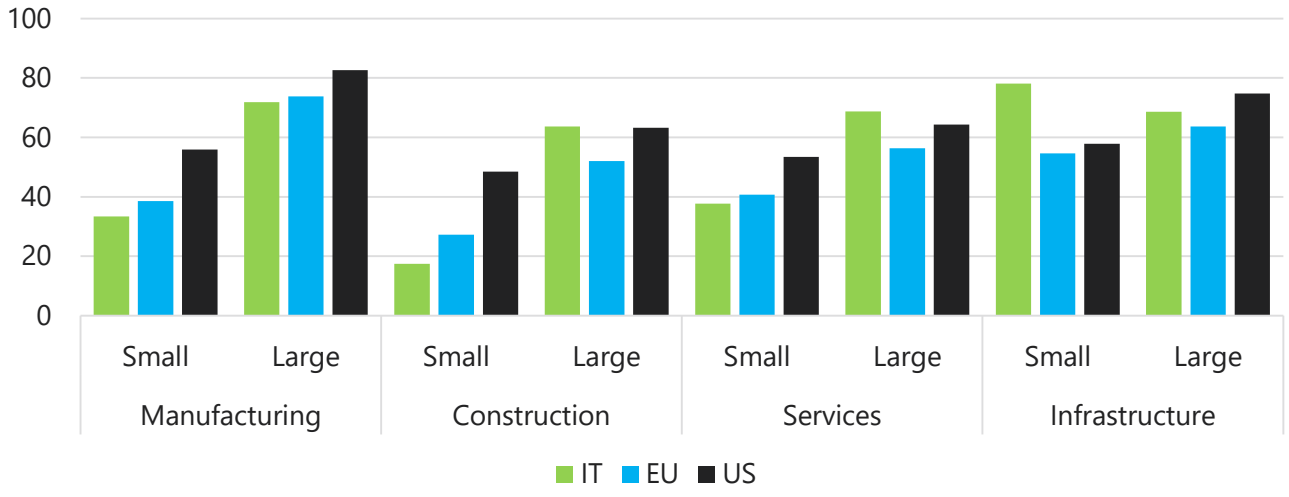
ADOPTION OF DIGITAL TECHNOLOGIES – ITALY

Digital adoption rates (in % of all firms), by sector



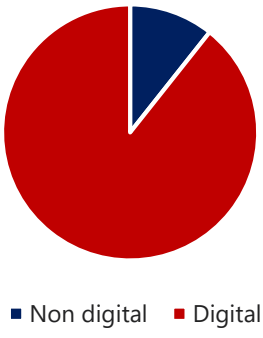
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

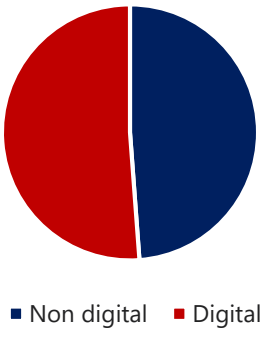


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



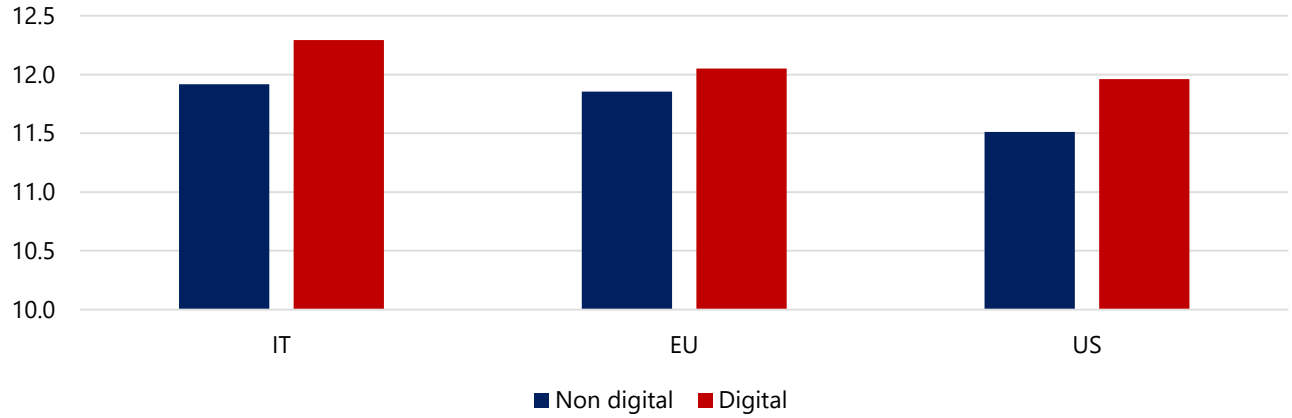
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

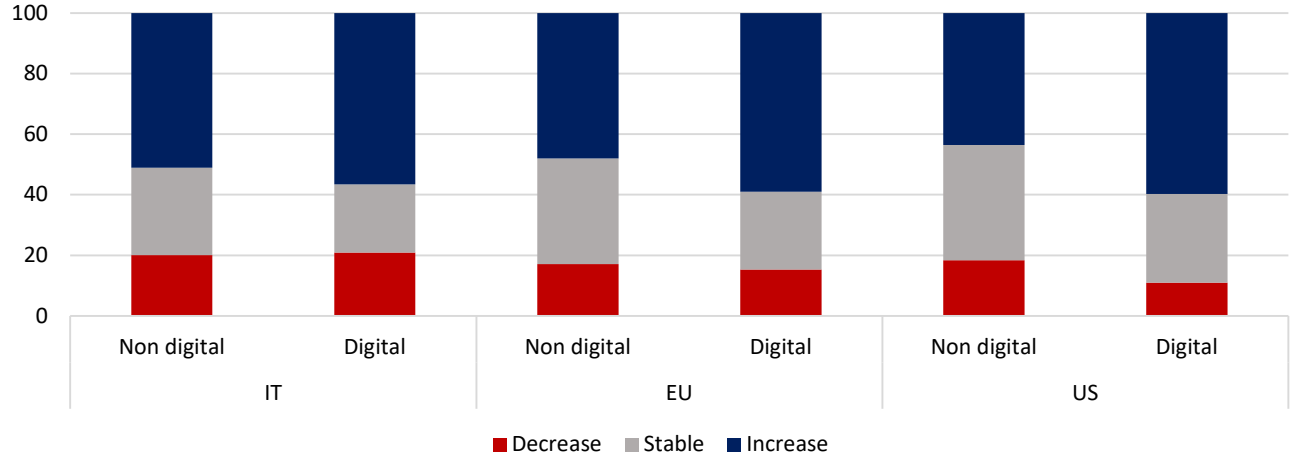
ADOPTION OF DIGITAL TECHNOLOGIES – ITALY

Median labour productivity (in logarithm)



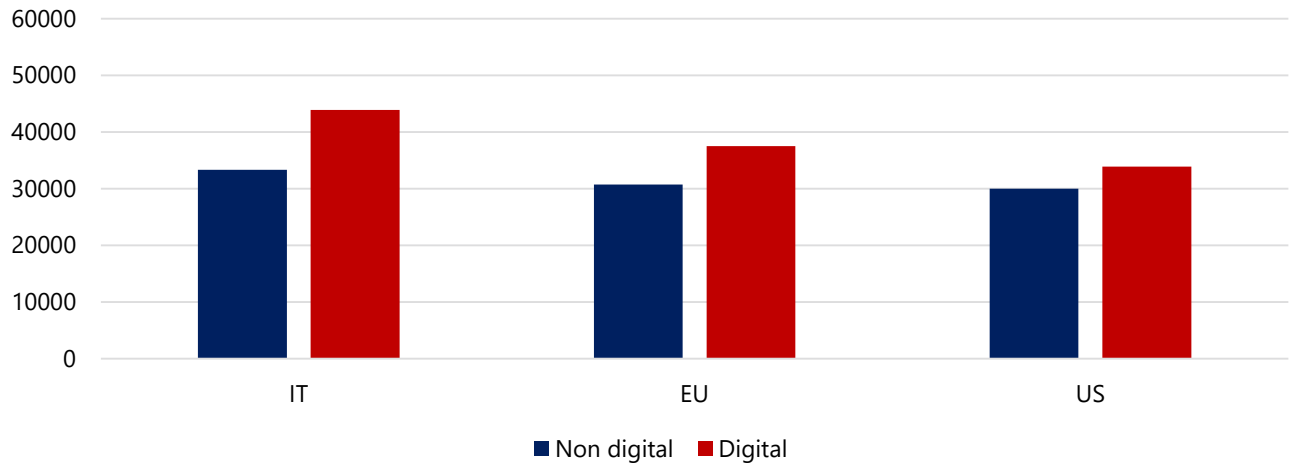
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

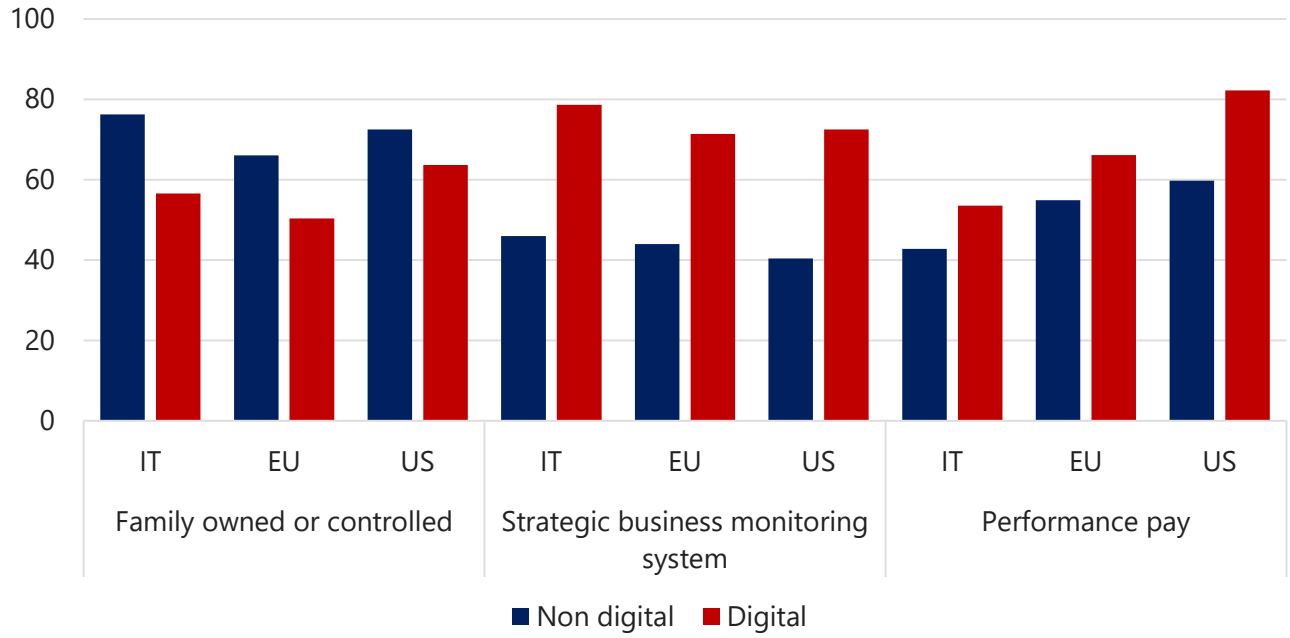
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

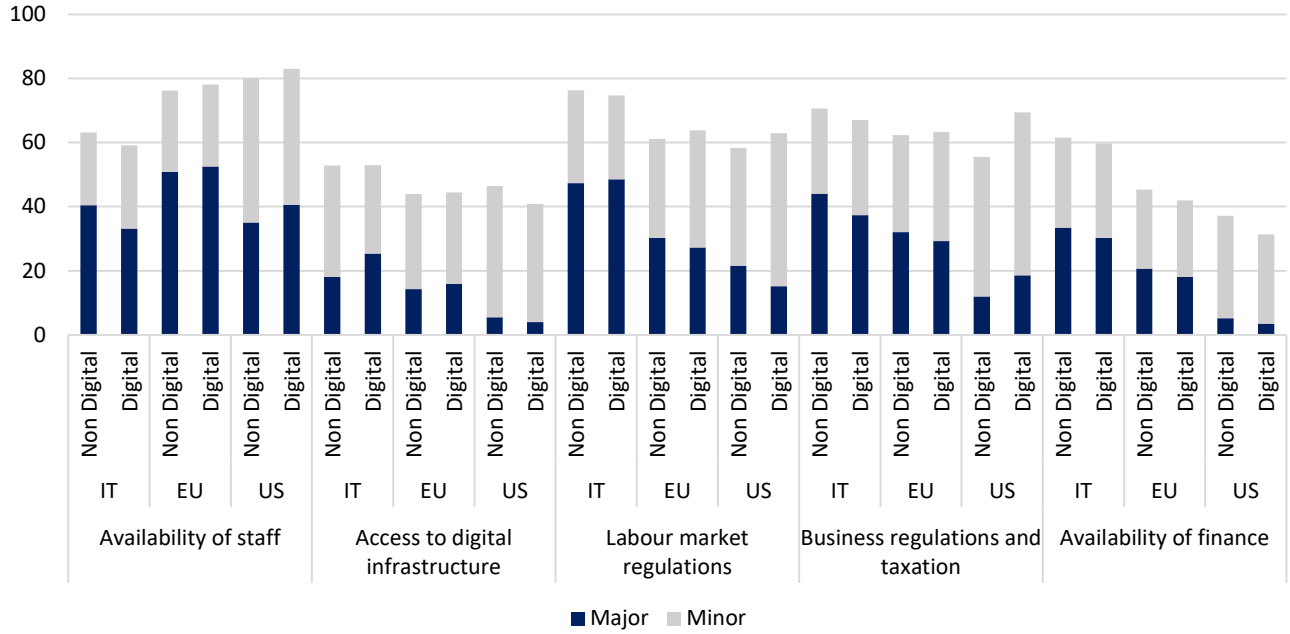
ADOPTION OF DIGITAL TECHNOLOGIES – ITALY

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

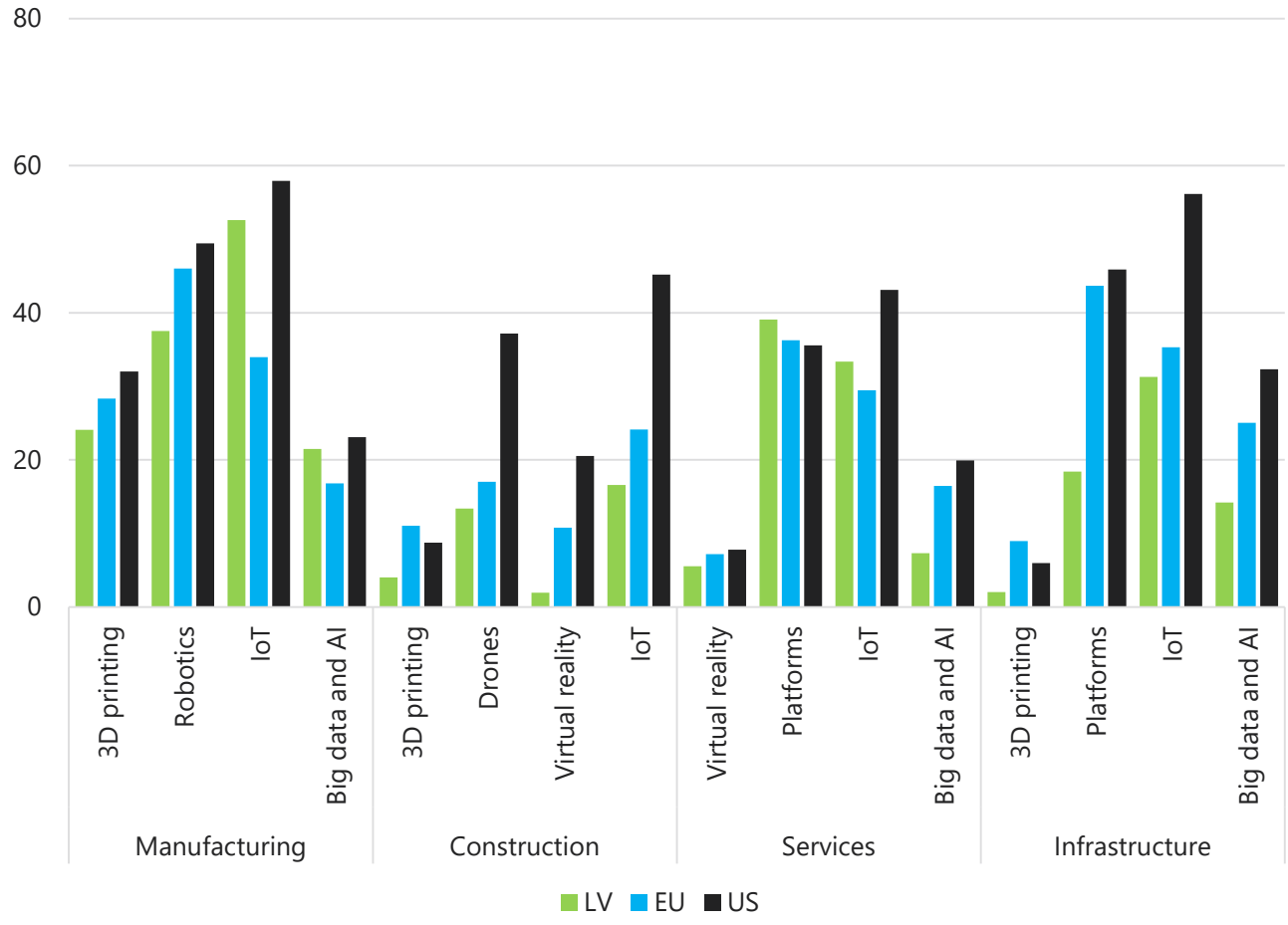


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – LATVIA

- Latvia ranks among the *modest* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above the EU and US average for platforms in the services sector.
- Digital adoption rates in Latvia are above the EU average for the services sector but below the US average for all sectors.
- Almost 50% of digital firms report having increased the number of employees in the last three years, compared to about 40% of non-digital firms.
- Median wage per employee is 2.25 times higher for digital than non-digital firms in Latvia.
- Among the reported obstacles to investment, 'lack of availability of staff' is the most cited, especially by digital firms, followed by 'business regulations and taxation' and 'labour market regulations'.

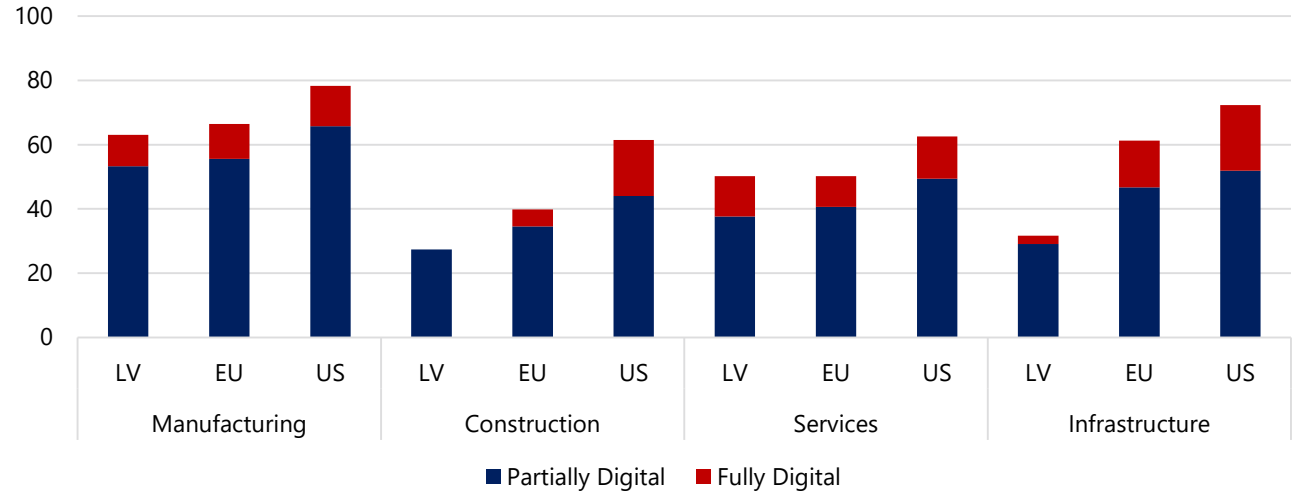
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

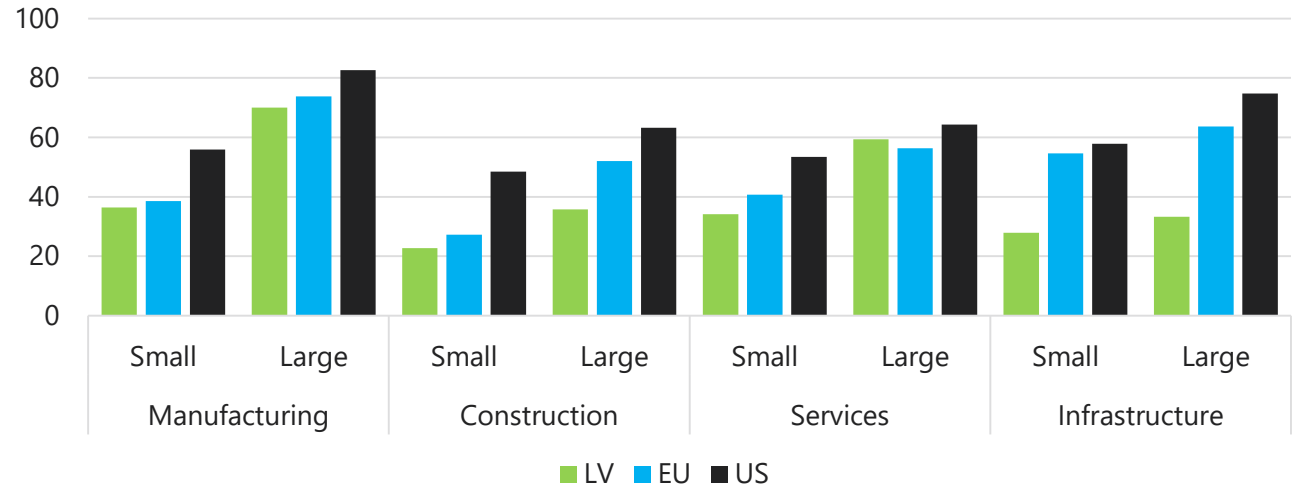
ADOPTION OF DIGITAL TECHNOLOGIES – LATVIA

Digital adoption rates (in % of all firms), by sector



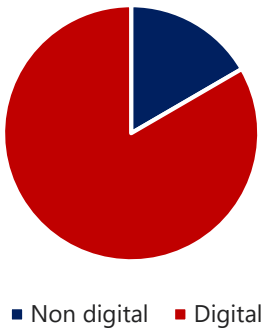
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

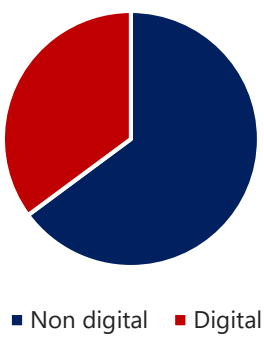


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



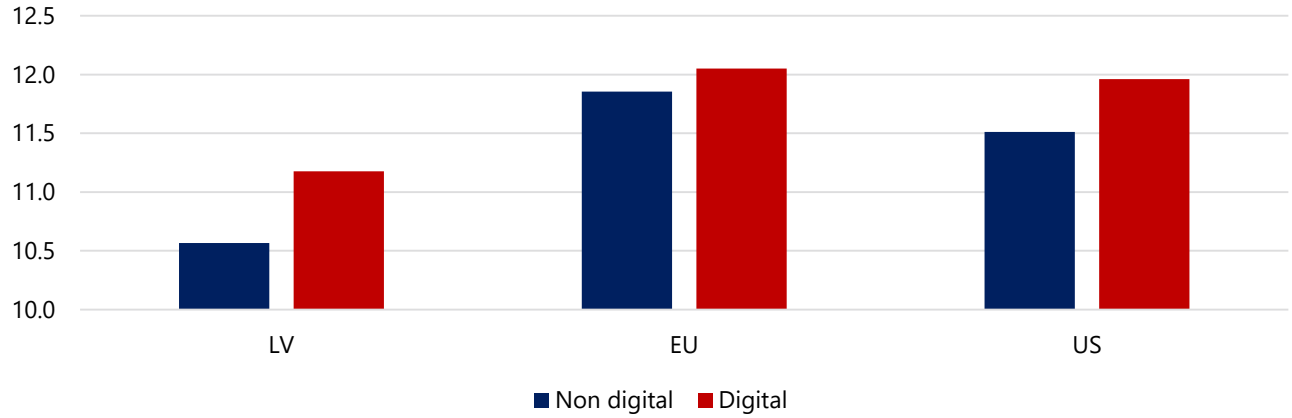
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

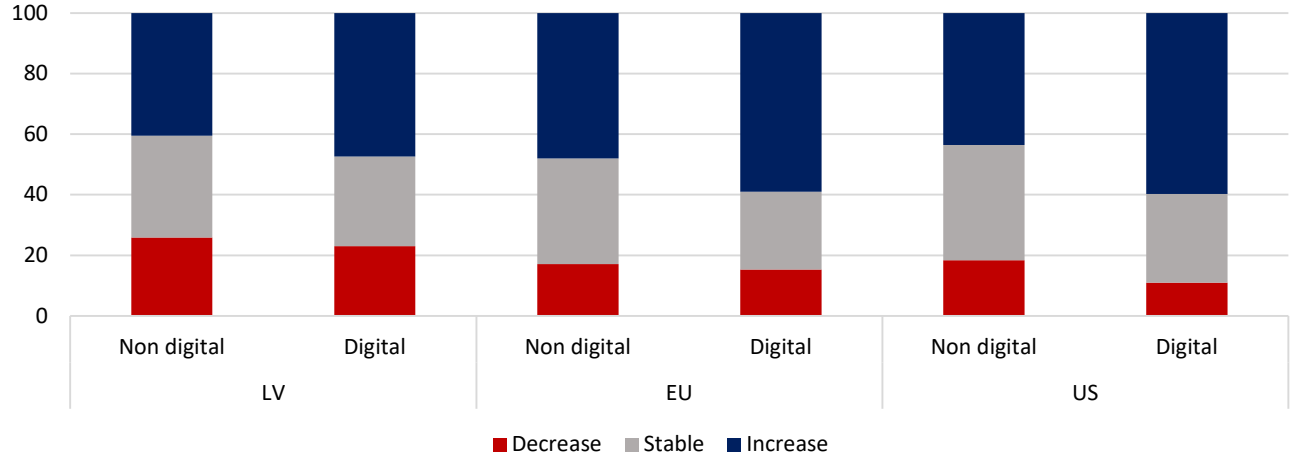
ADOPTION OF DIGITAL TECHNOLOGIES – LATVIA

Median labour productivity (in logarithm)



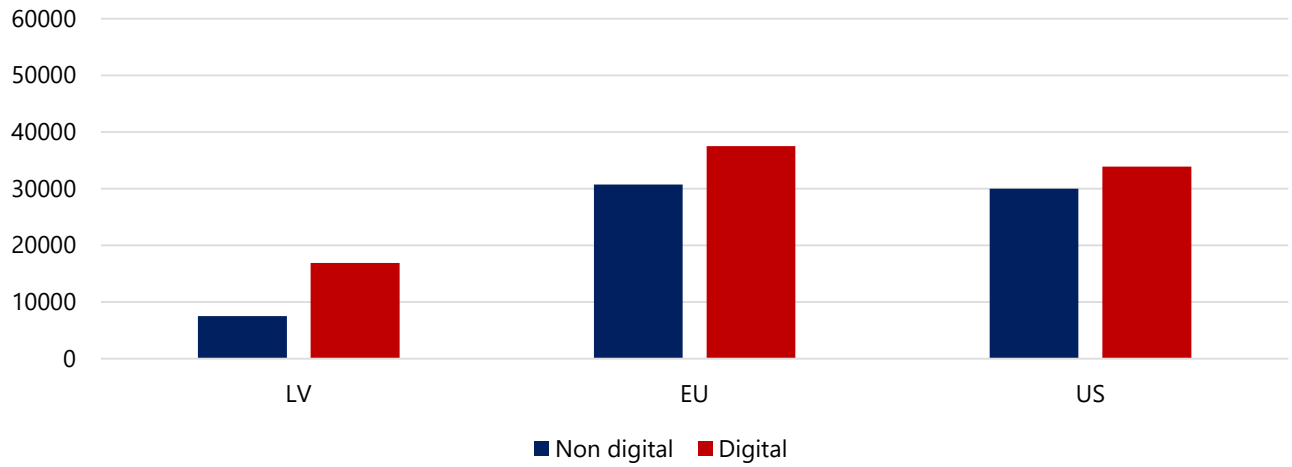
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

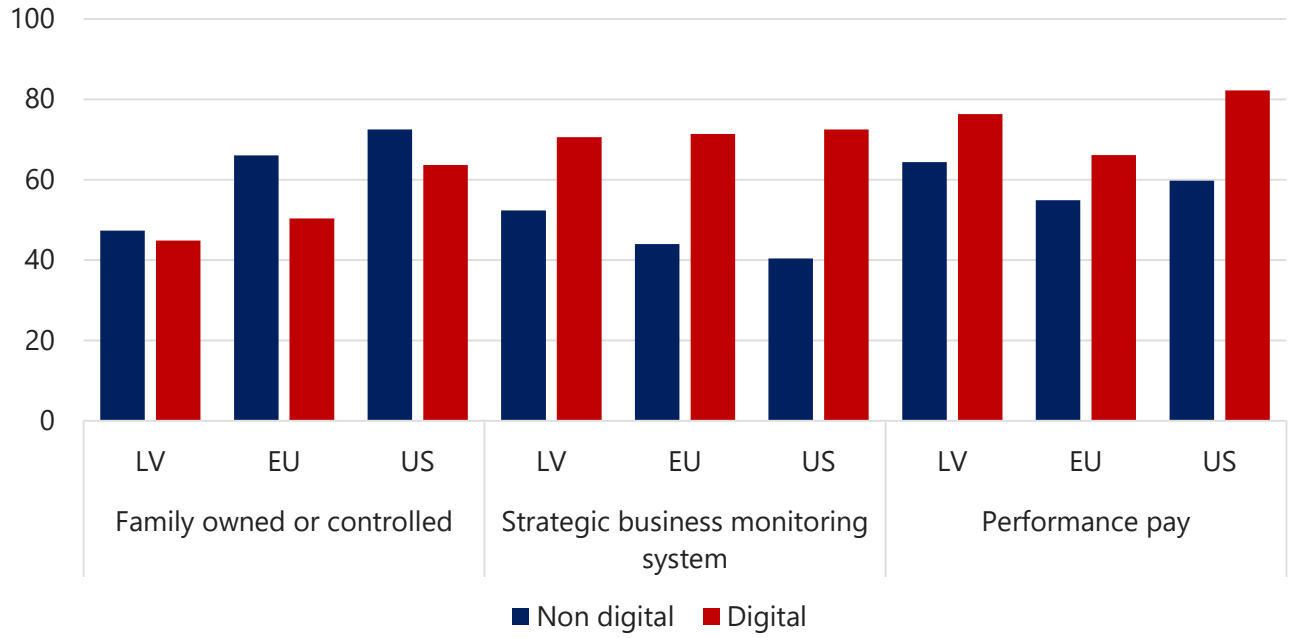
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

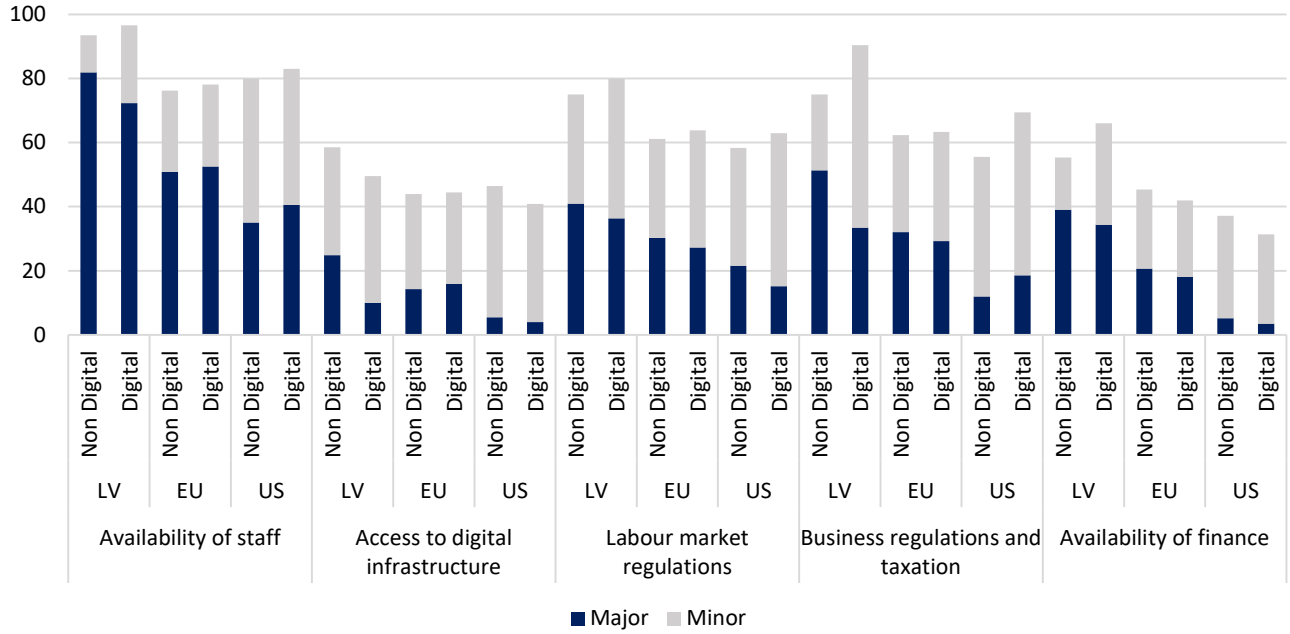
ADOPTION OF DIGITAL TECHNOLOGIES – LATVIA

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

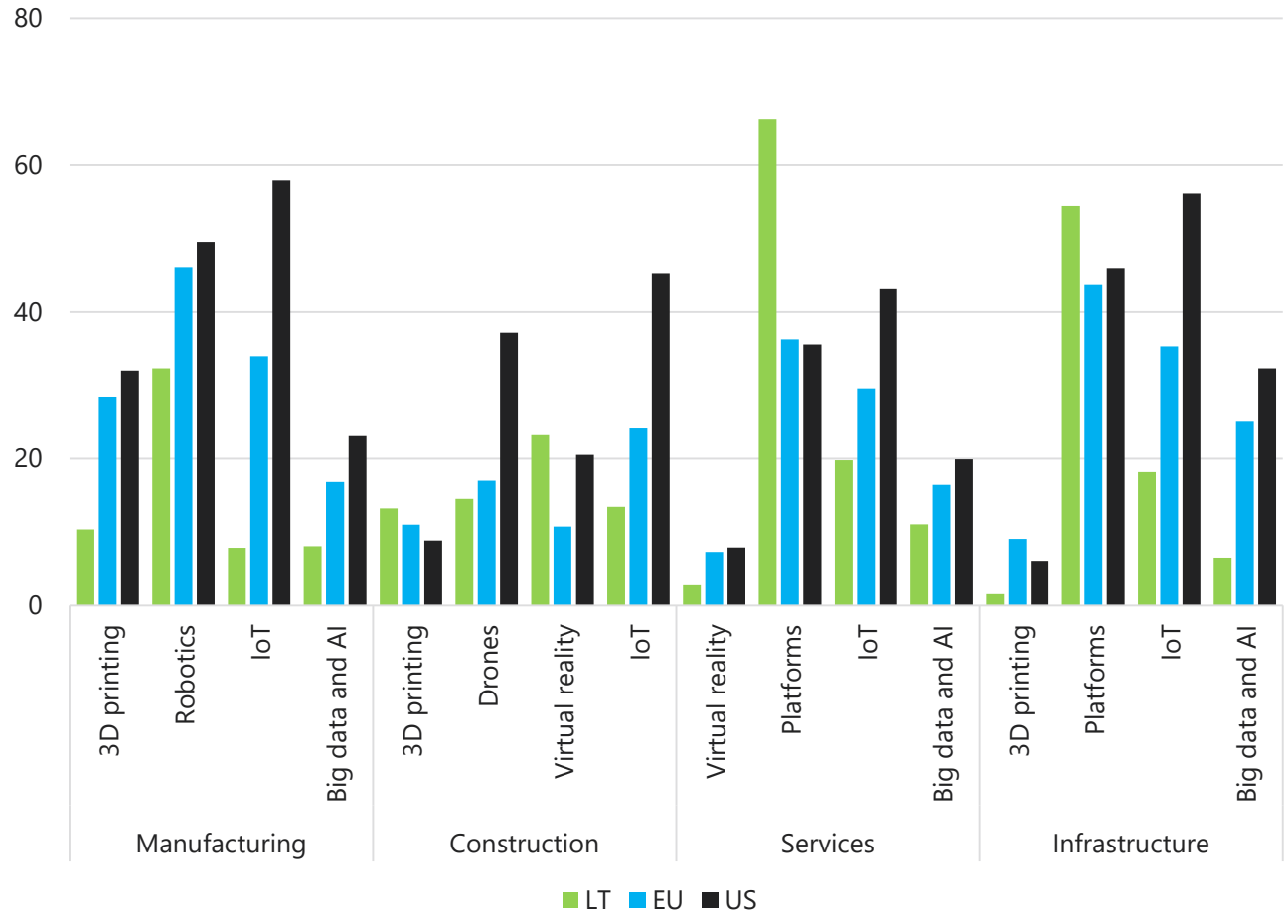


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – LITHUANIA

- Lithuania ranks among the *modest* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above the EU and US average for platforms in the services and infrastructure sectors, and for virtual reality in the construction sector.
- Digital adoption rates in Lithuania are above both the EU and the US average for the services sector.
- The share of firms that report having increased or kept stable the number of employees in the last three years is slightly higher for non-digital firms compared digital firms in Lithuania.
- Median wage per employee and median labour productivity are higher for digital than non-digital firms in Lithuania, but both below the EU and US average.
- Among the reported obstacles to investment, 'lack of availability of staff' is the most cited, especially by digital firms.

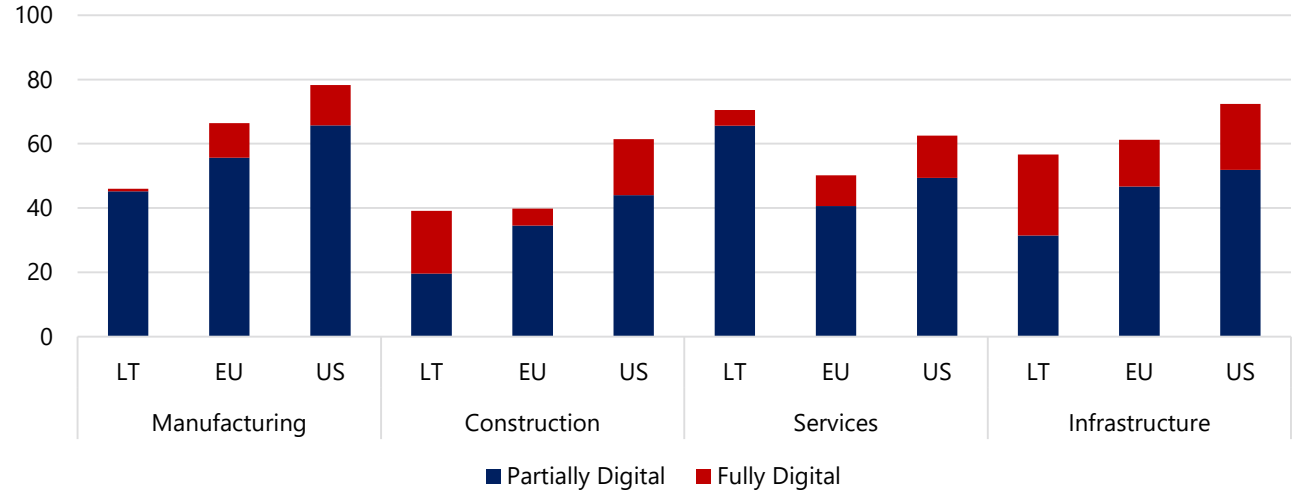
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

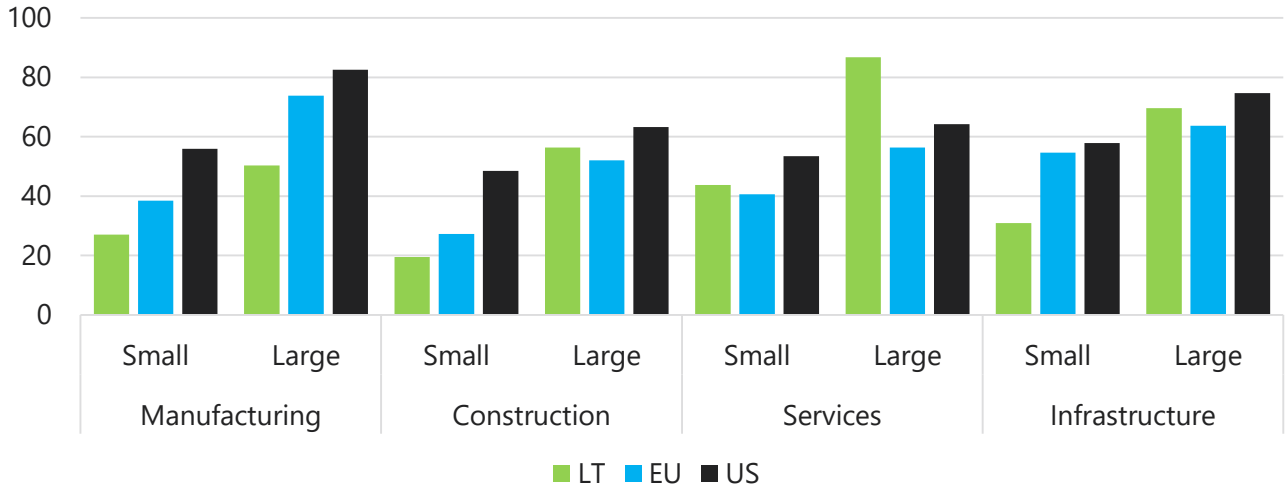
ADOPTION OF DIGITAL TECHNOLOGIES – LITHUANIA

Digital adoption rates (in % of all firms), by sector



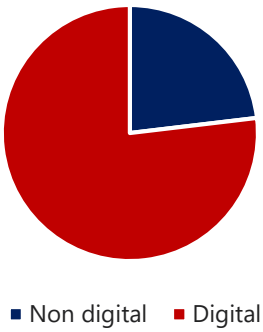
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

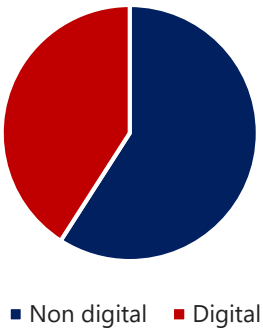


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



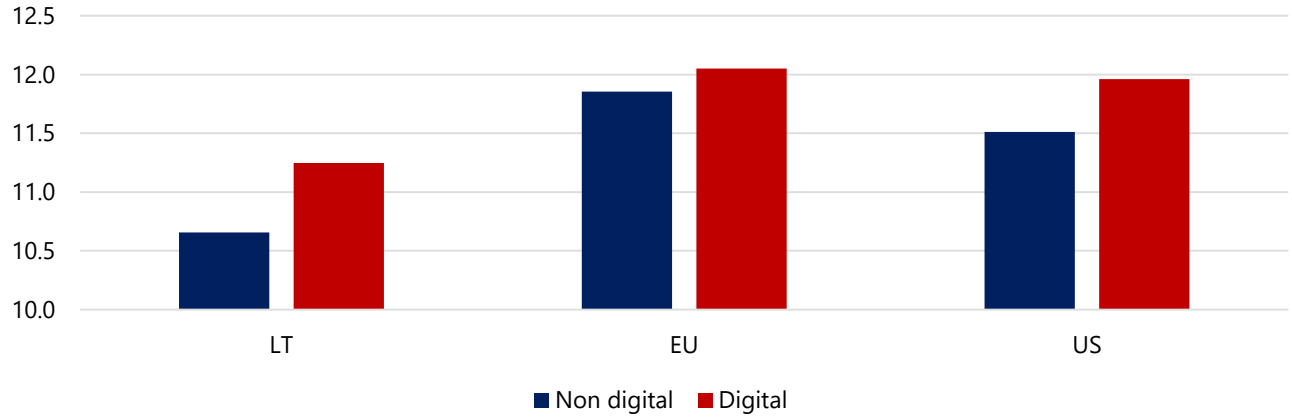
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

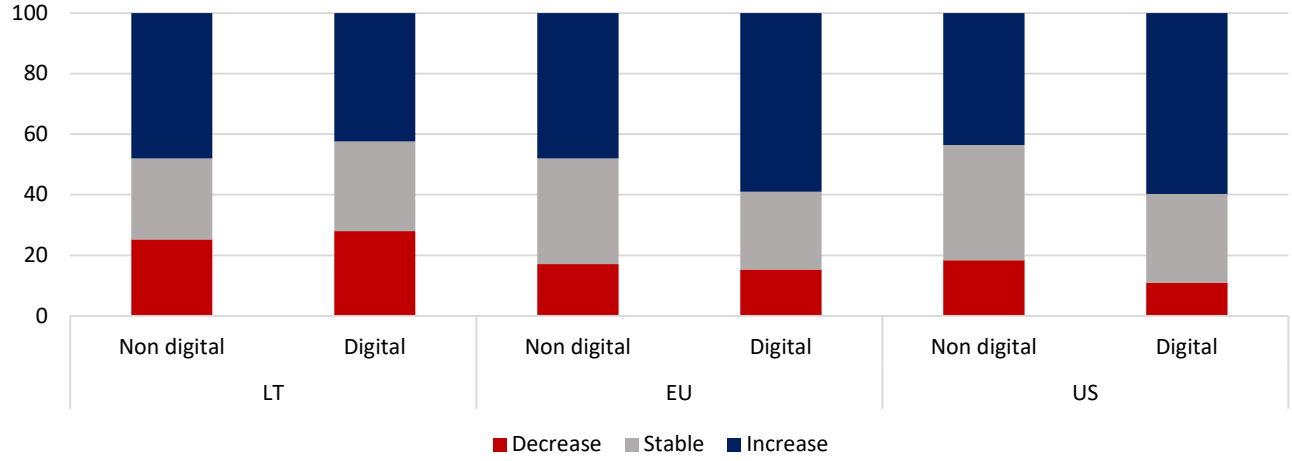
ADOPTION OF DIGITAL TECHNOLOGIES – LITHUANIA

Median labour productivity (in logarithm)



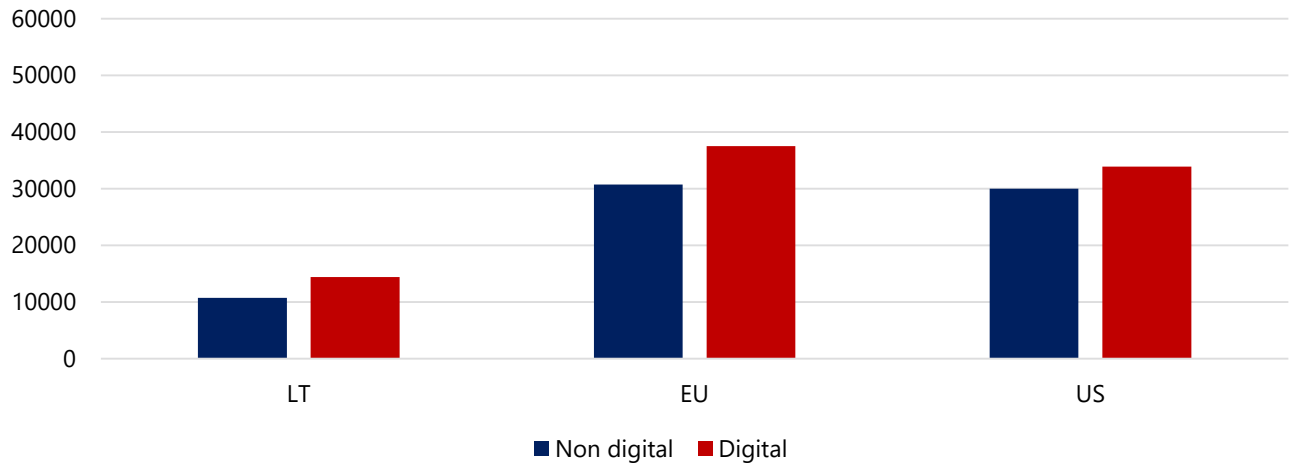
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

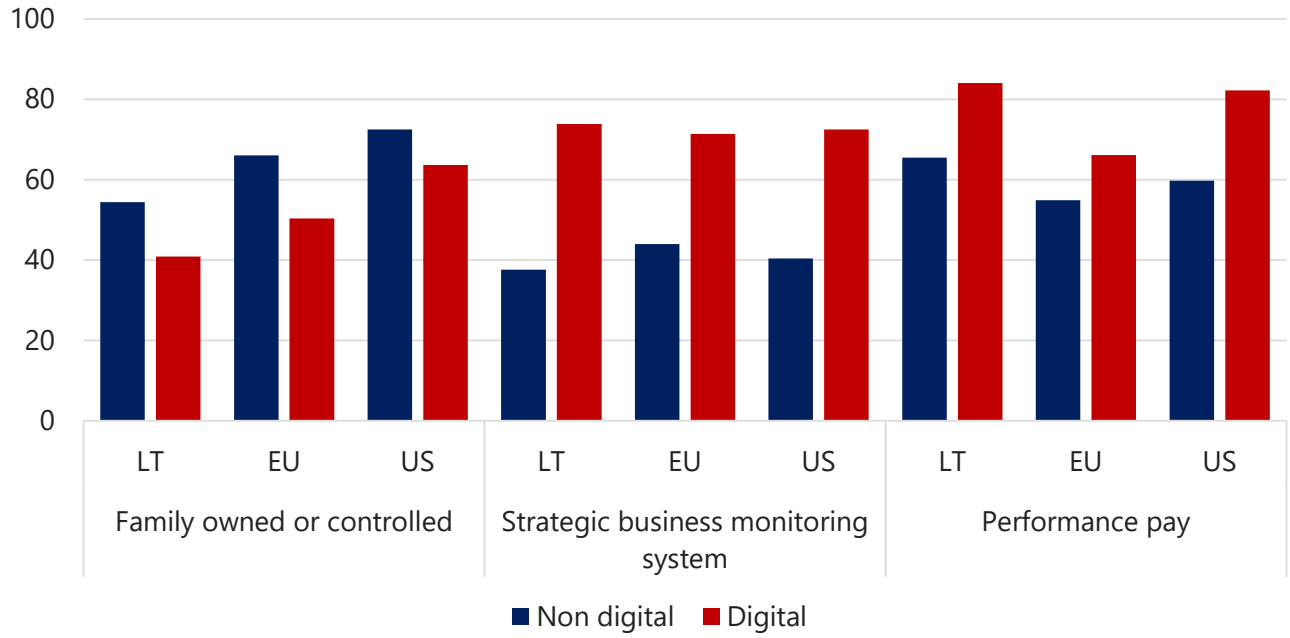
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

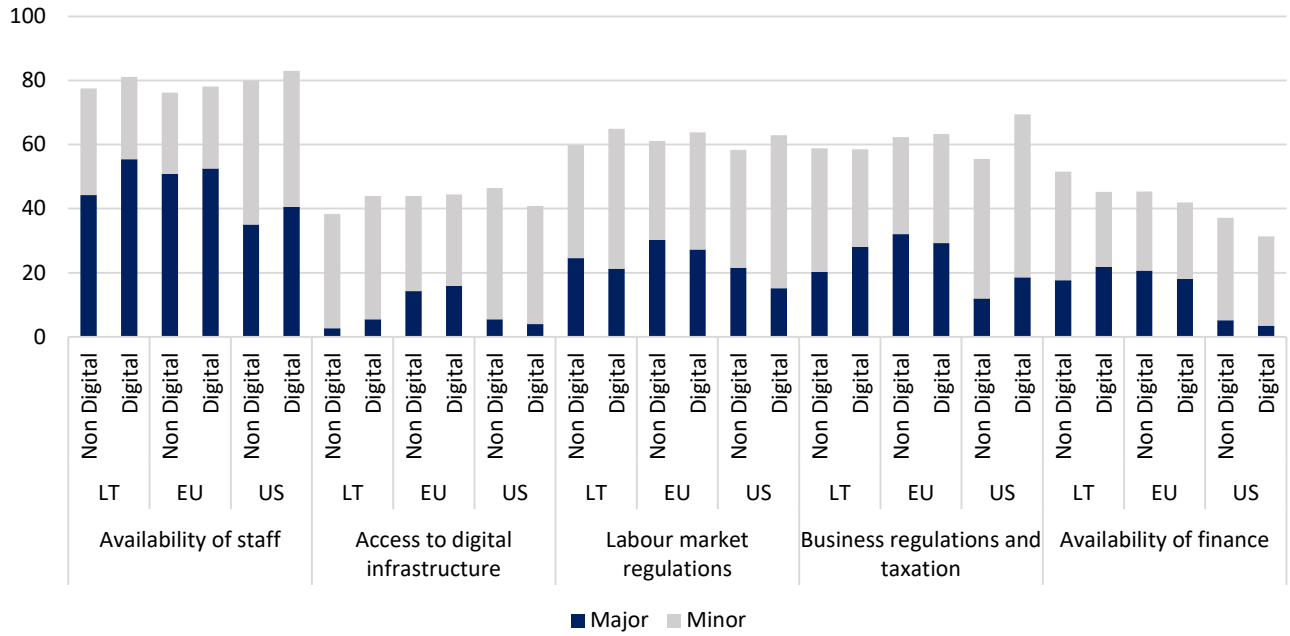
ADOPTION OF DIGITAL TECHNOLOGIES – LITHUANIA

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

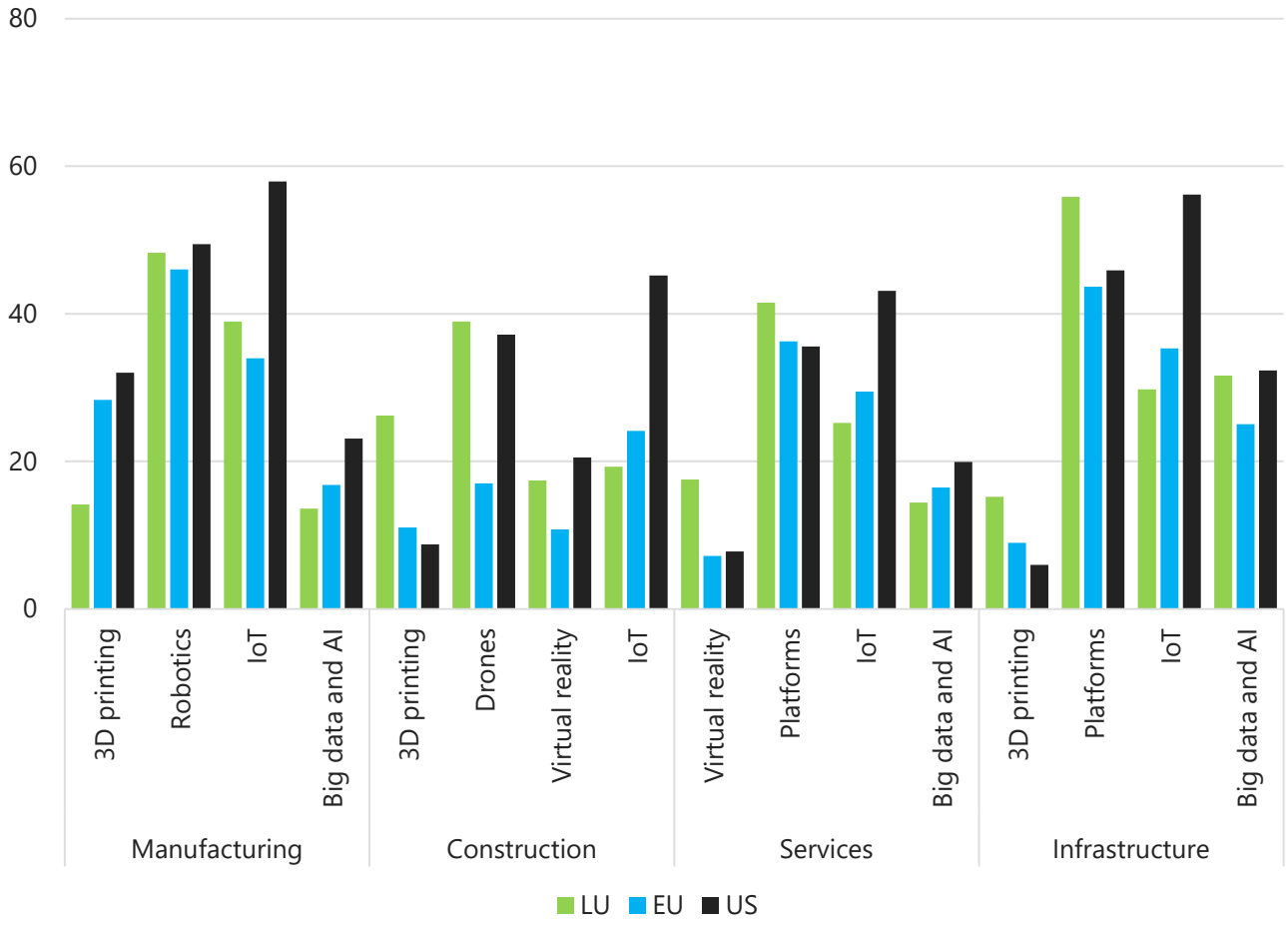


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – LUXEMBOURG

- Luxembourg scores among the *strong* countries on EIBIS Digitalisation Index.
- Luxembourg's adoption rates for platforms, drones and virtual reality are the only ones to exceed those of the EU as well as the US.
- Digital adoption rates in Luxembourg are above the EU average for the construction, services and infrastructure sectors but behind the US average for all sectors.
- More than 95% of digital firms report having increased or kept stable the number of employees in the last three years, compared to 87% of non-digital firms.
- Median wage per employee is above the EU and the US average, slightly higher for digital than non-digital firms in Luxembourg.
- Luxembourgish digital firms identify obstacles to investment relatively infrequently. While 'lack of availability of staff' is the most cited, especially by non-digital firms, regulations and lack of access to finance affect a relatively large share of digital firms.

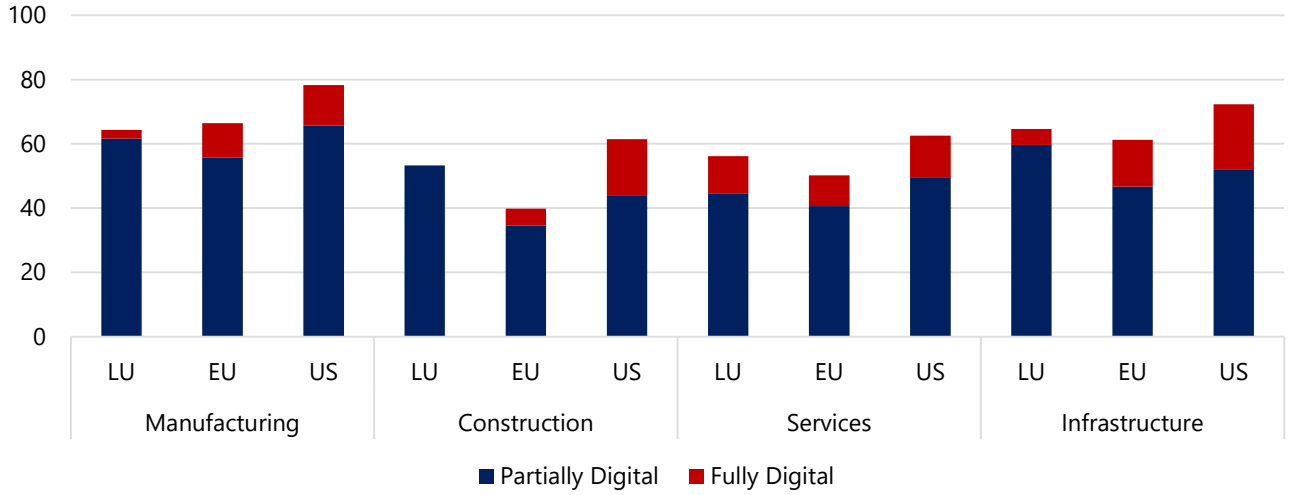
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

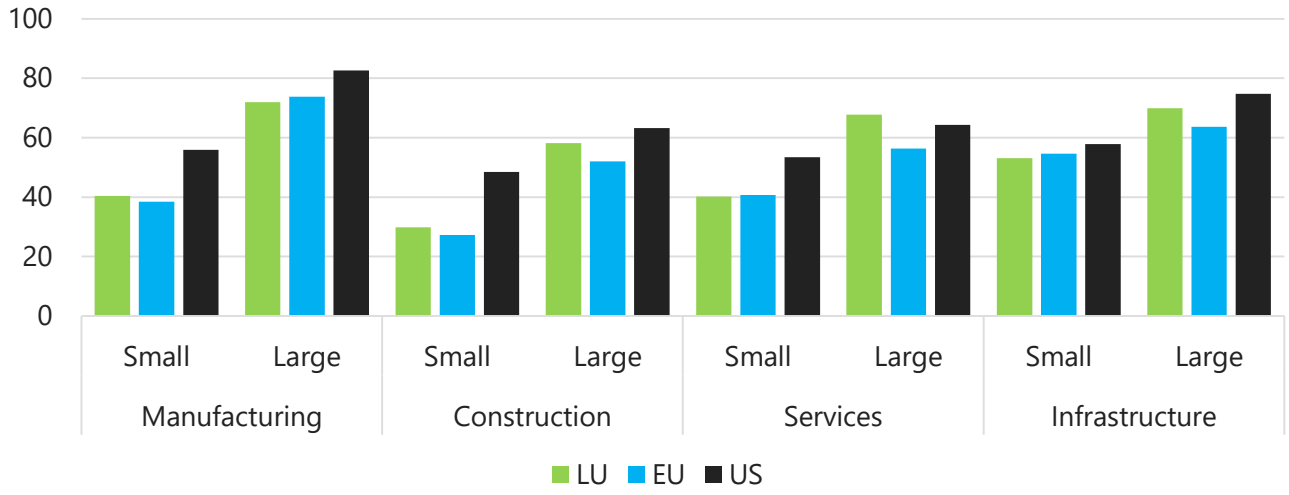
ADOPTION OF DIGITAL TECHNOLOGIES – LUXEMBOURG

Digital adoption rates (in % of all firms), by sector



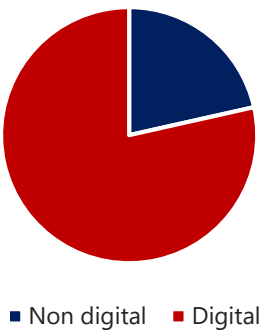
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

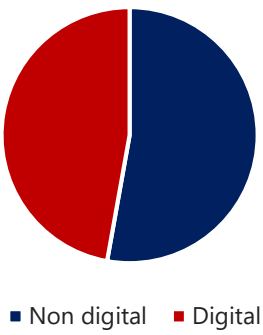


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



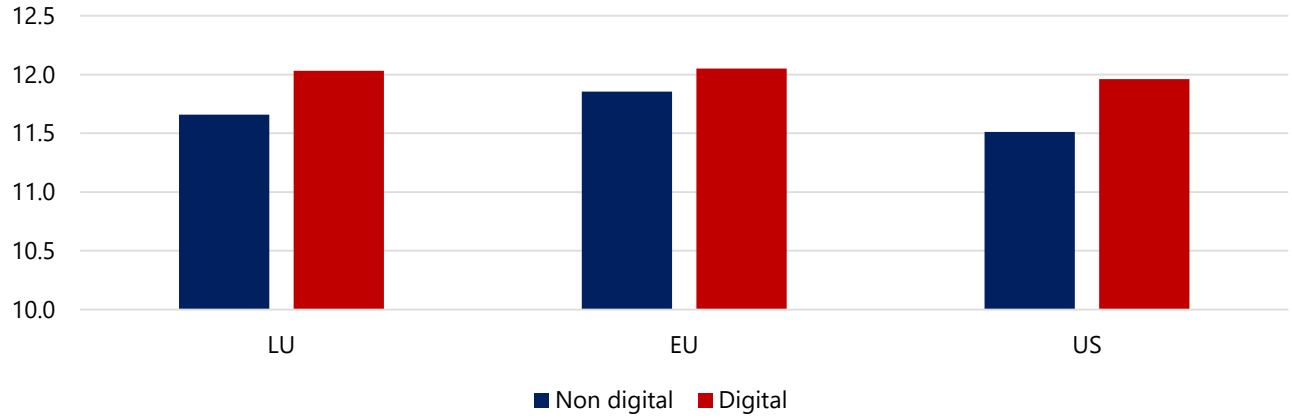
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

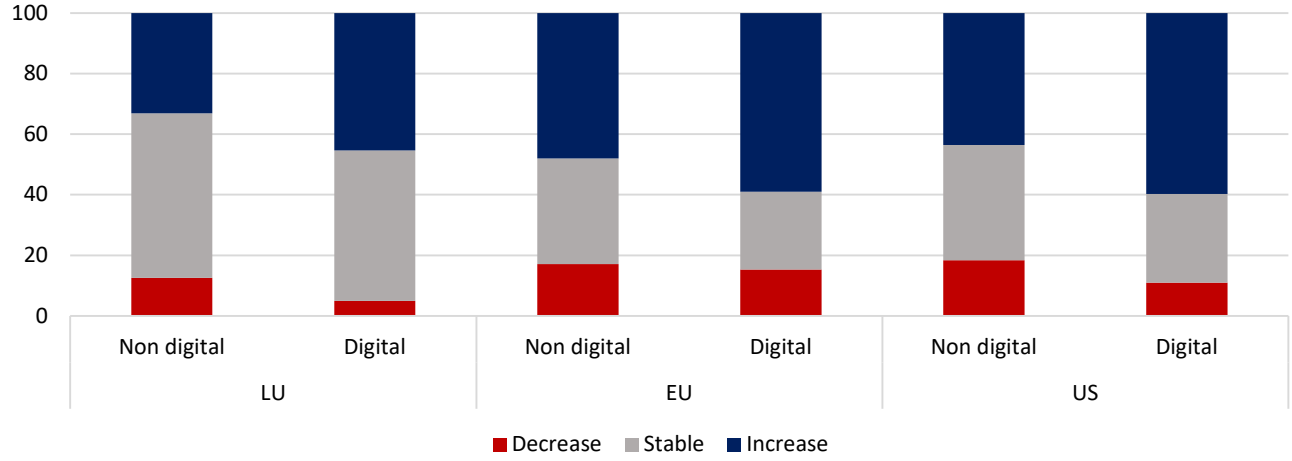
ADOPTION OF DIGITAL TECHNOLOGIES – LUXEMBOURG

Median labour productivity (in logarithm)



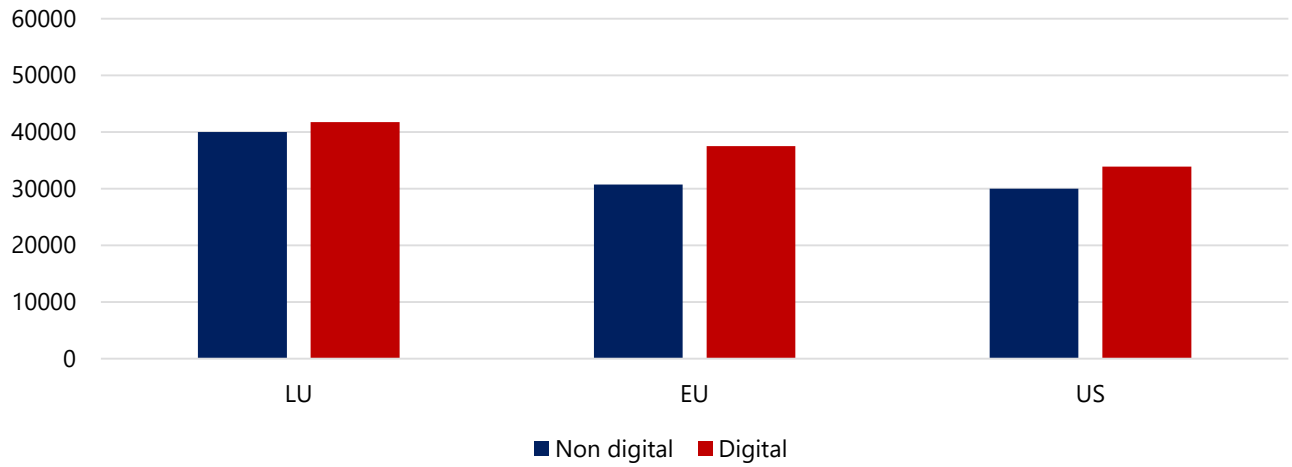
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

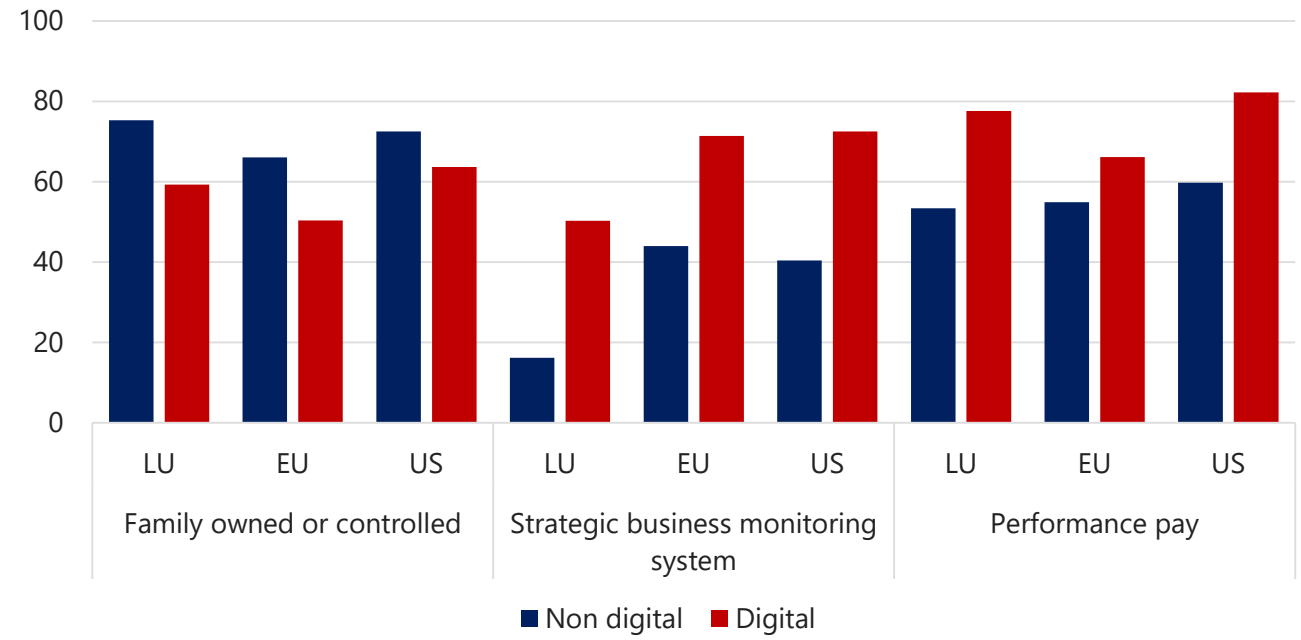
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

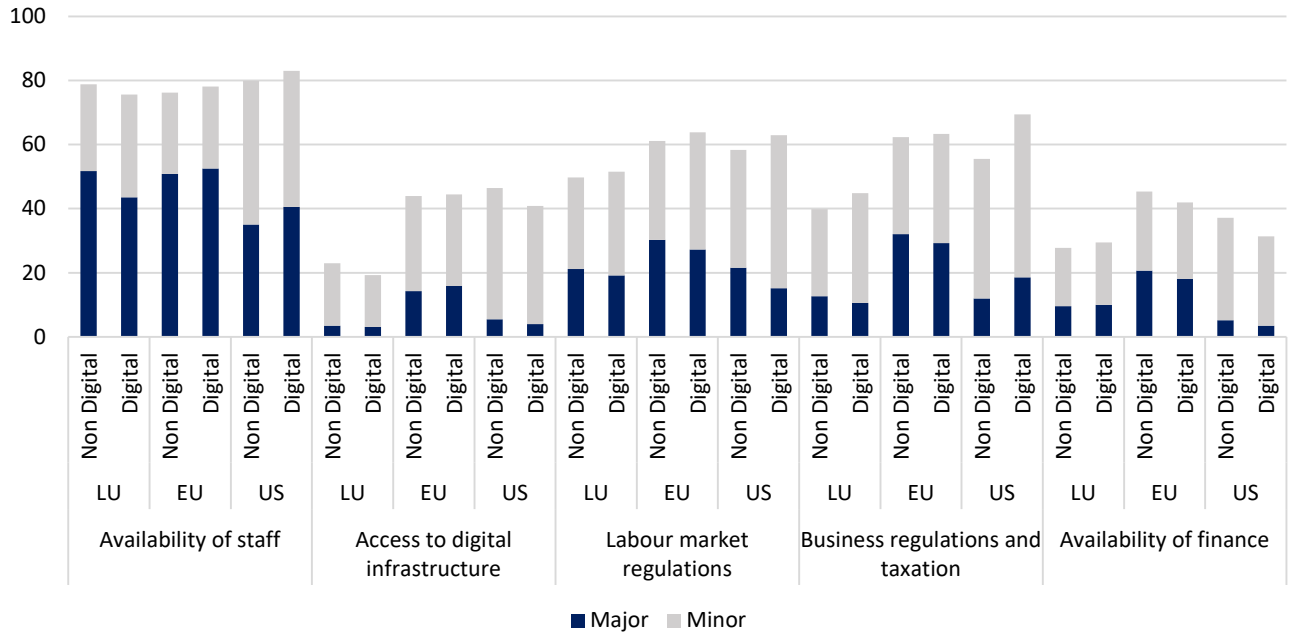
ADOPTION OF DIGITAL TECHNOLOGIES – LUXEMBOURG

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

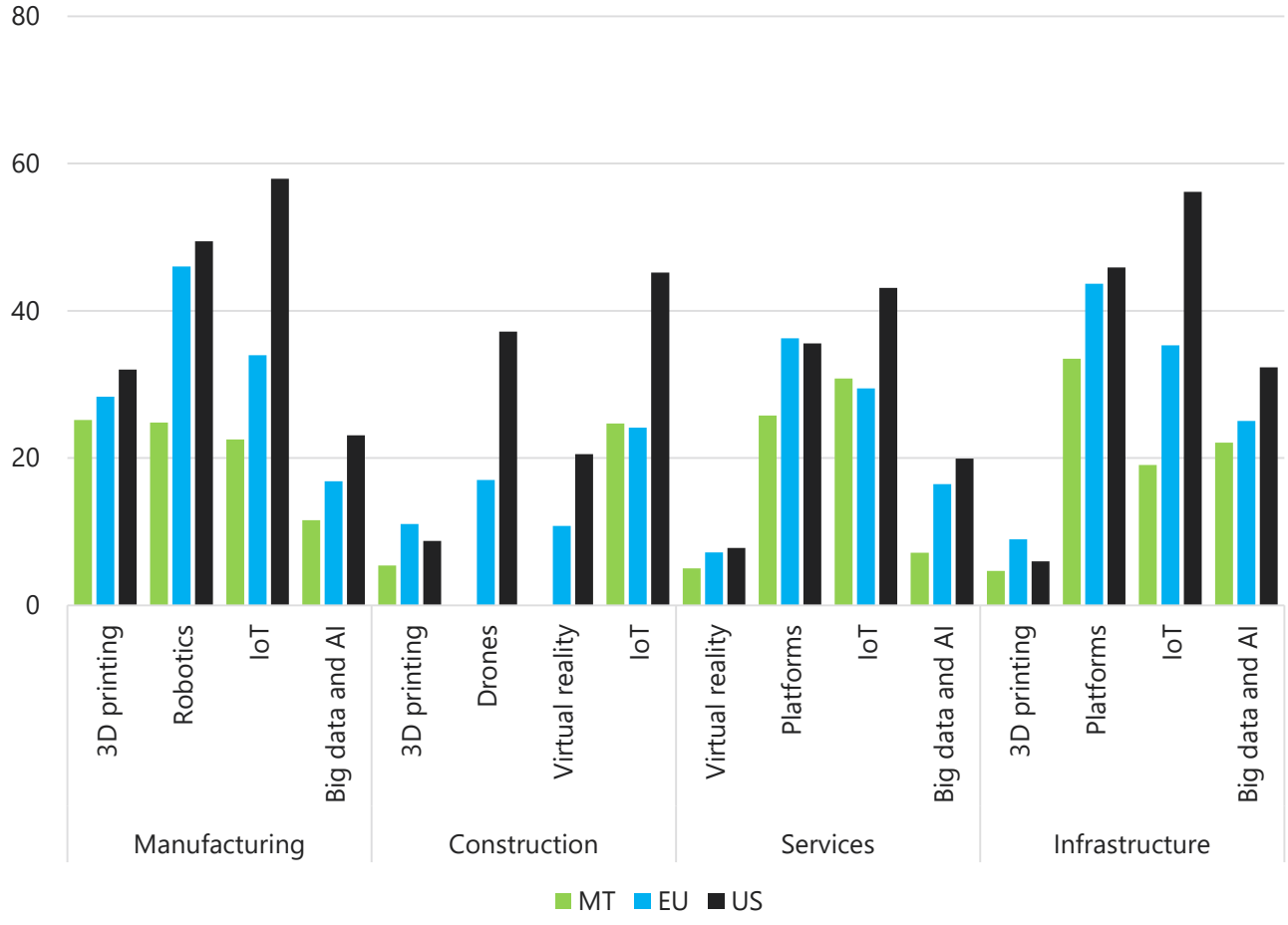


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – MALTA

- Malta ranks among the *moderate* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is always below the EU average, except for IoT in the construction and services sectors.
- Despite the high score on the digital environment index, digital adoption rates for firms in Malta are below EU and the US average for all sectors.
- More than 75% of digital firms report having increased the number of employees in the last three years, compared to less than 50% of non-digital firms in Malta.
- Median labour productivity is slightly higher among non-digital firms compared to digital firms in Malta, while wage per employee is almost 1.2 times higher for digital than non-digital firms.
- Among the reported obstacles to investment, 'lack of availability of staff' is the most cited, especially by digital firms.

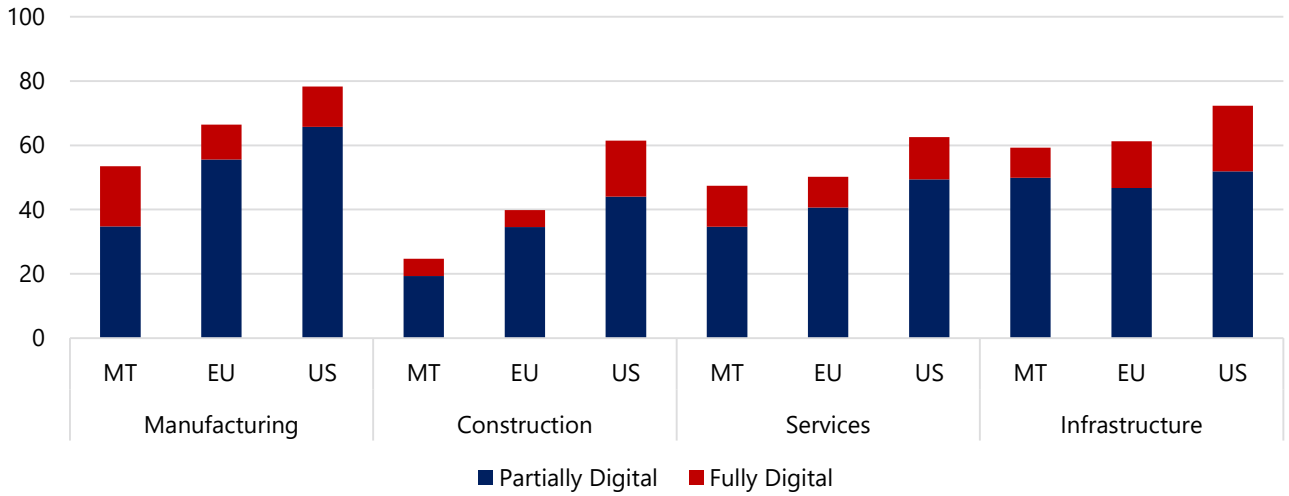
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

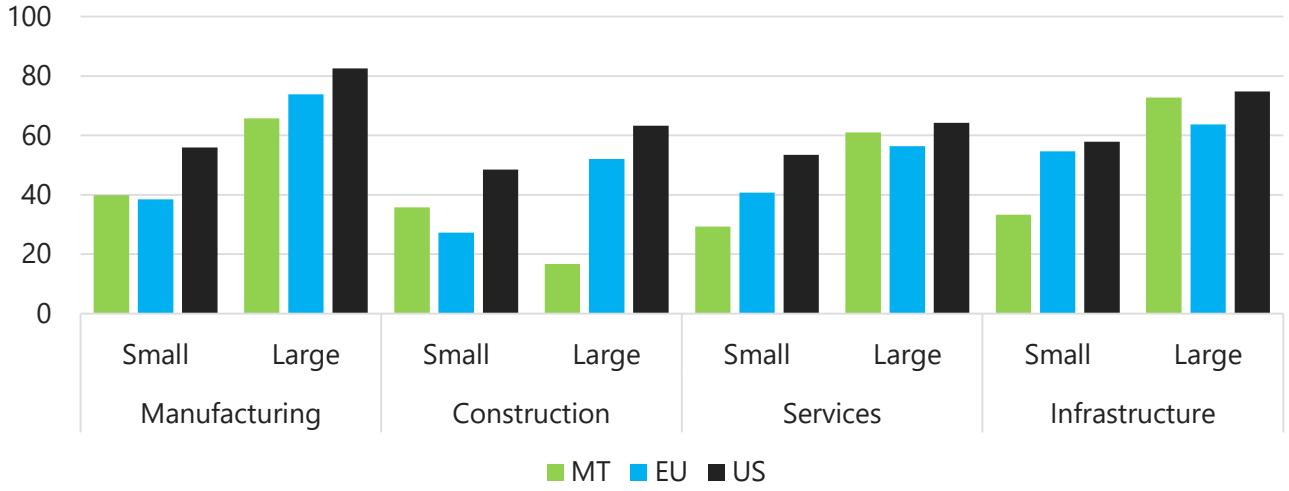
ADOPTION OF DIGITAL TECHNOLOGIES – MALTA

Digital adoption rates (in % of all firms), by sector



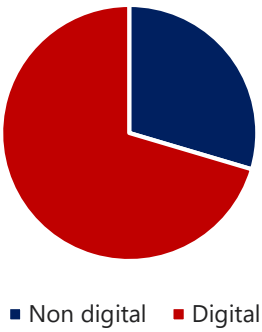
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

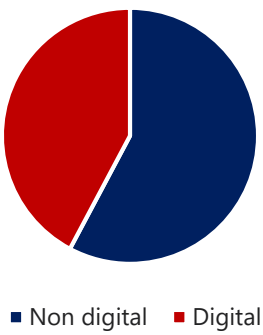


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



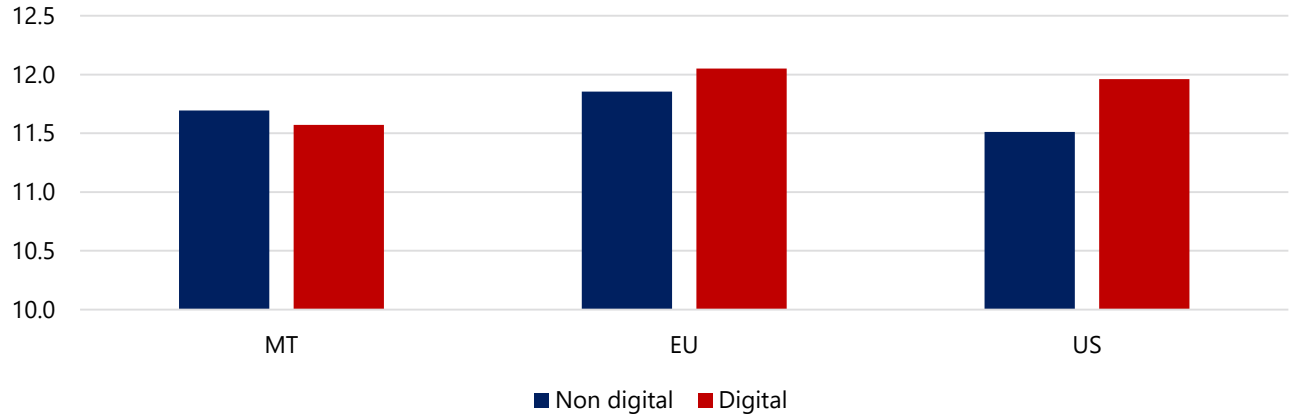
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

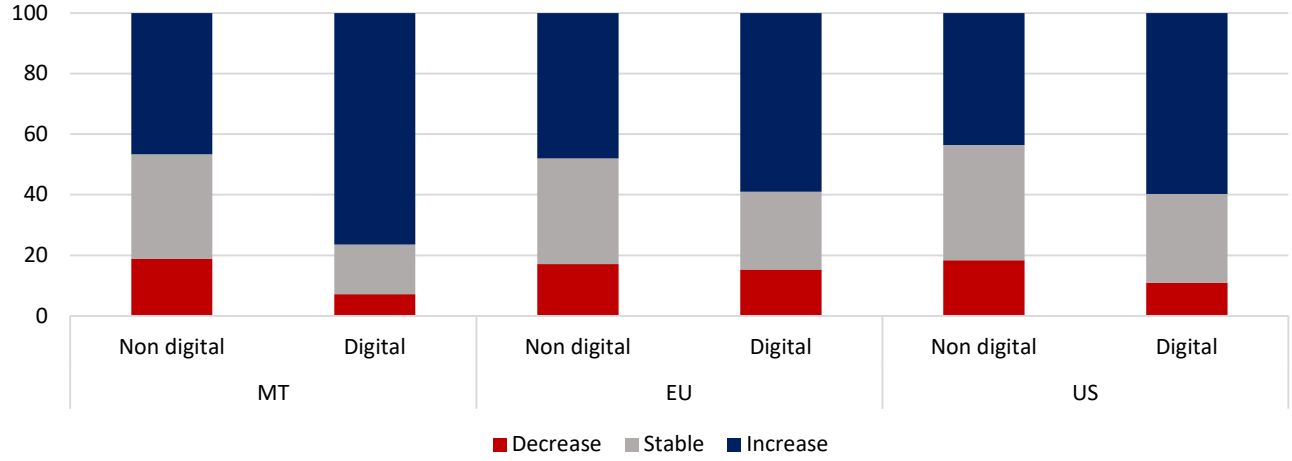
ADOPTION OF DIGITAL TECHNOLOGIES – MALTA

Median labour productivity (in logarithm)



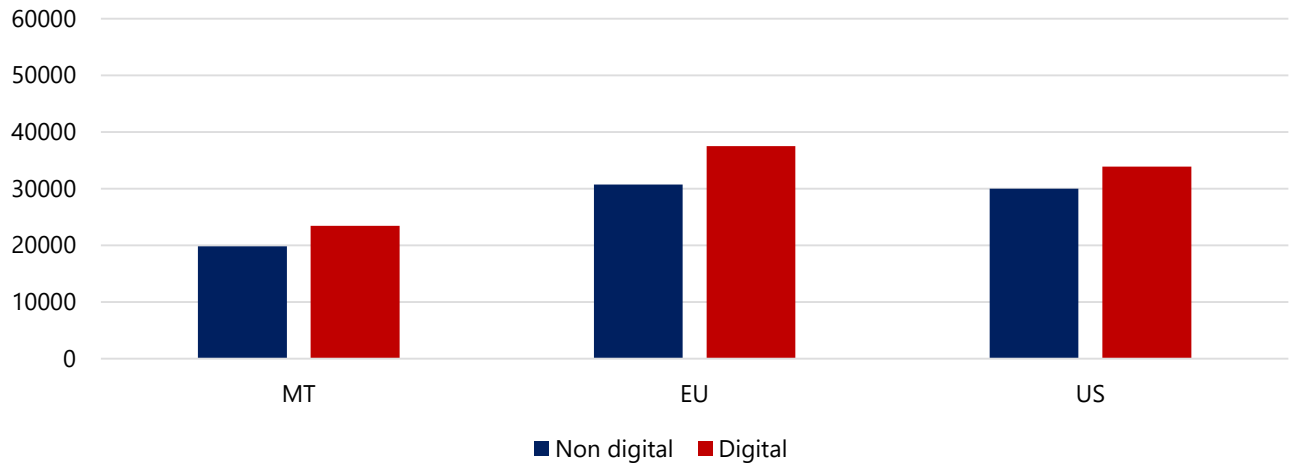
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

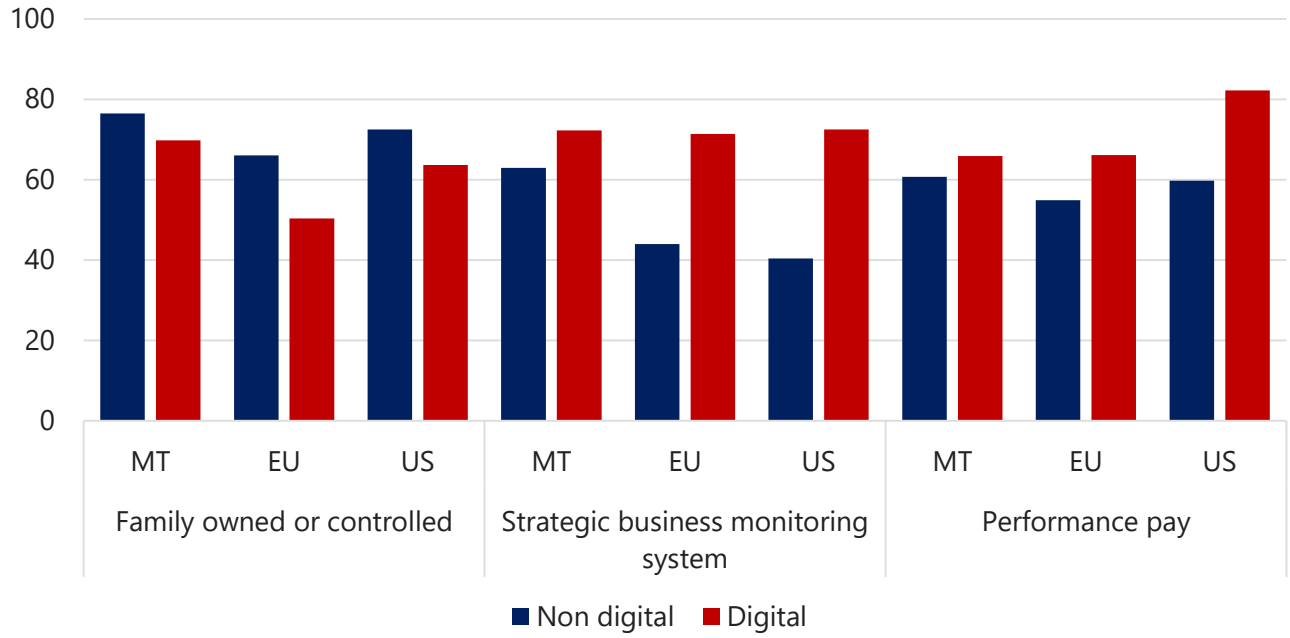
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

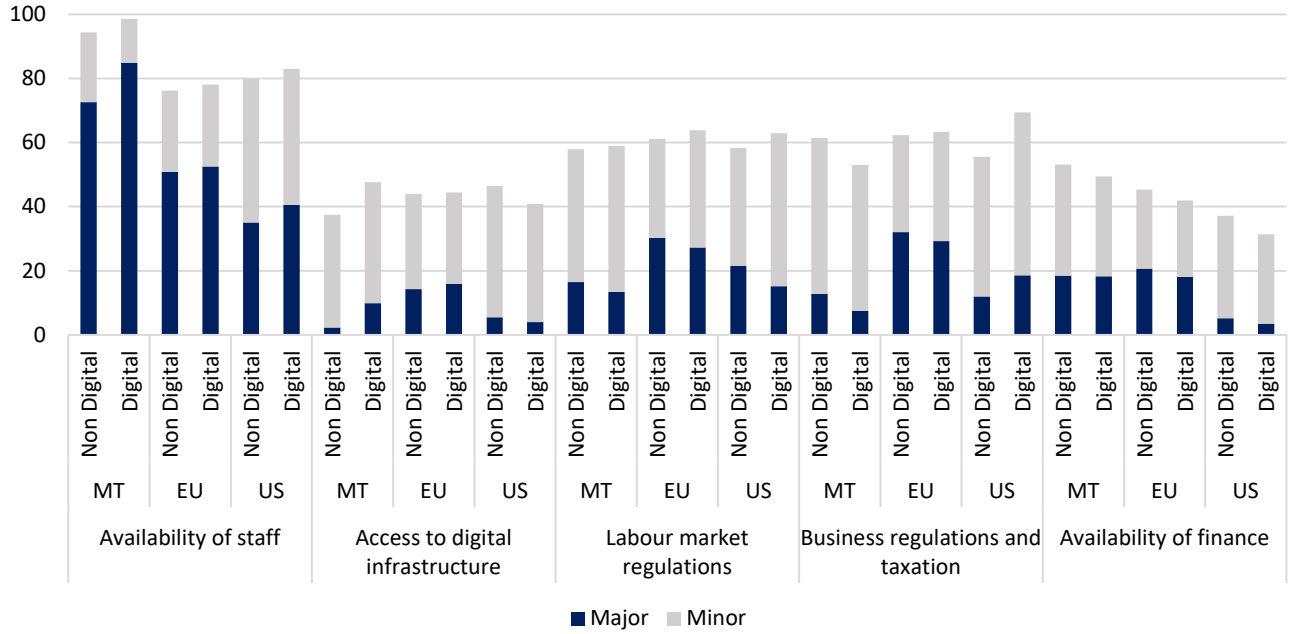
ADOPTION OF DIGITAL TECHNOLOGIES – MALTA

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

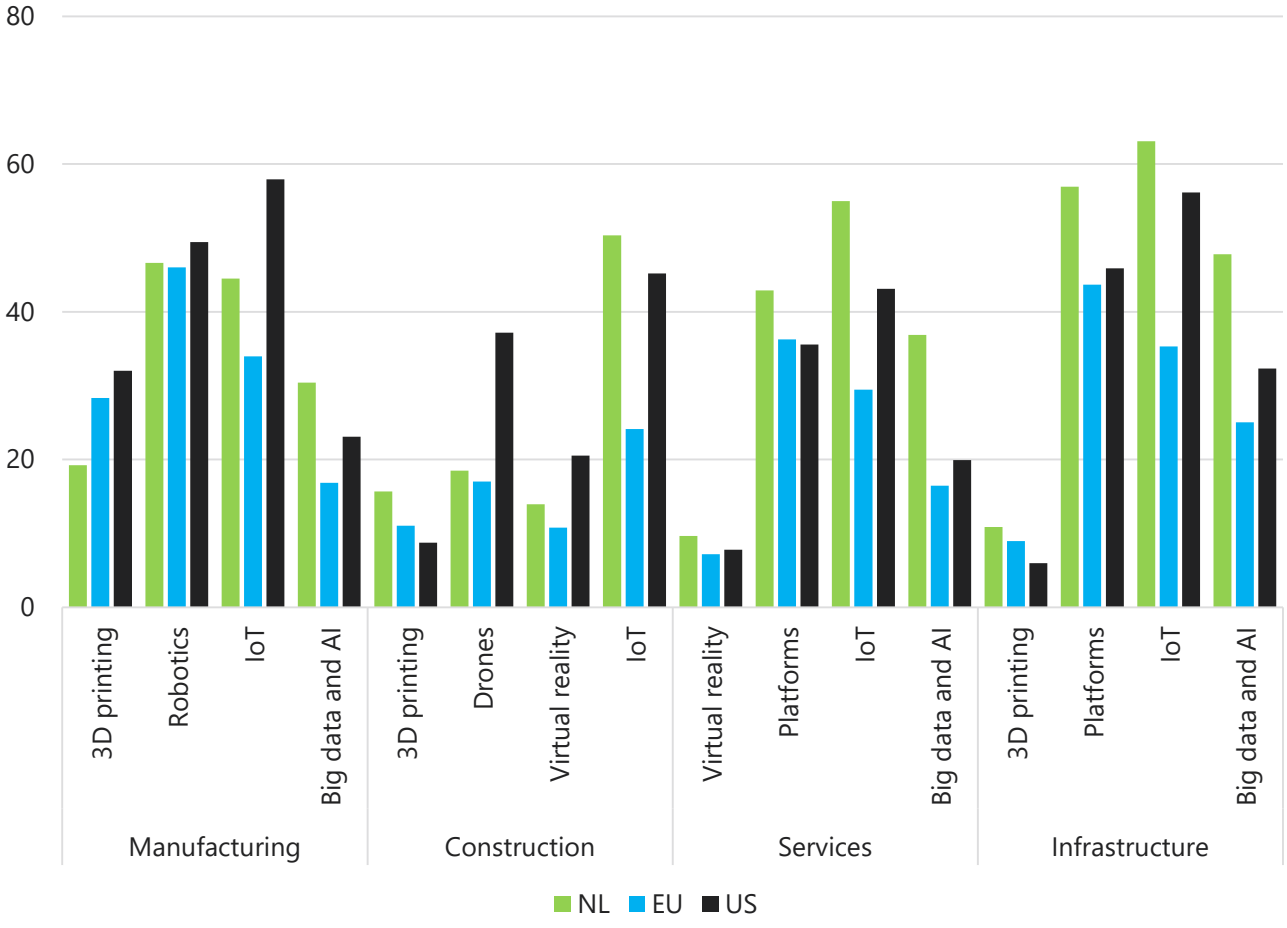


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – NETHERLANDS

- The Netherlands ranks among the *frontrunners* on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above the EU and US average for platforms, IoT and big data.
- Digital adoption rates in the Netherlands are above the EU average for all the sectors but behind the US average for the manufacturing and construction sectors.
- Almost 60% of digital firms in the Netherlands report having increased the number of employees in the last three years, compared to 52% of non-digital firms.
- Median wage per employee and median labour productivity are both higher for digital than non-digital firms and above the EU and the US average.
- Among the reported obstacles to investment, 'lack of availability of staff' is most cited as a major obstacle, especially by digital firms.

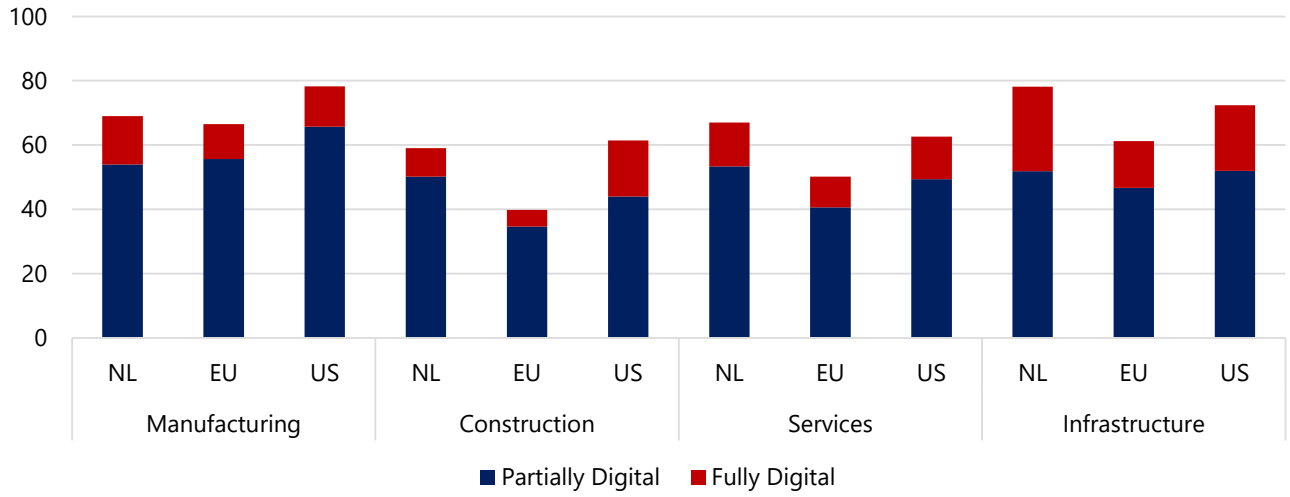
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

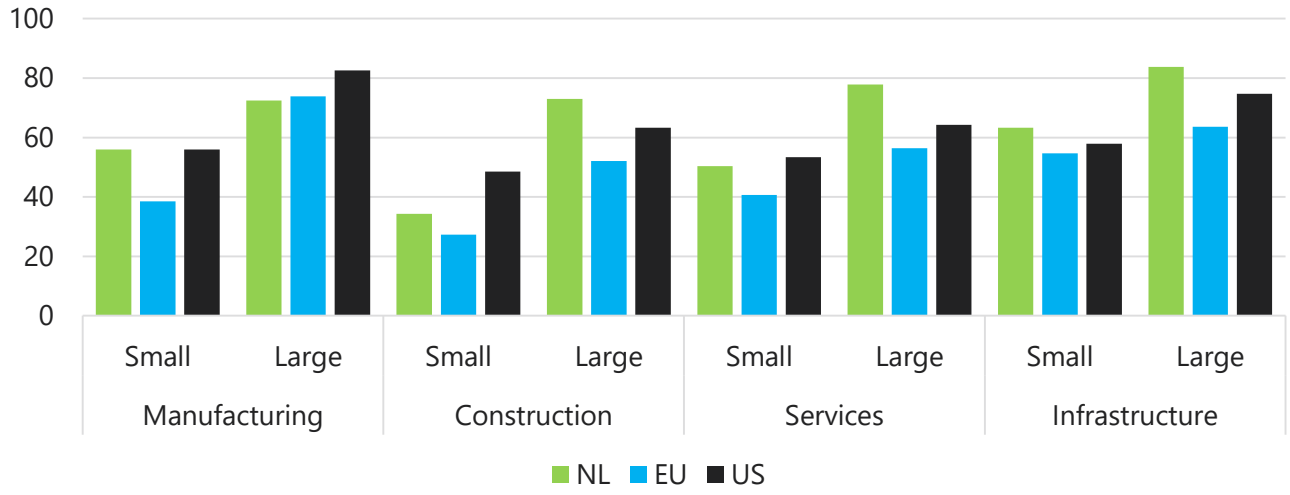
ADOPTION OF DIGITAL TECHNOLOGIES – NETHERLANDS

Digital adoption rates (in % of all firms), by sector



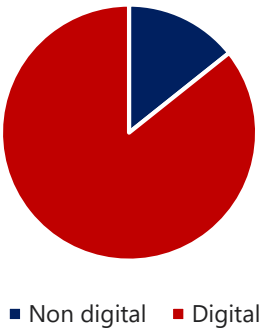
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

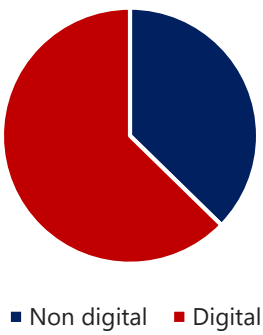


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



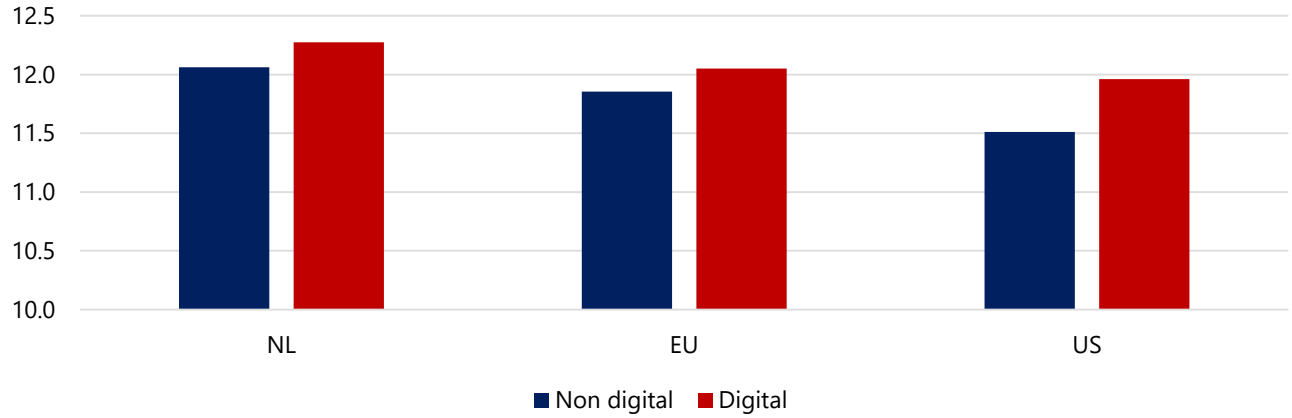
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

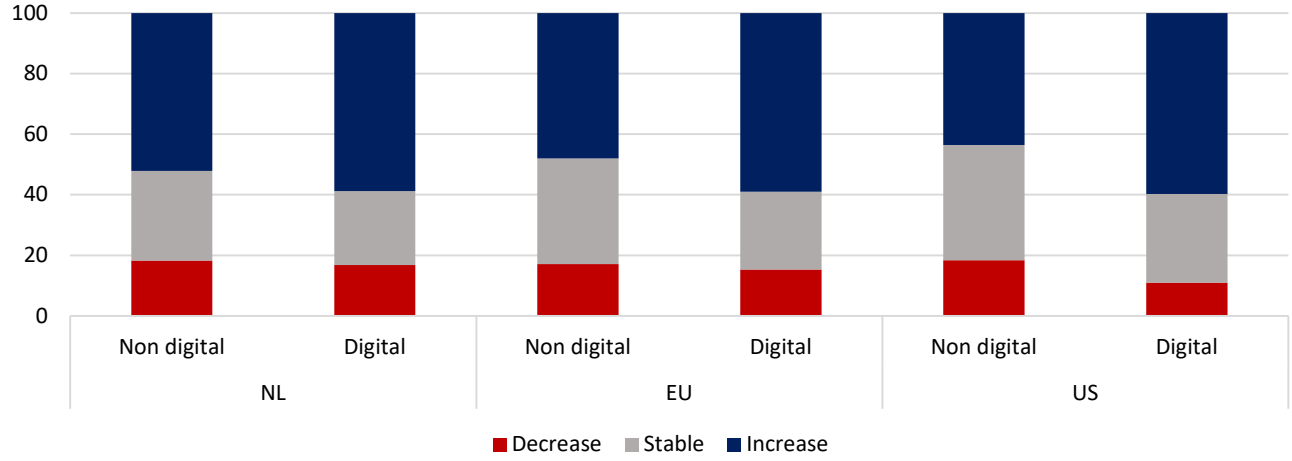
ADOPTION OF DIGITAL TECHNOLOGIES – NETHERLANDS

Median labour productivity (in logarithm)



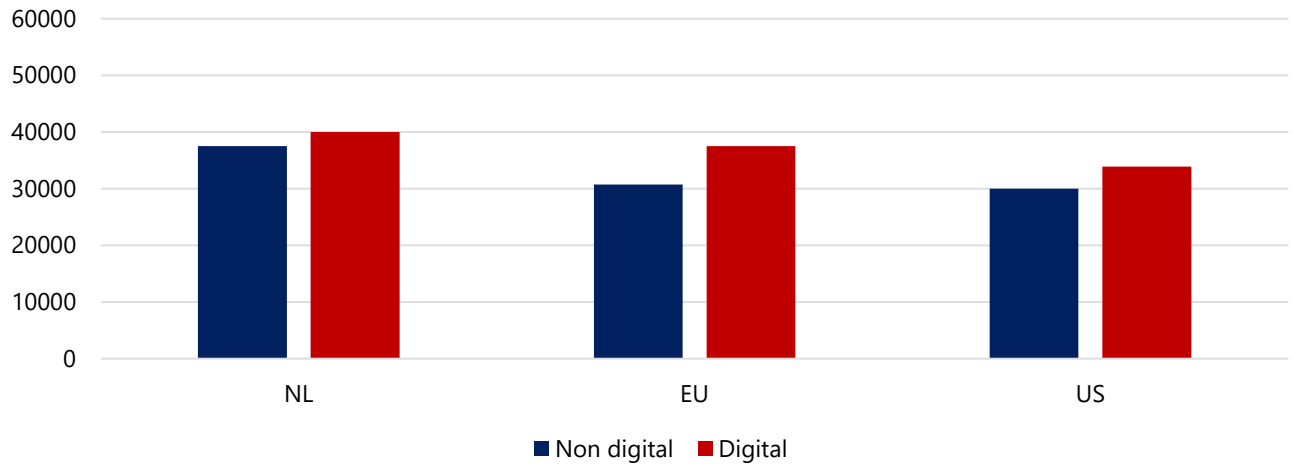
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

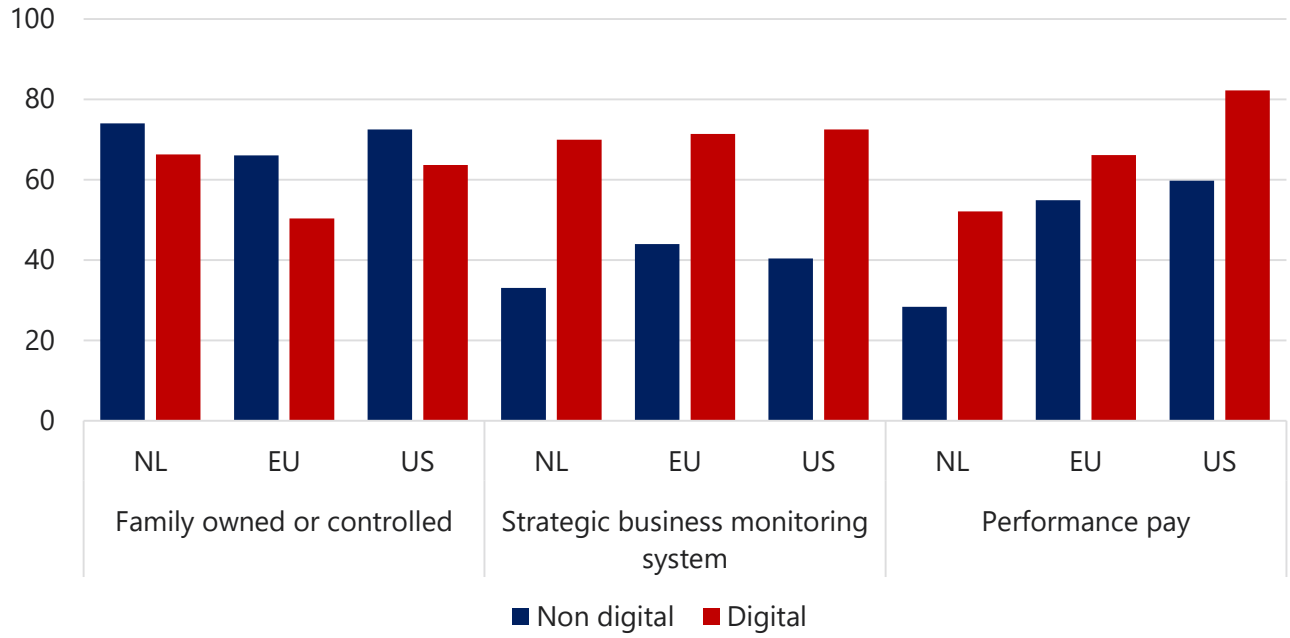
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

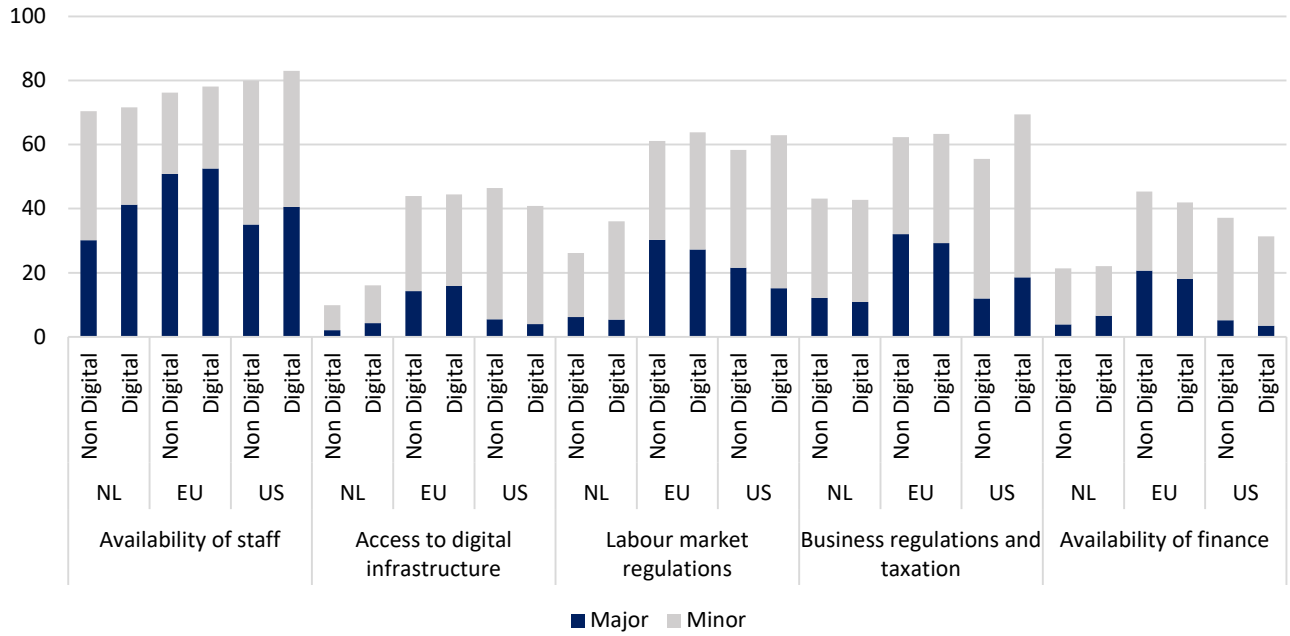
ADOPTION OF DIGITAL TECHNOLOGIES – NETHERLANDS

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

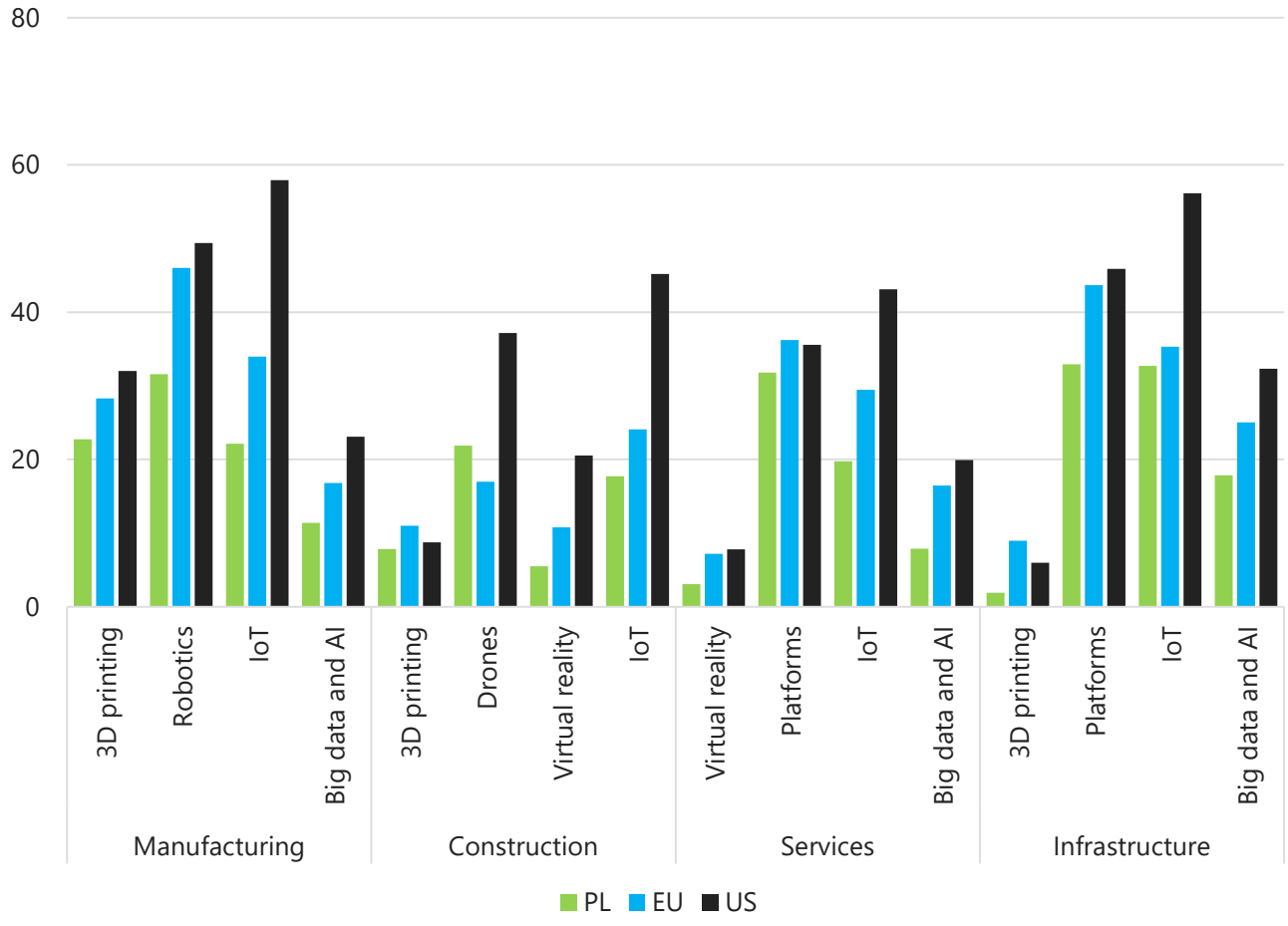


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – POLAND

- Poland ranks among the *modest* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above the EU average for drones.
- Digital adoption rates in Poland are below both the EU and the US average for all sectors.
- Almost 60% of digital firms report having increased the number of employees in the last three years, compared to about 45% of non-digital firms.
- Median wage per employee is slightly higher for digital than non-digital firms in Poland, but far below the EU average for both digital and non-digital firms.
- Among the reported obstacles to investment, 'lack of availability of staff' is the most cited by both digital and non-digital firms, followed by 'business regulations and taxation' and 'labour market regulations'.

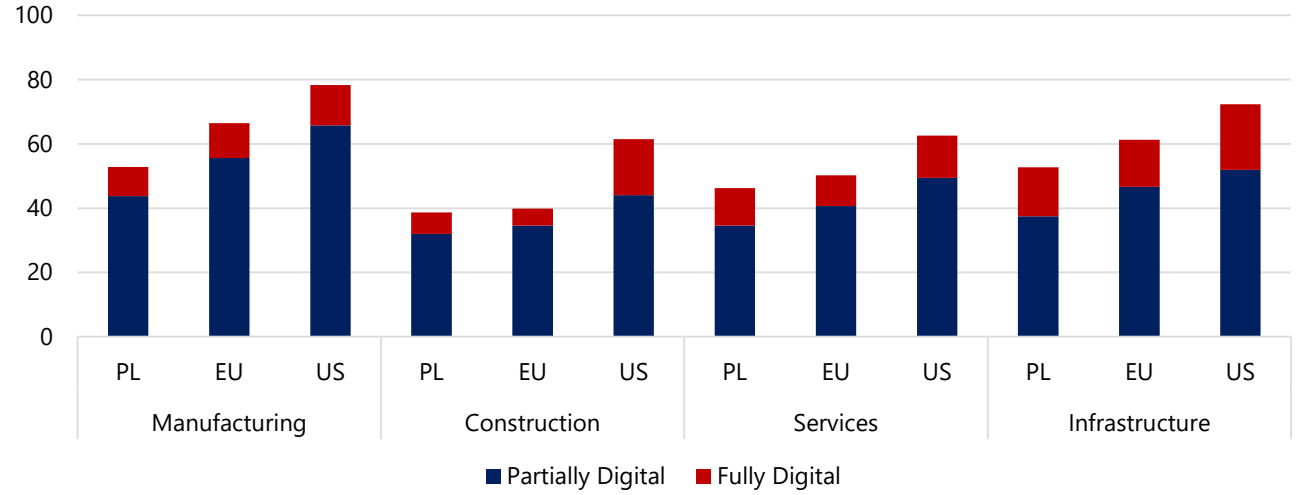
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

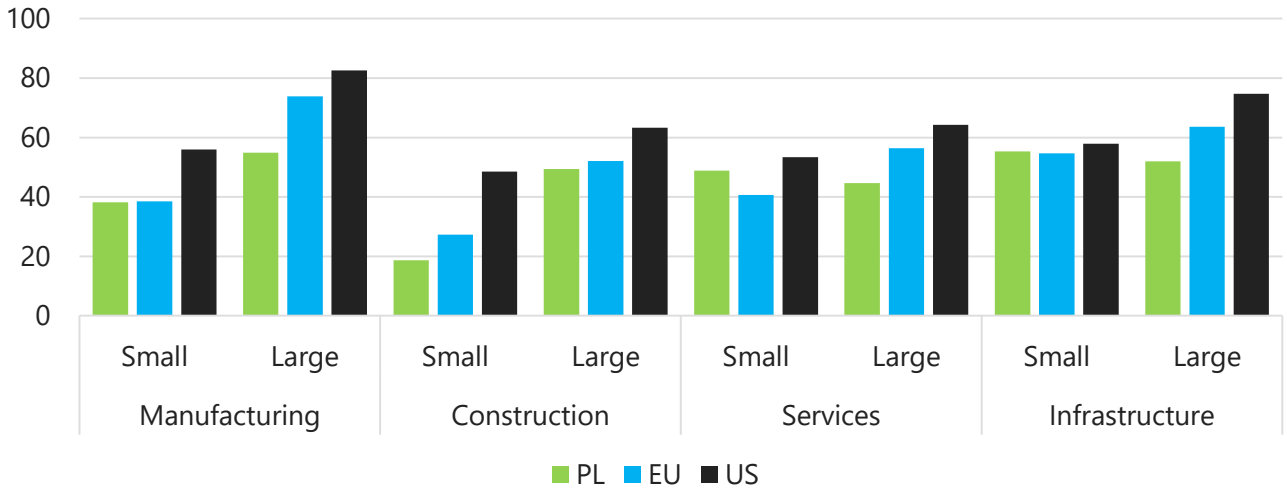
ADOPTION OF DIGITAL TECHNOLOGIES – POLAND

Digital adoption rates (in % of all firms), by sector



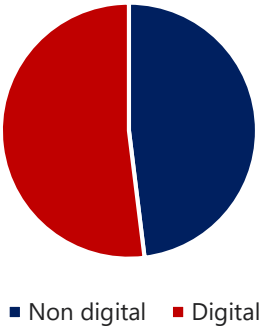
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

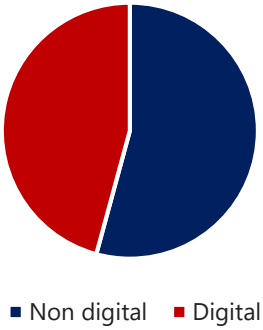


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



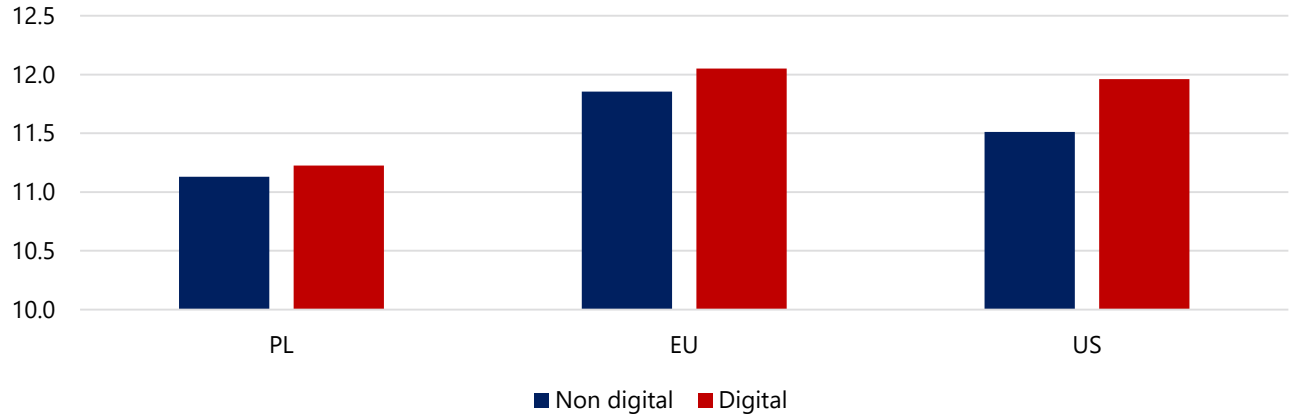
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

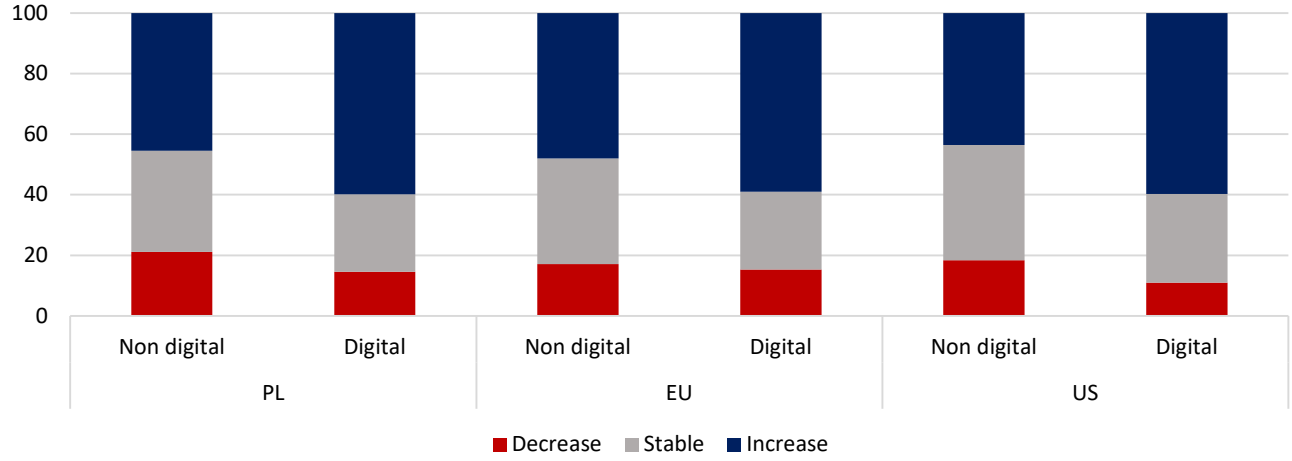
ADOPTION OF DIGITAL TECHNOLOGIES – POLAND

Median labour productivity (in logarithm)



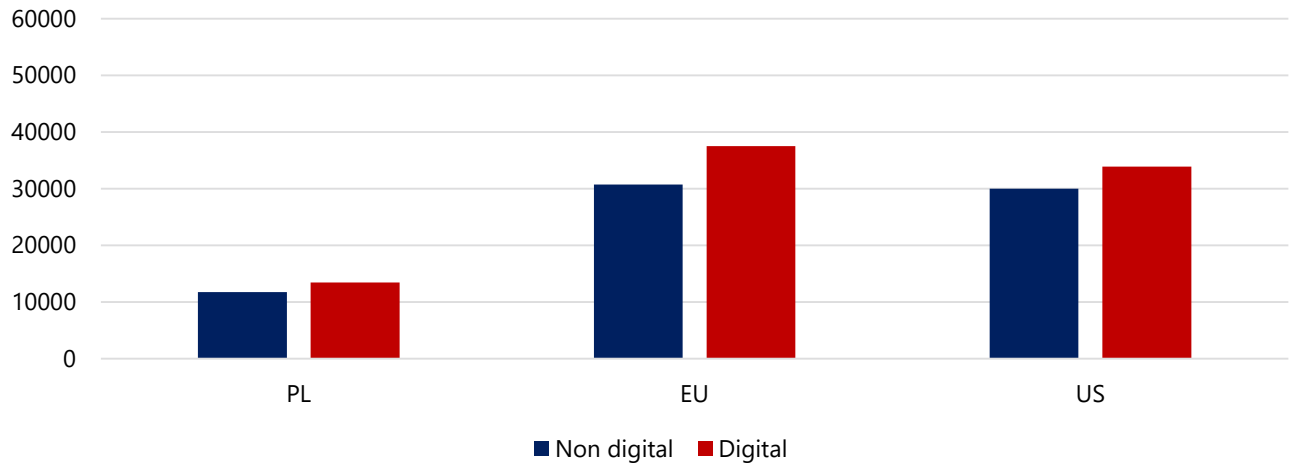
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

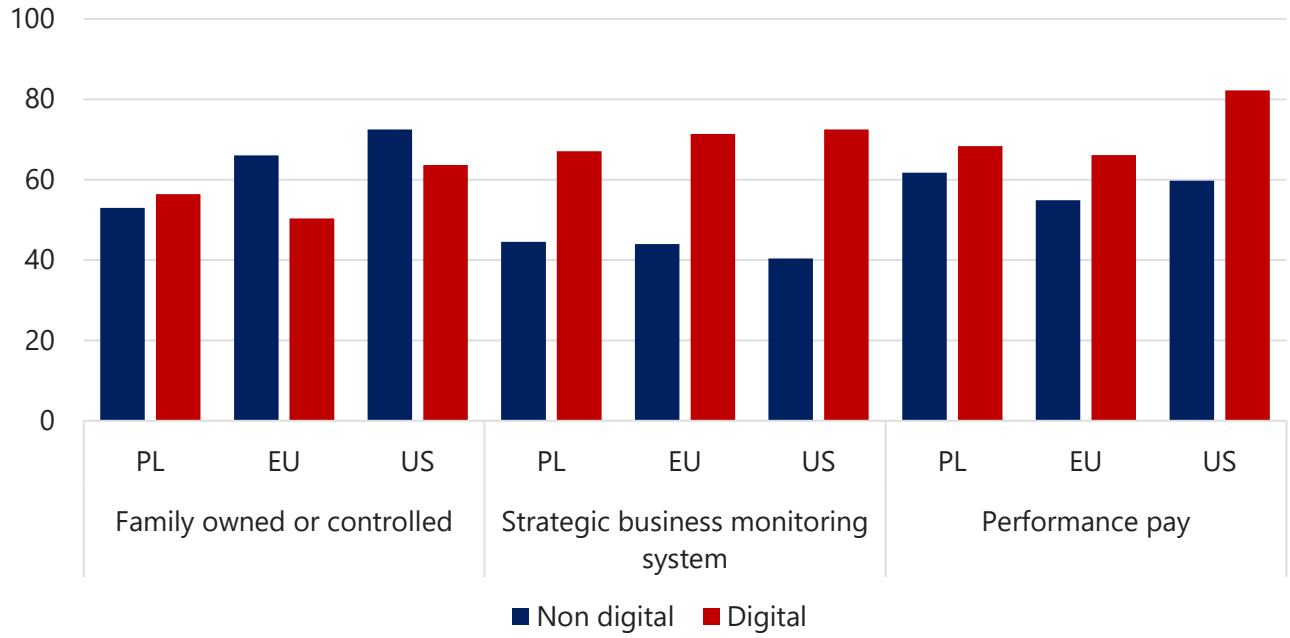
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

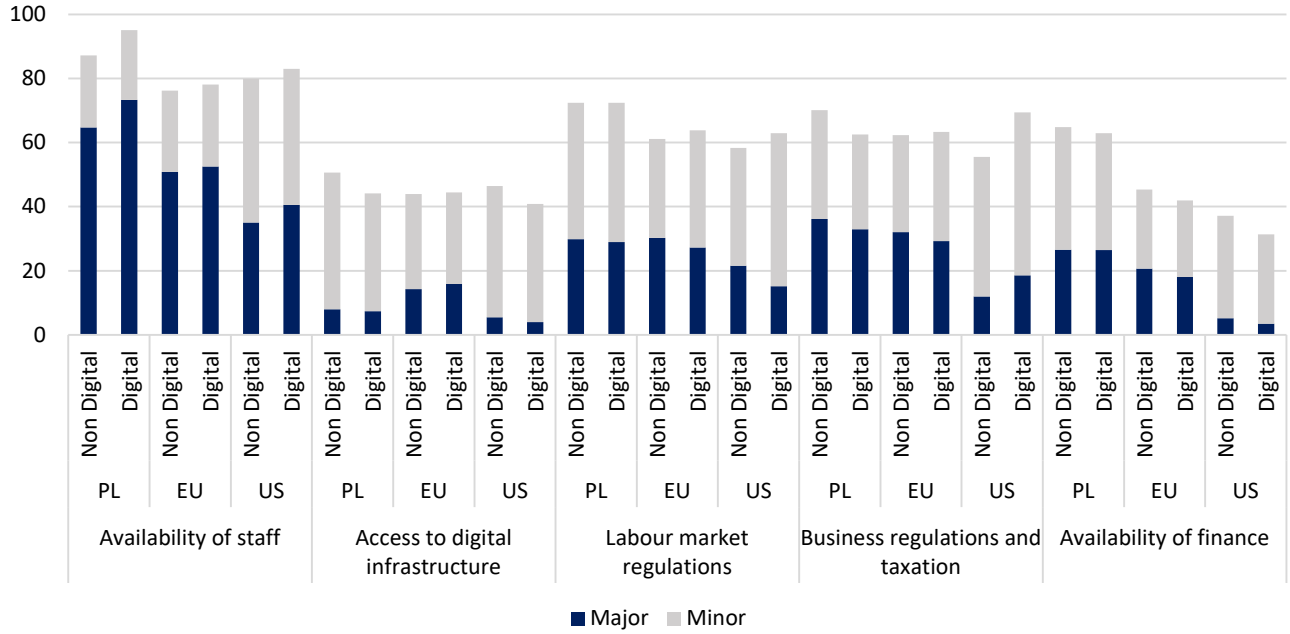
ADOPTION OF DIGITAL TECHNOLOGIES – POLAND

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

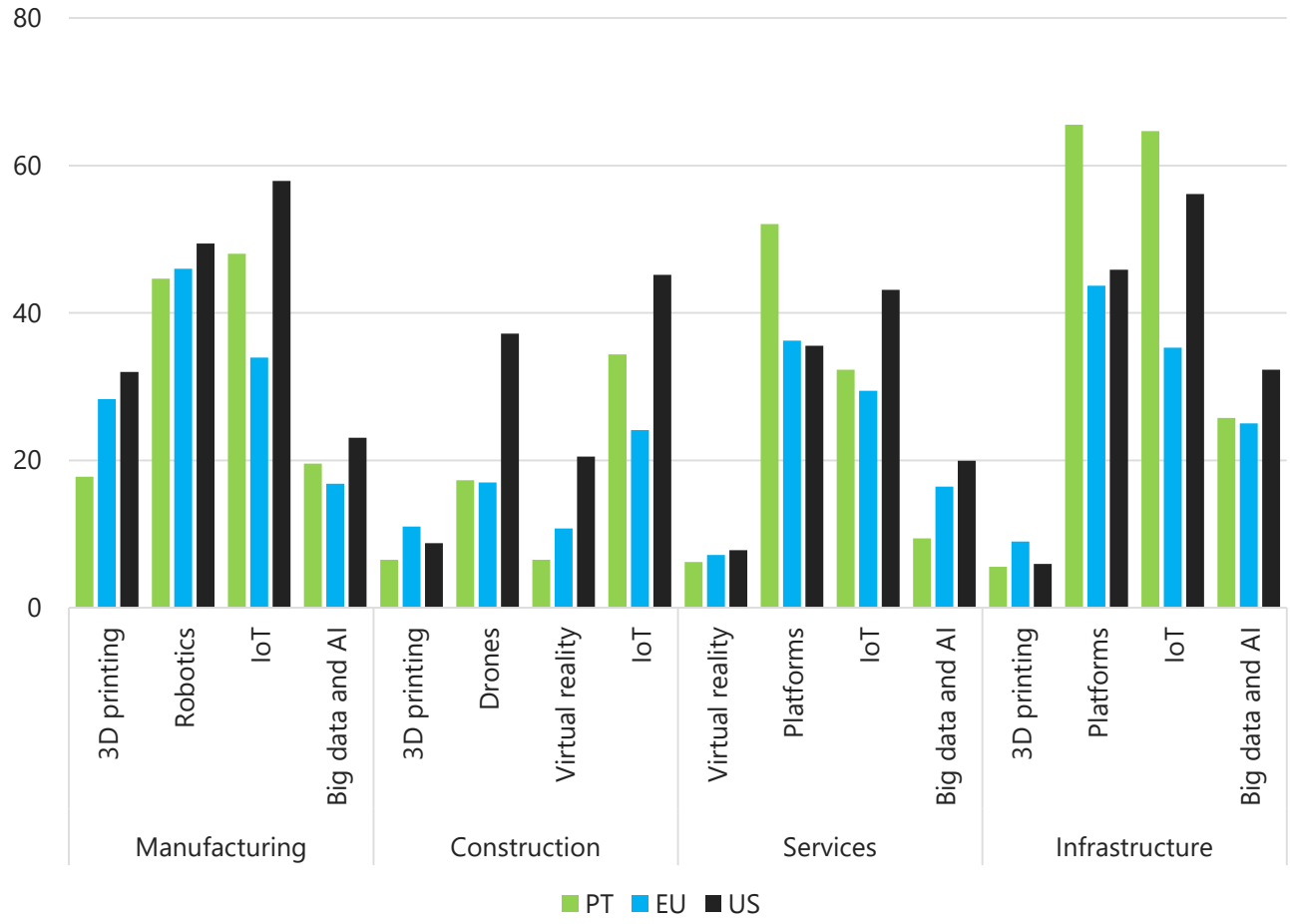


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – PORTUGAL

- Portugal ranks among the *strong* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above the EU and US average for internet of things in the infrastructure sector and for platforms in the services sector.
- Digital adoption rates in Portugal are above the EU average for all sectors except for manufacturing, and also above the US average for the services sector and even more for infrastructure.
- Almost 60% of Portuguese digital firms report having increased the number of employees in the last three years, compared to 50% of non-digital firms.
- Contrary to the EU and the US, in Portugal, the median labour productivity does not differ among digital and non-digital firms. However, median wage per employee is slightly higher for digital than non-digital firms, but still below the EU average.
- Among the reported obstacles to investment, 'business regulations and taxation' is the most cited by digital firms, while 'lack of availability of staff' is the most cited by non-digital firms.

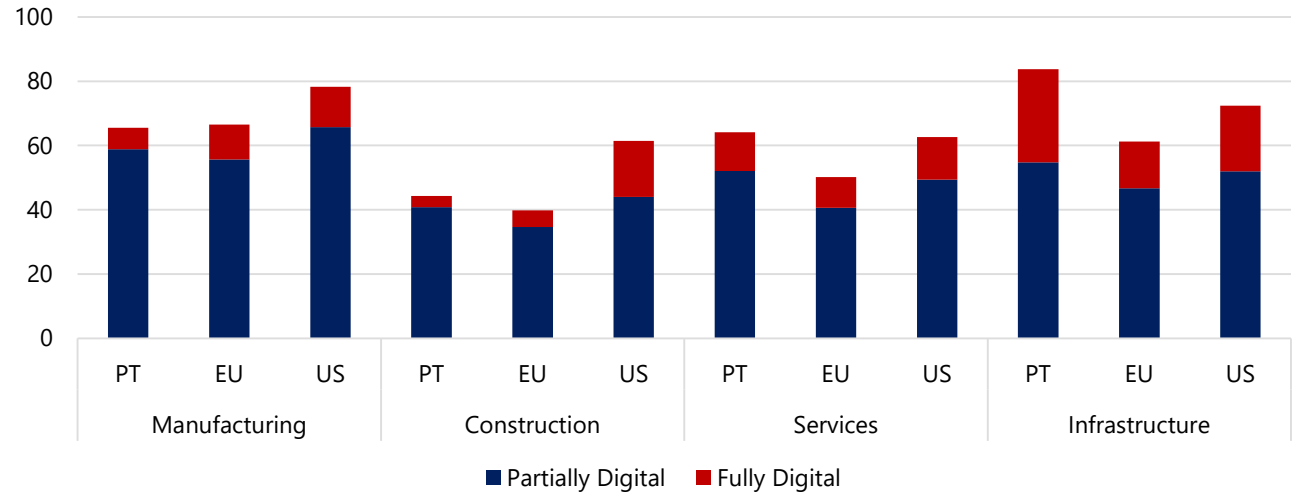
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

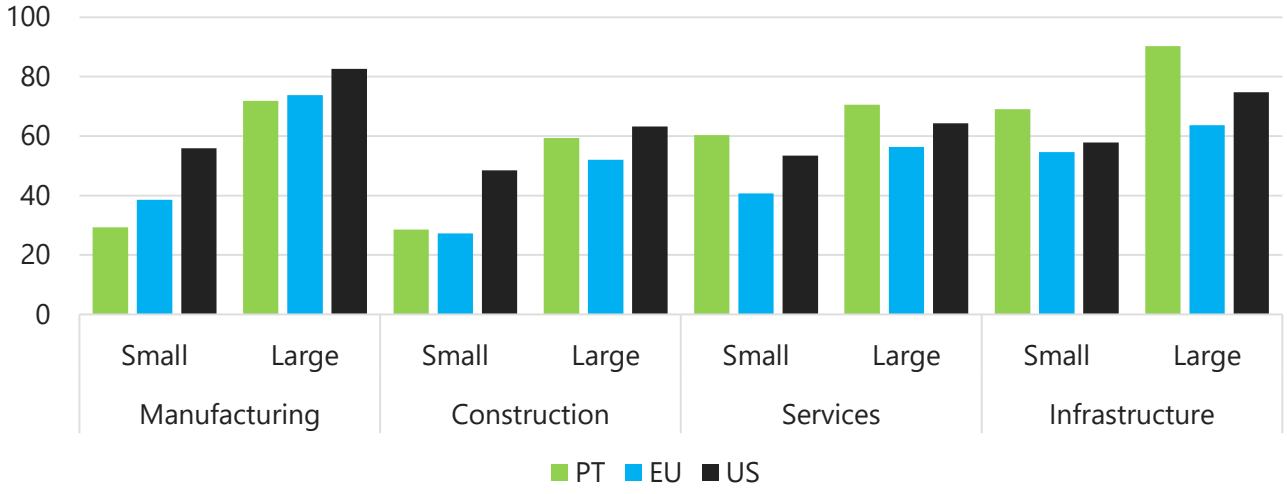
ADOPTION OF DIGITAL TECHNOLOGIES – PORTUGAL

Digital adoption rates (in % of all firms), by sector



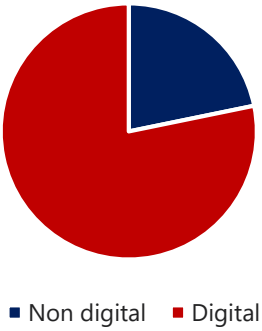
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

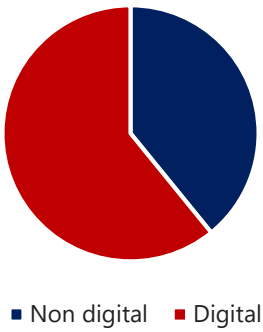


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



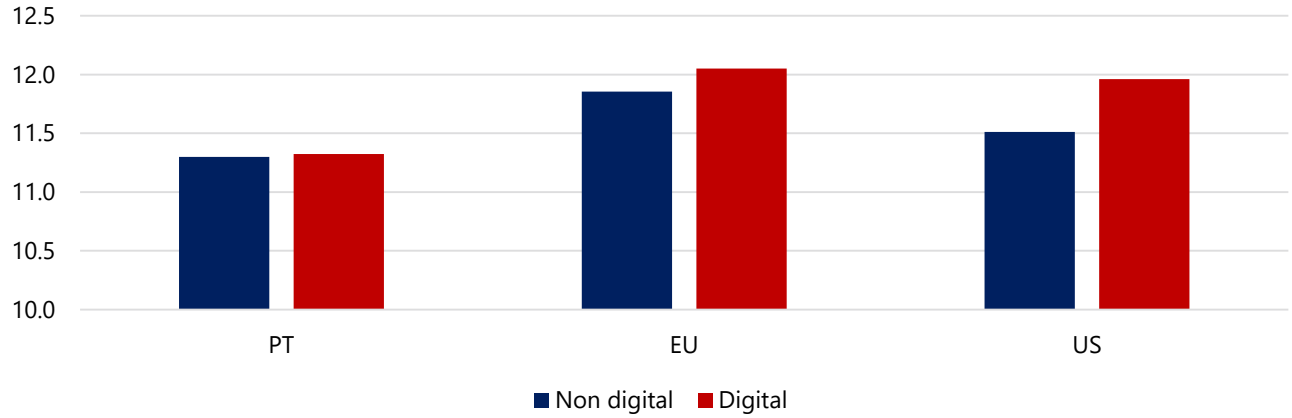
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

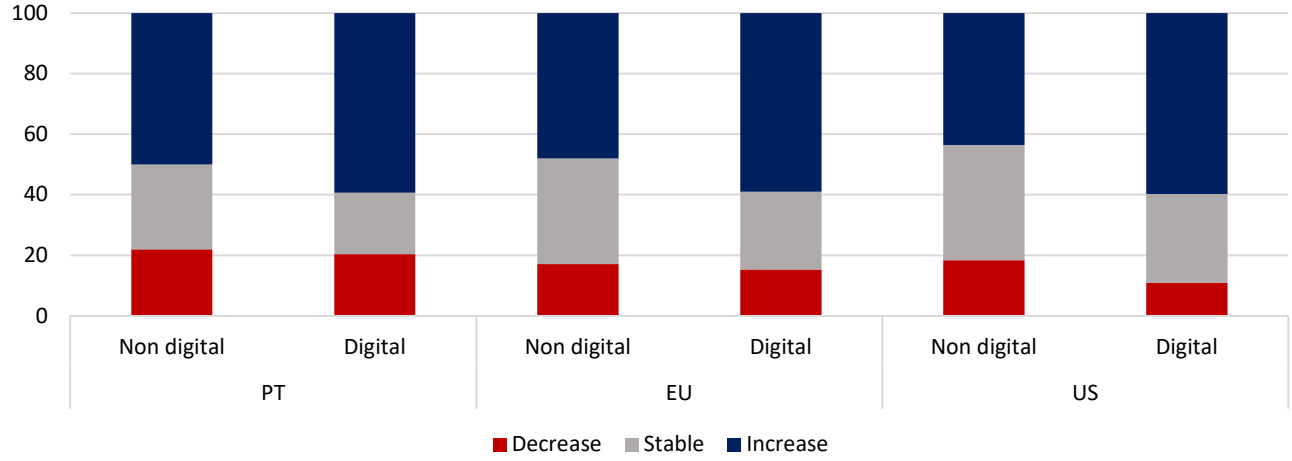
ADOPTION OF DIGITAL TECHNOLOGIES – PORTUGAL

Median labour productivity (in logarithm)



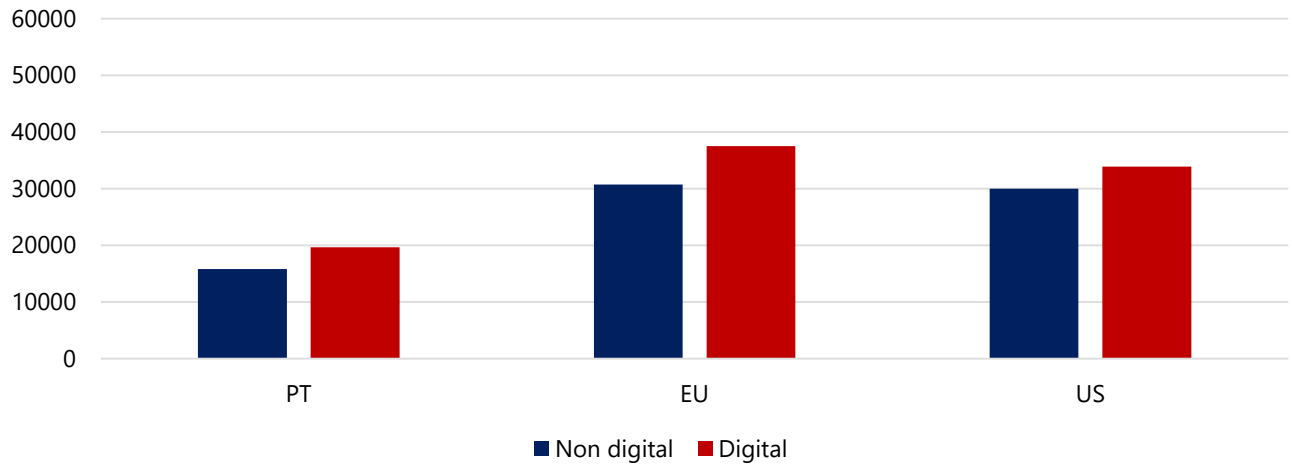
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

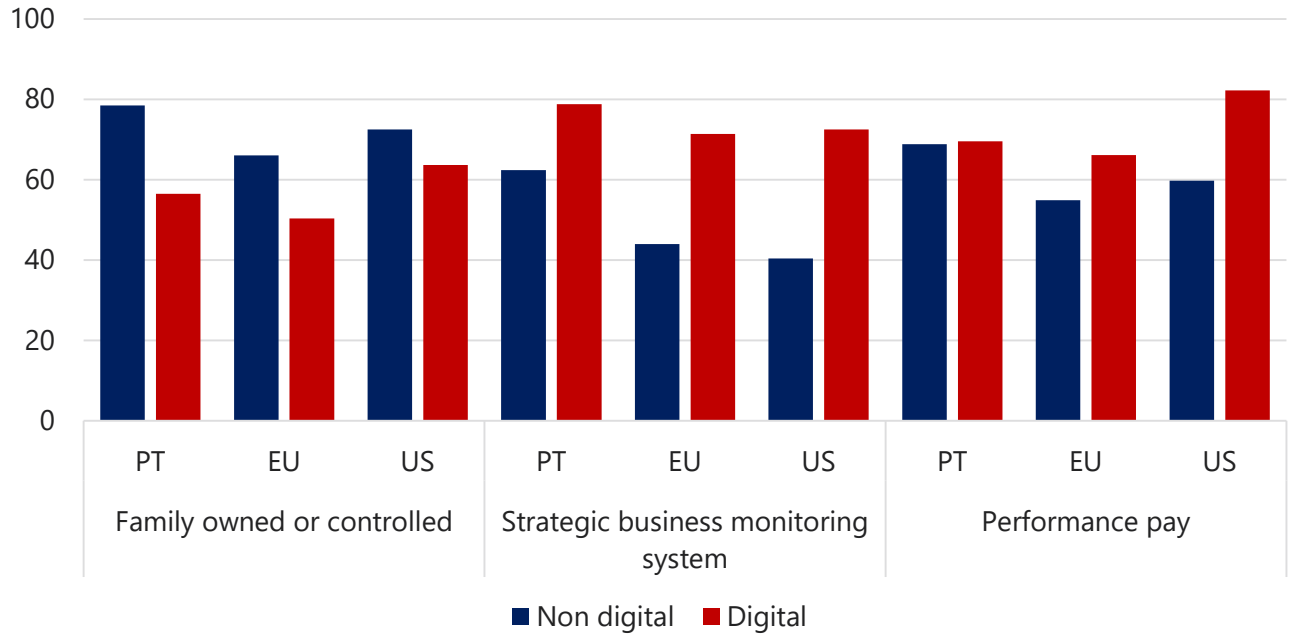
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

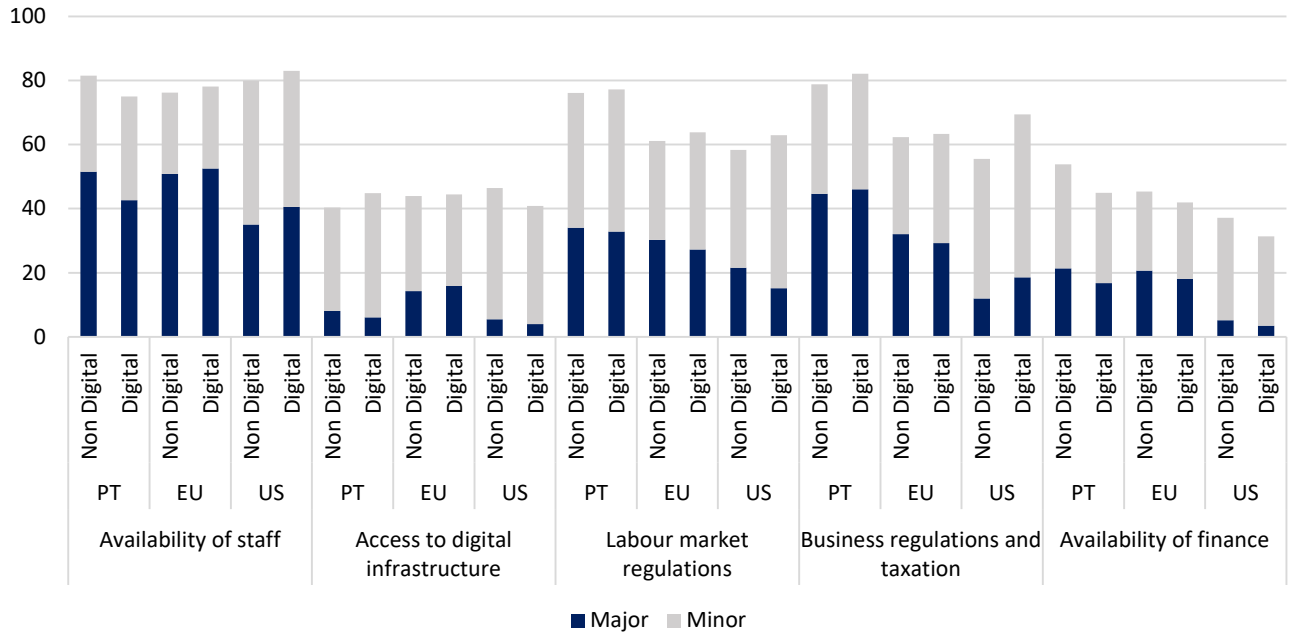
ADOPTION OF DIGITAL TECHNOLOGIES – PORTUGAL

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

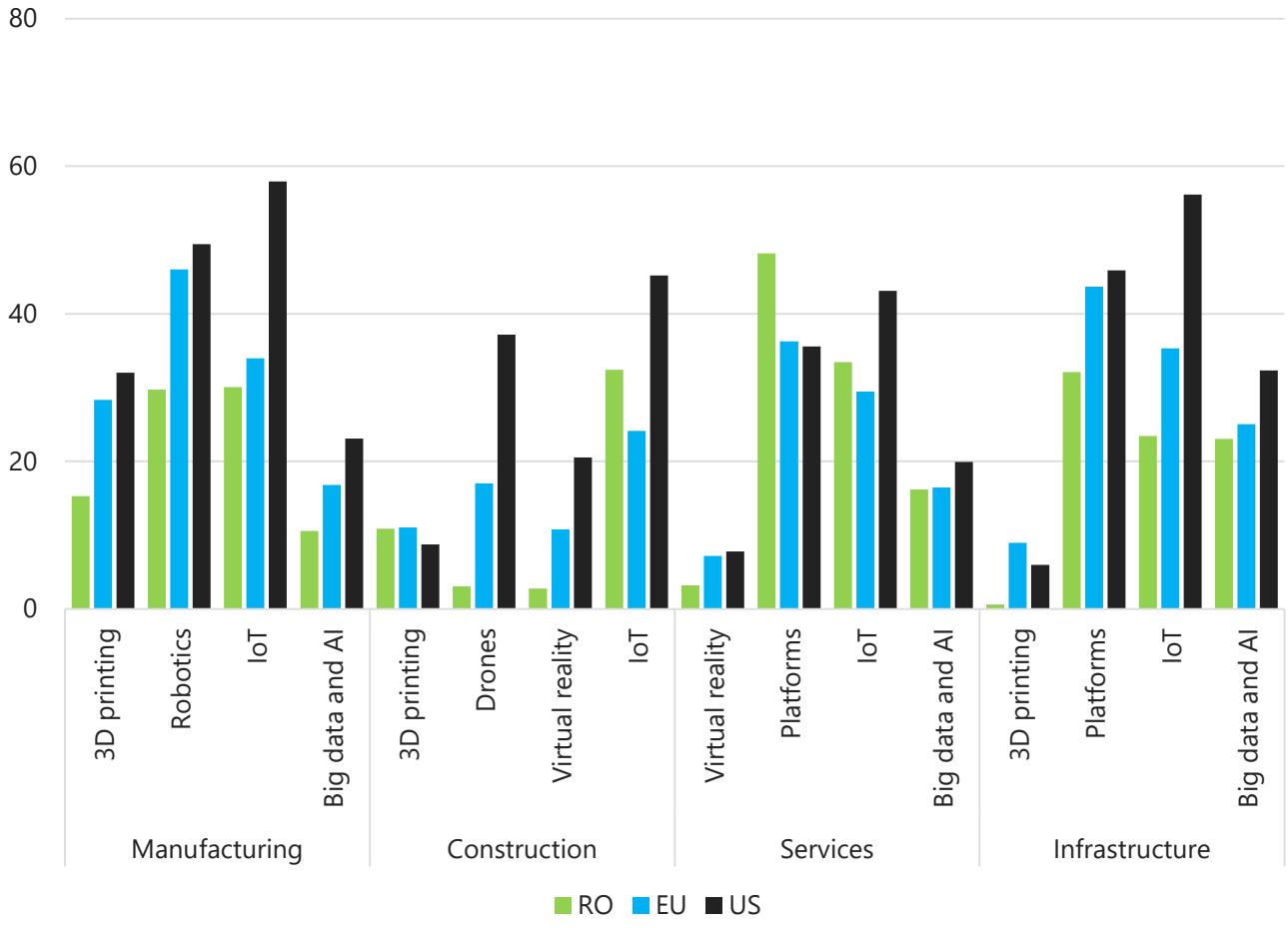


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – ROMANIA

- Romania ranks among the *moderate* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above the EU and US average for platforms in the services sector.
- Digital adoption rates in Romania are above the EU average for the services sector. However, adoption rates lag behind the US average for all sectors.
- Almost 65% of digital firms report having increased the number of employees in the last three years, compared to 48% of non-digital firms.
- Median wage per employee is rather similar for digital and non-digital firms, although median labour productivity is slightly higher among digital companies compared to non-digital ones in Romania.
- Among the reported obstacles to investment, 'lack of availability of staff with the right skills' is the most cited, followed by 'labour market regulations'.

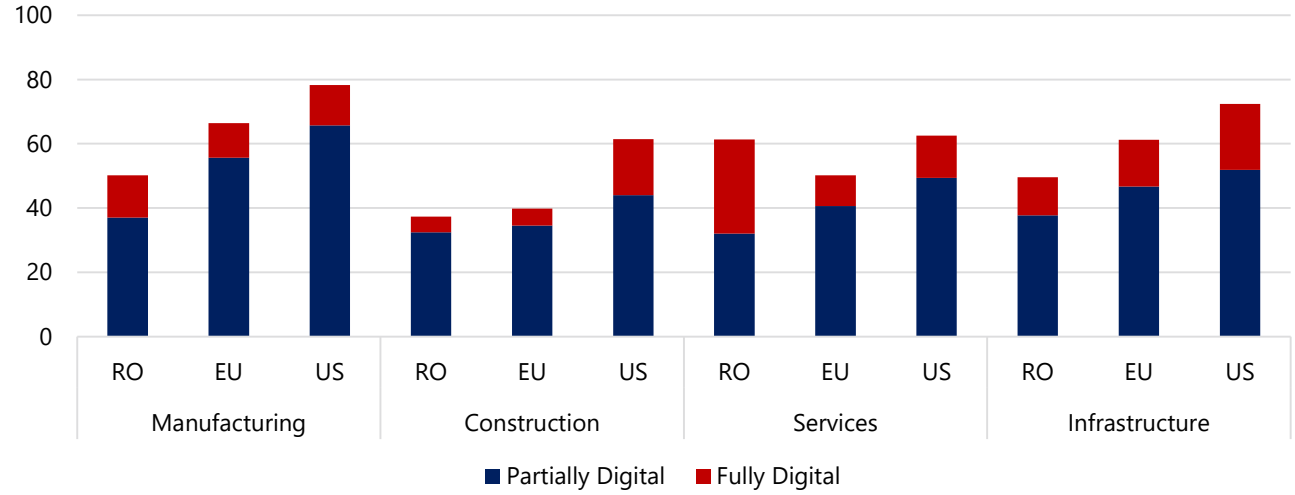
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

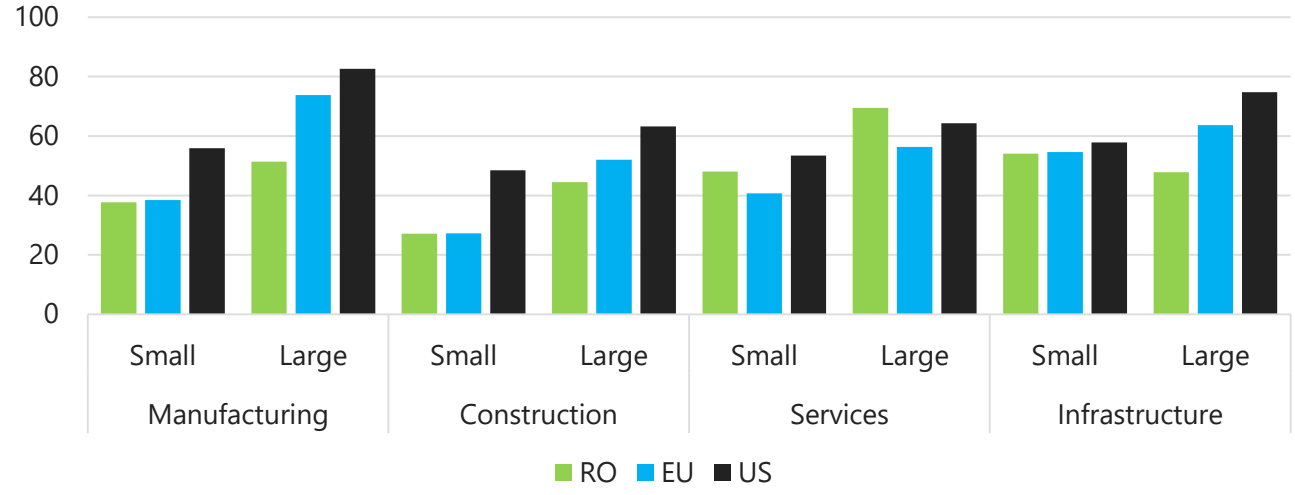
ADOPTION OF DIGITAL TECHNOLOGIES – ROMANIA

Digital adoption rates (in % of all firms), by sector



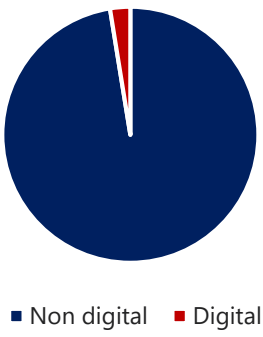
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

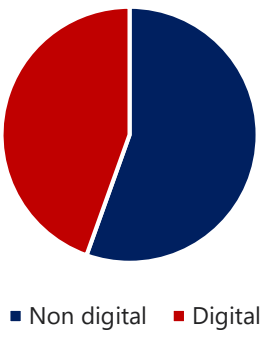


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



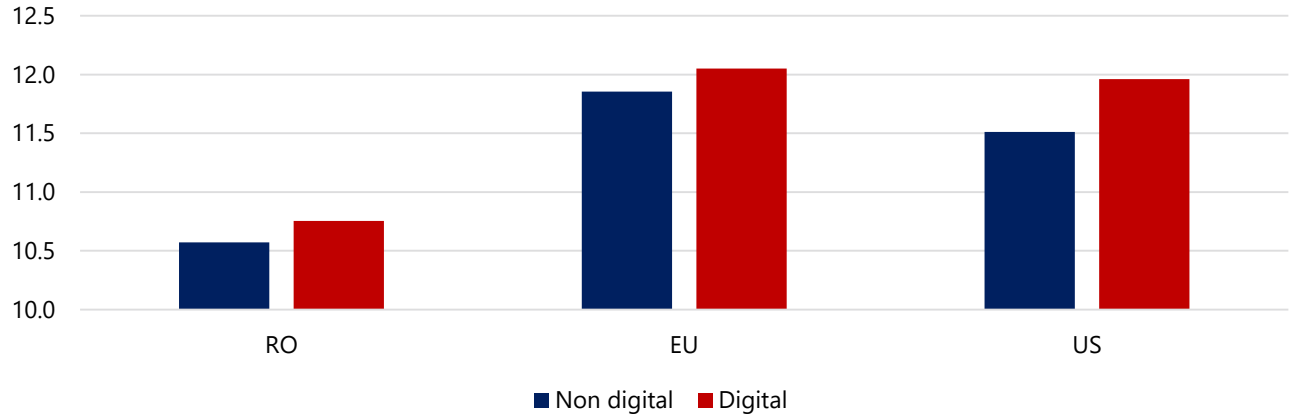
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

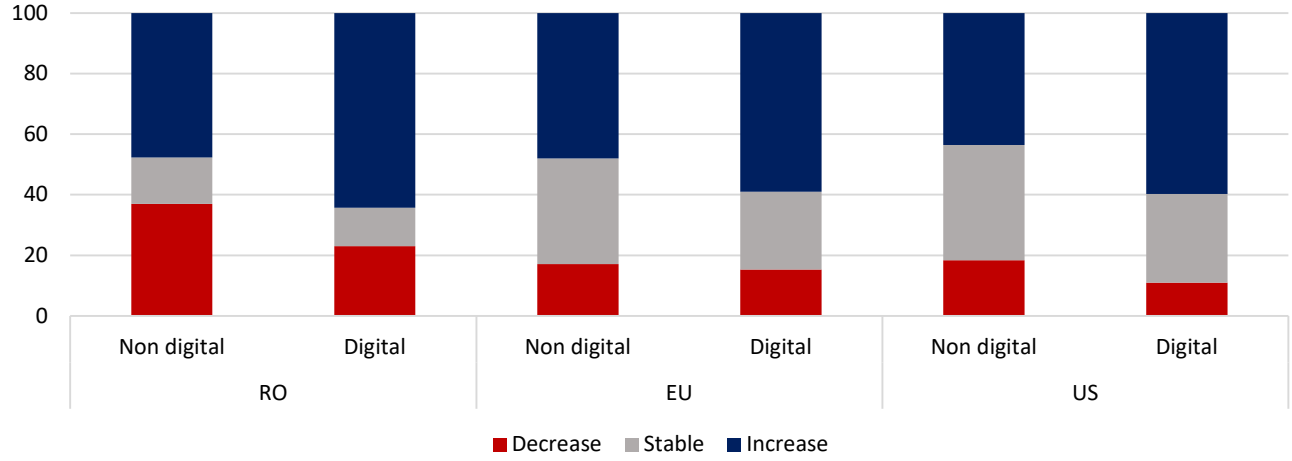
ADOPTION OF DIGITAL TECHNOLOGIES – ROMANIA

Median labour productivity (in logarithm)



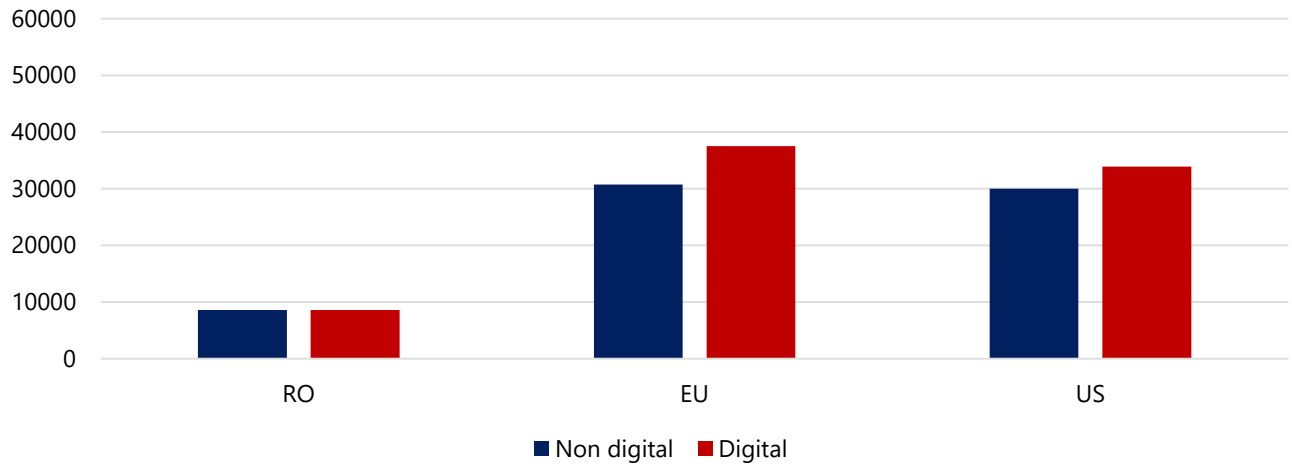
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

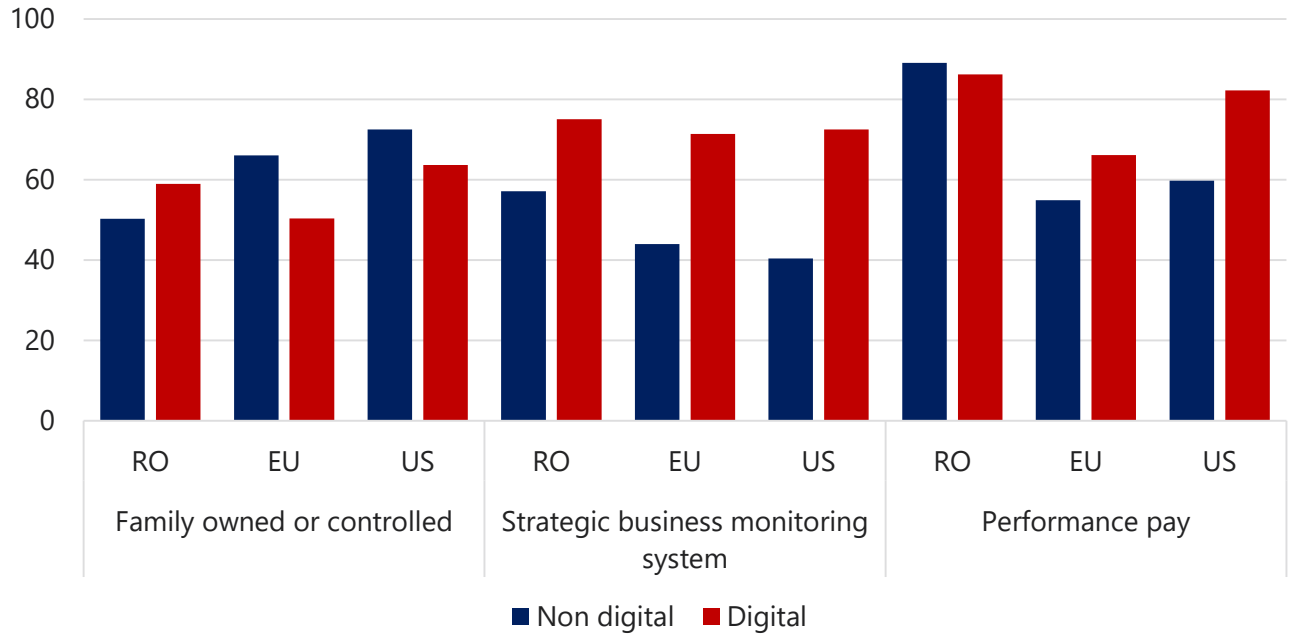
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

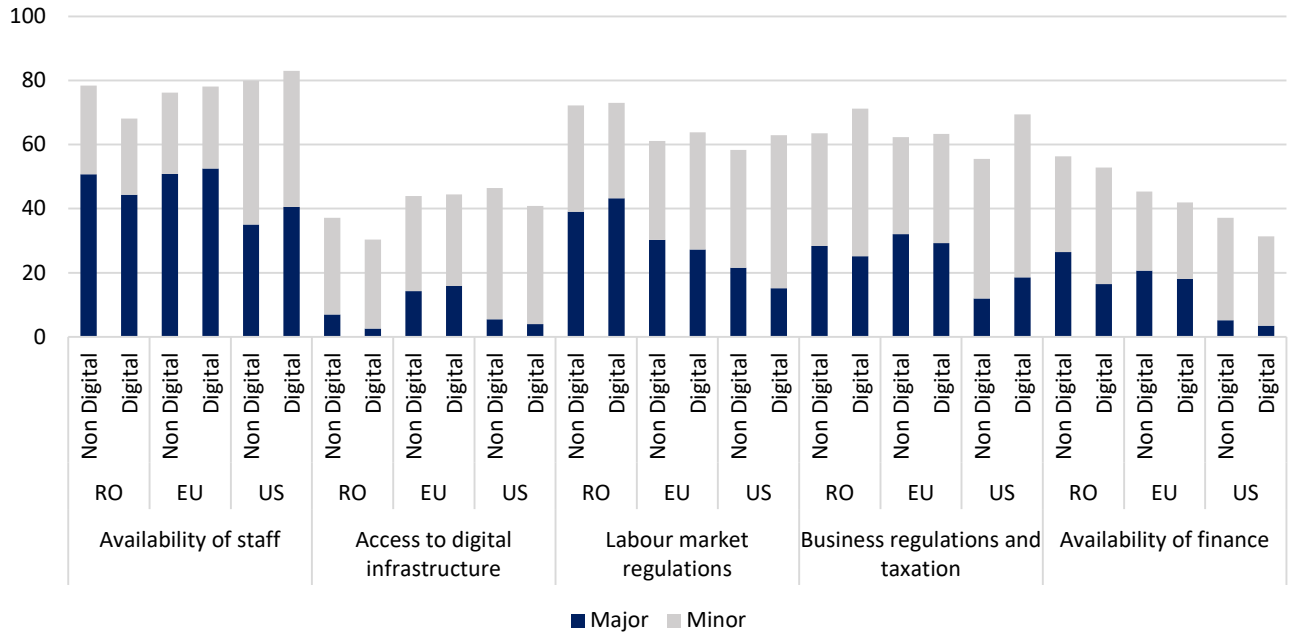
ADOPTION OF DIGITAL TECHNOLOGIES – ROMANIA

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

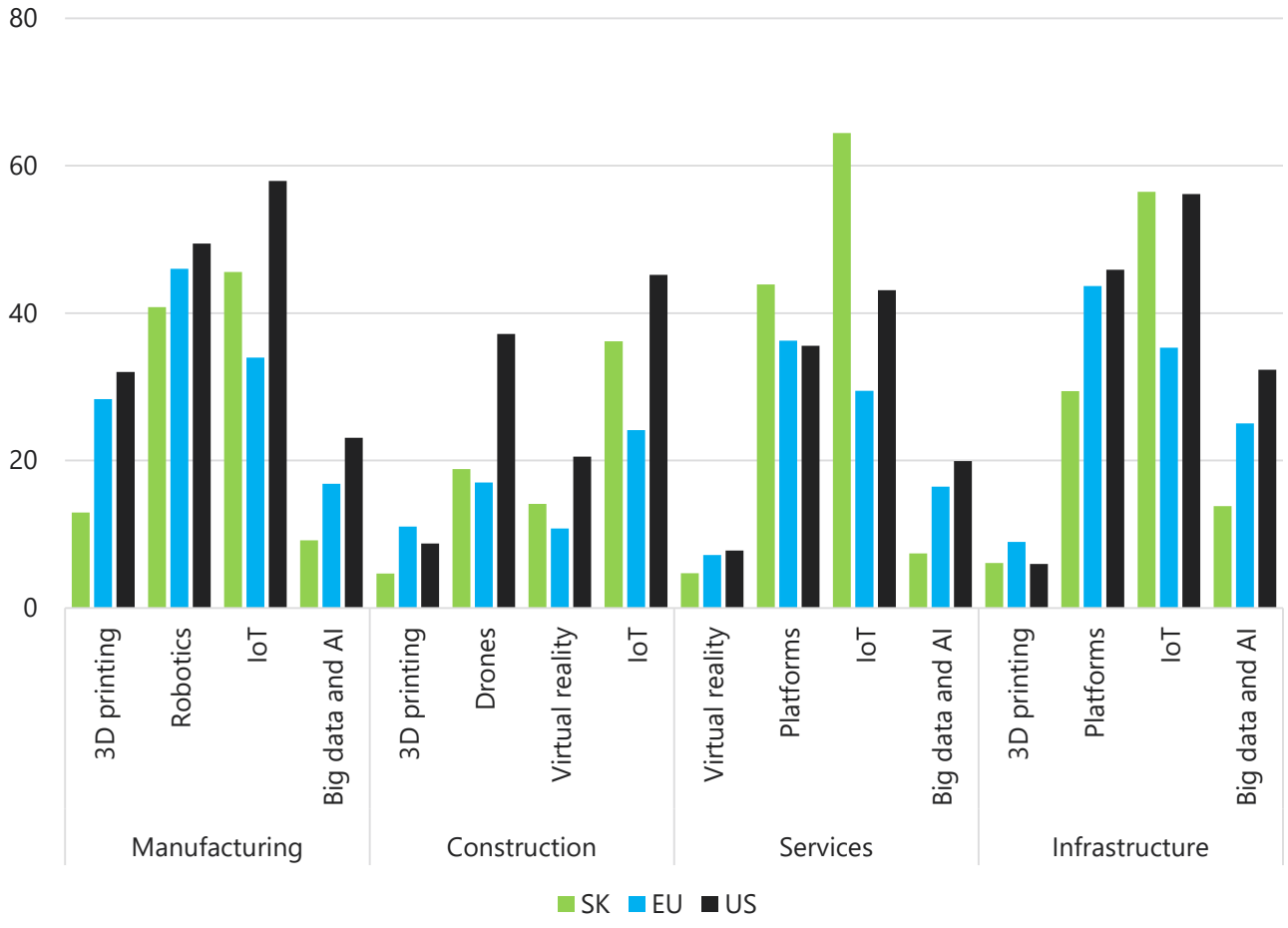


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – SLOVAKIA

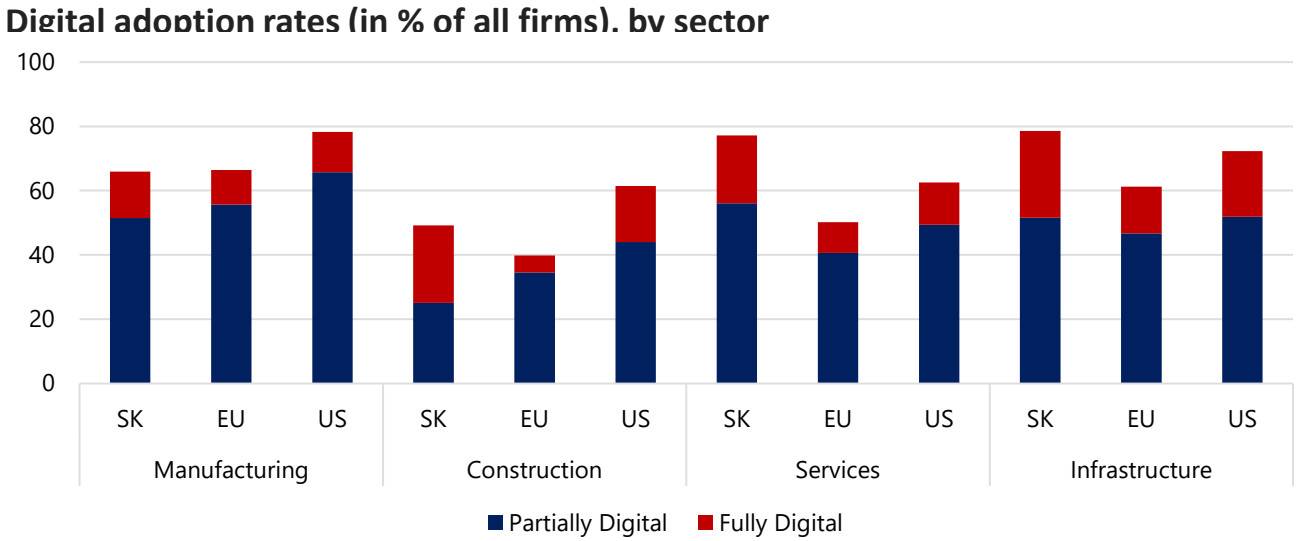
- Slovakia ranks among the *strong* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above the EU and US average for IoT in the services and infrastructure sectors, and for platforms in the services sector.
- Digital adoption rates in Slovakia are above the EU average for all sectors except for manufacturing, and also above the US average for the services and infrastructure sectors.
- More than 42% of digital firms report having increased the number of employees in the last three years, compared to 33% of non-digital firms.
- Median wage per employee is higher for digital than non-digital firms in Slovakia, but far below the EU and the US average.
- Among the reported obstacles to investment, 'labour market regulations' is the most cited by digital firms, immediately followed by 'lack of availability of staff'.

Adoption of different digital technologies (in % of all firms), by sector

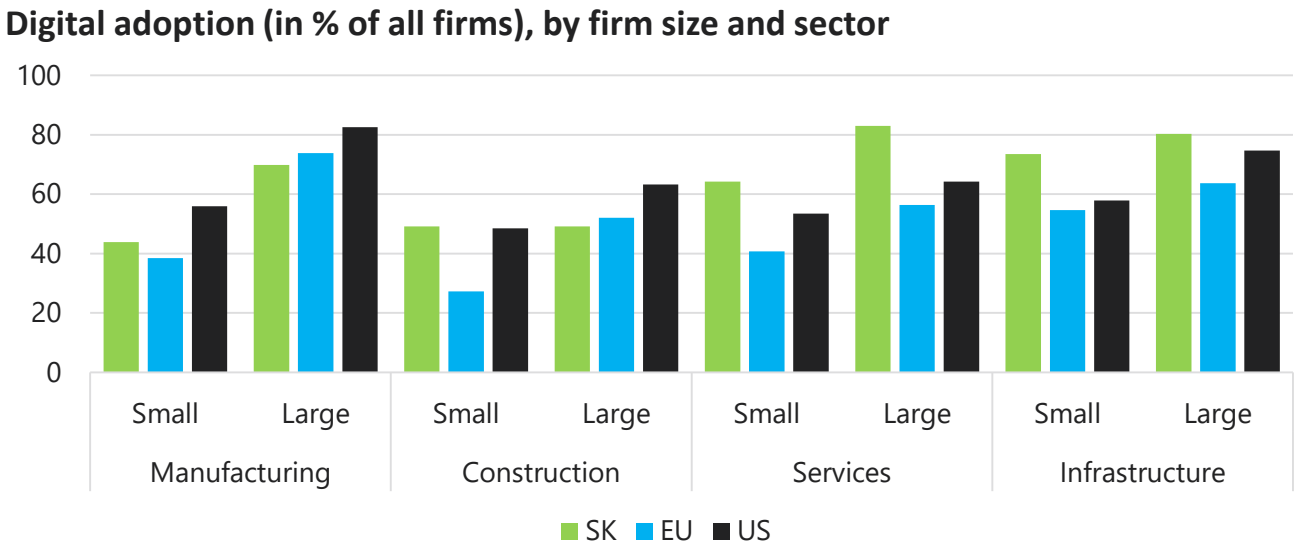


Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

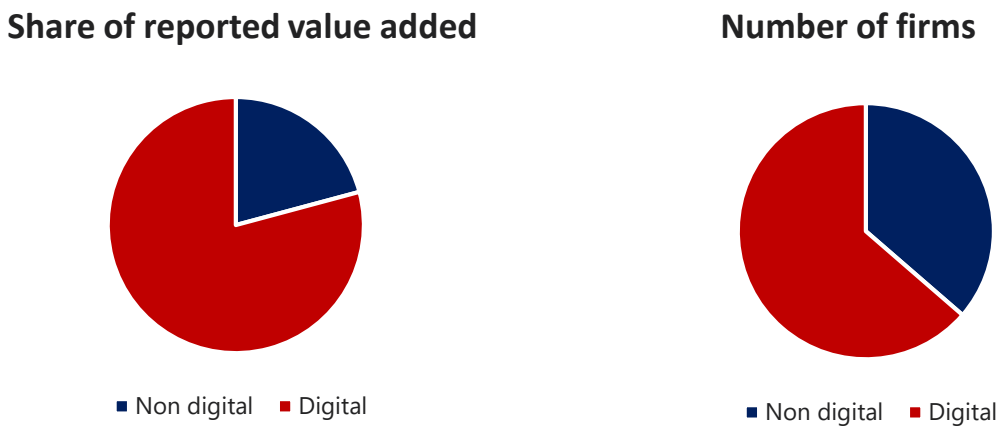
ADOPTION OF DIGITAL TECHNOLOGIES – SLOVAKIA



Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.



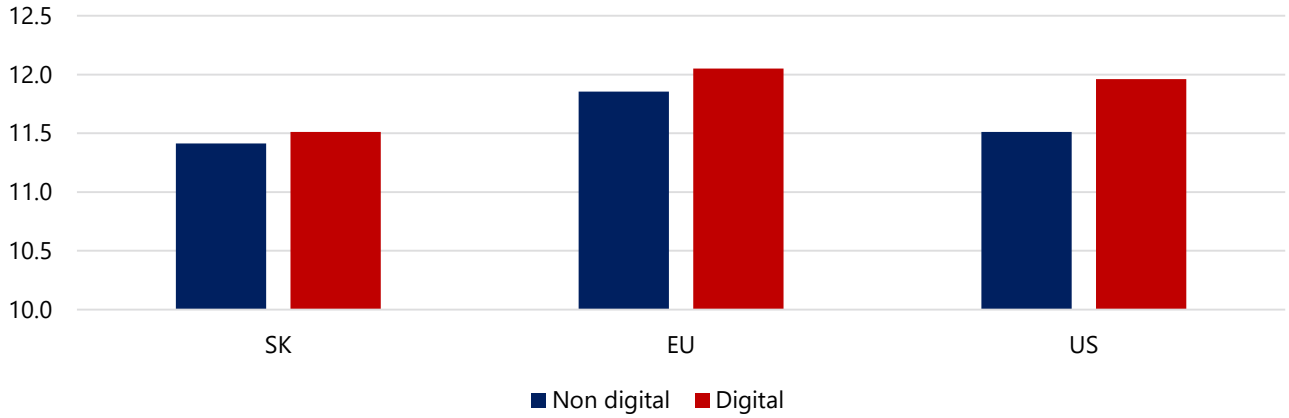
Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

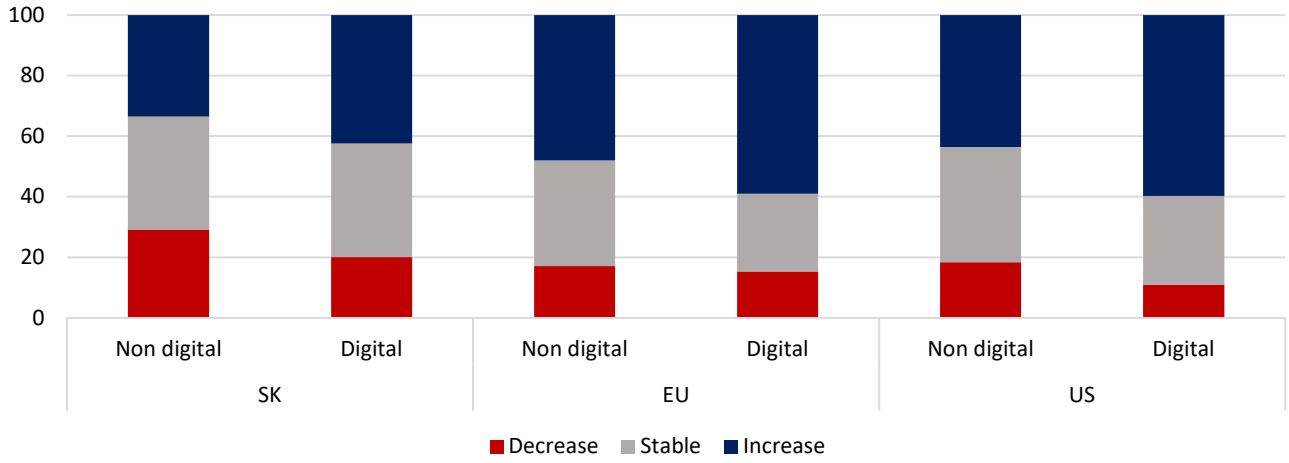
ADOPTION OF DIGITAL TECHNOLOGIES – SLOVAKIA

Median labour productivity (in logarithm)



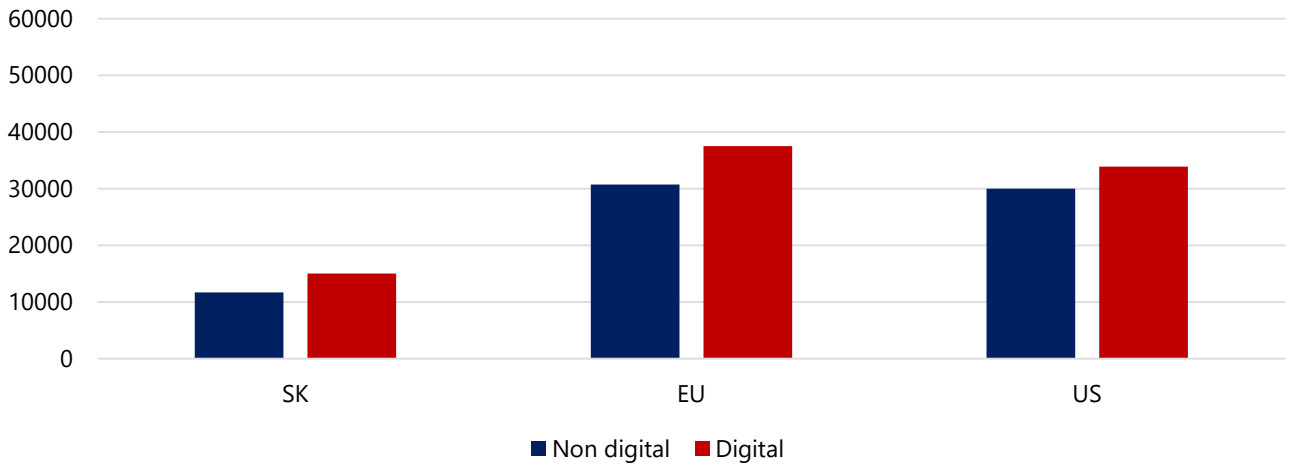
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

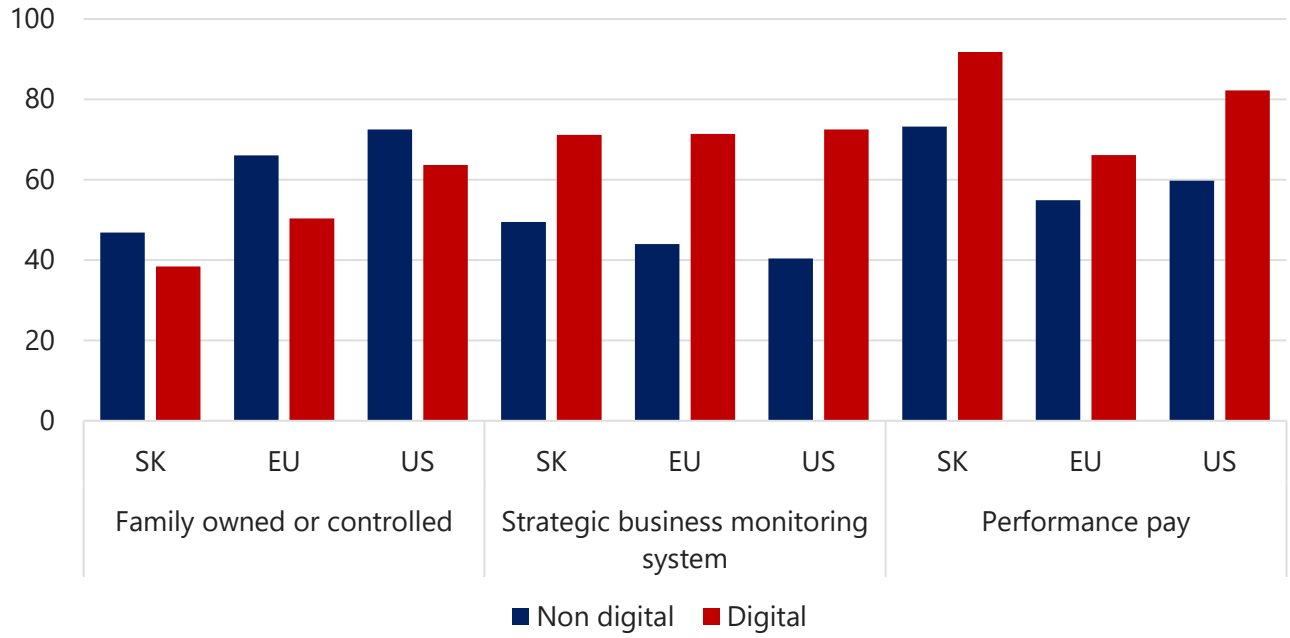
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

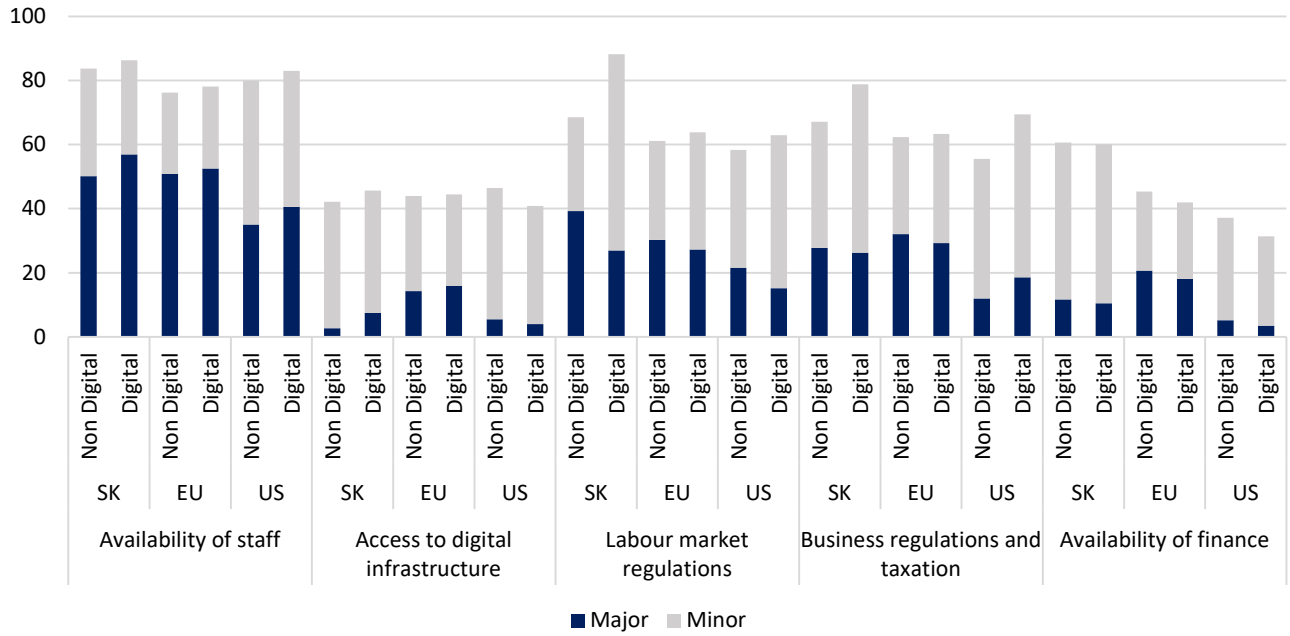
ADOPTION OF DIGITAL TECHNOLOGIES – SLOVAKIA

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

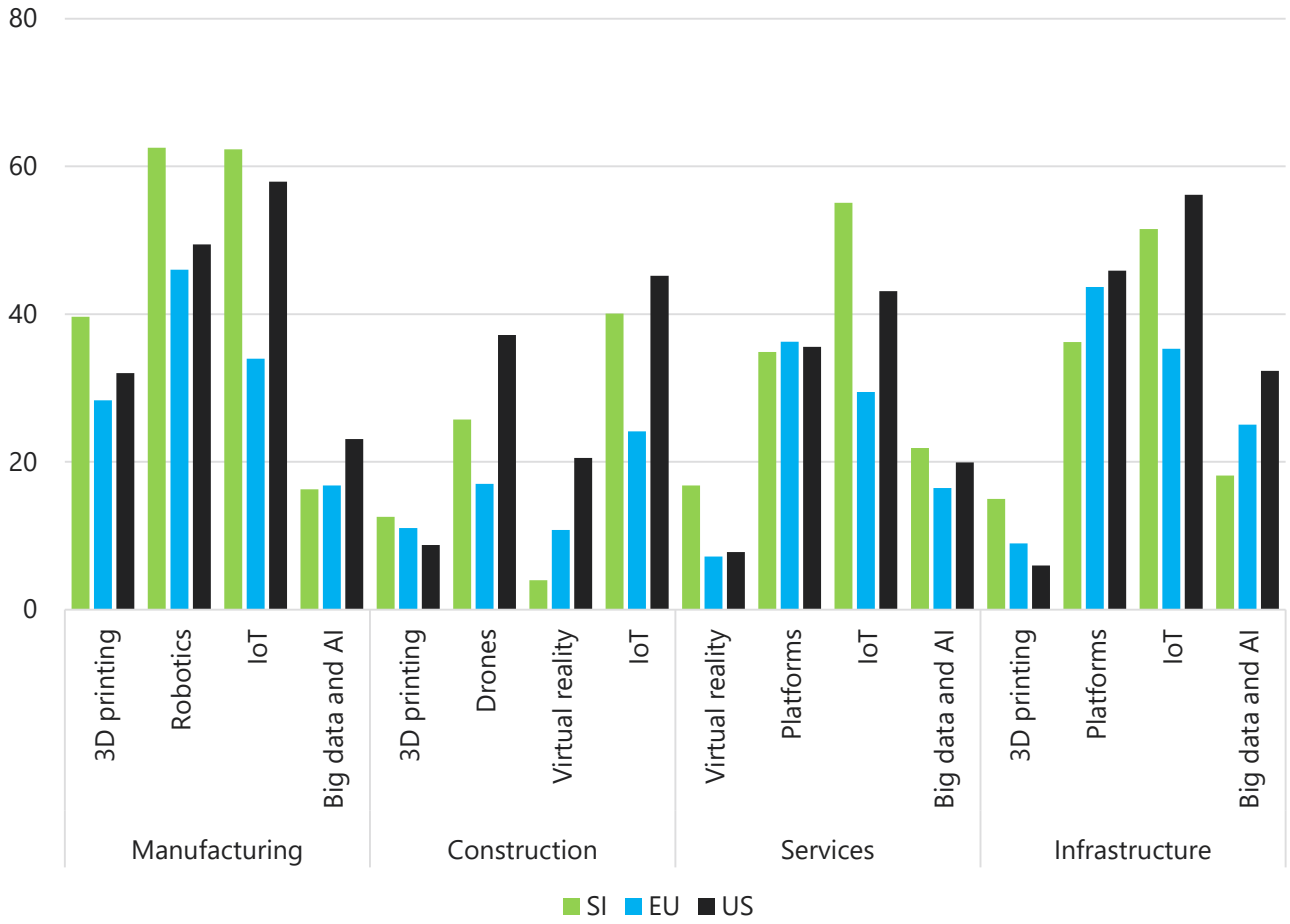


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – SLOVENIA

- Slovenia ranks among the *strong* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above the EU and US average for robotics and 3D printing, and for IoT in the manufacturing and services sectors.
- Digital adoption rates are above the EU average for all sectors, and also above the US average in some sectors.
- Almost 90% of non-digital firms report having increased or kept stable the number of employees in the last three years, compared with 82% of digital firms in Slovenia.
- Median wage per employee is slightly higher for digital than non-digital firms, but below the EU average for both digital and non-digital firms.
- Among the reported obstacles to investment, 'lack of availability of staff' is the most cited, especially by digital firms.

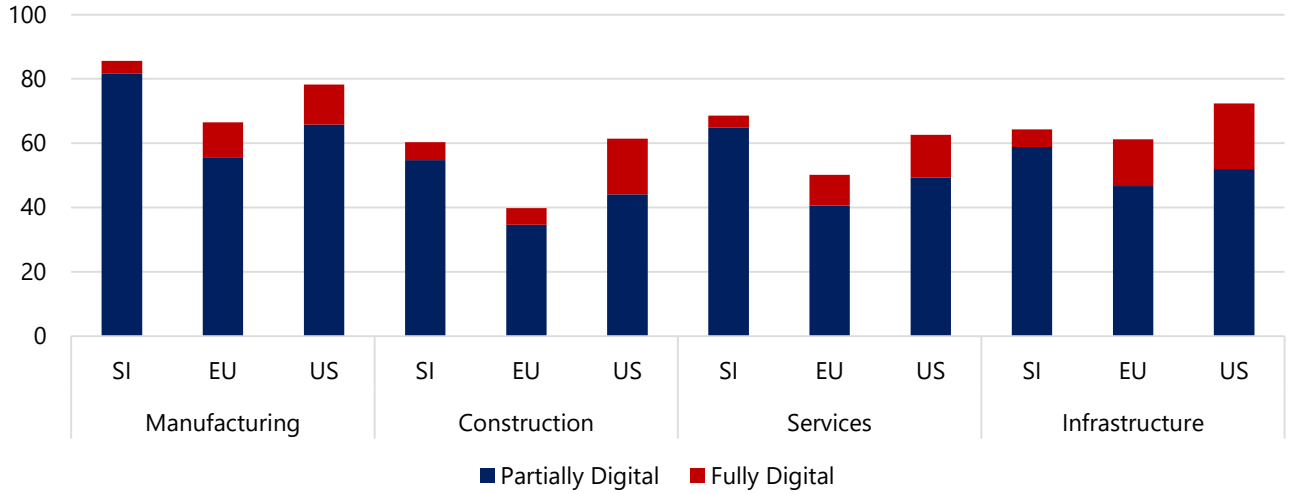
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

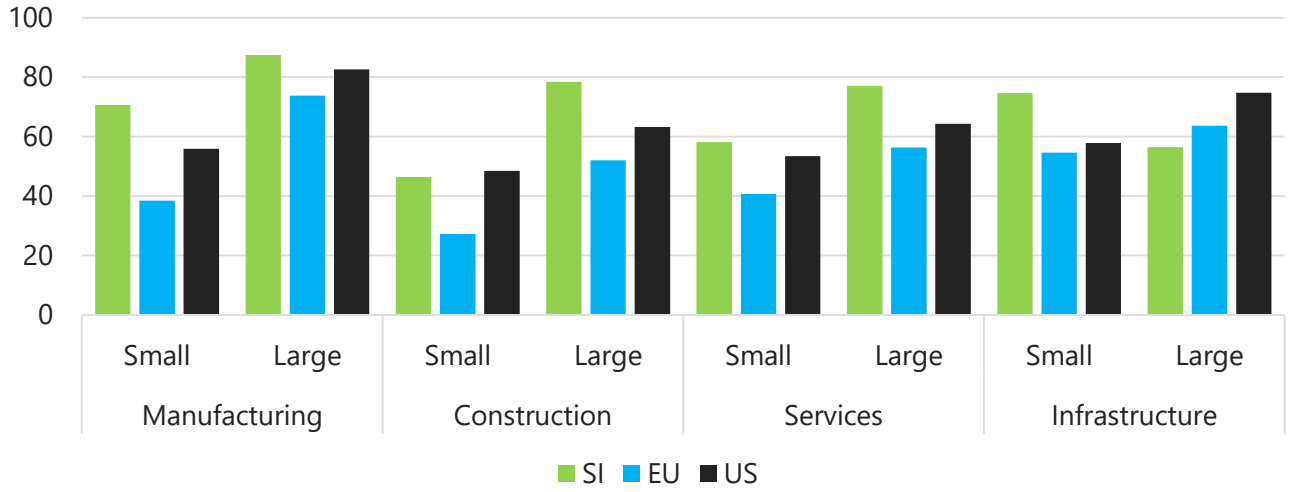
ADOPTION OF DIGITAL TECHNOLOGIES – SLOVENIA

Digital adoption rates (in % of all firms), by sector



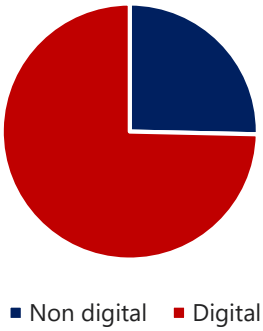
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

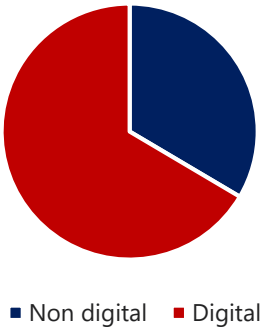


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



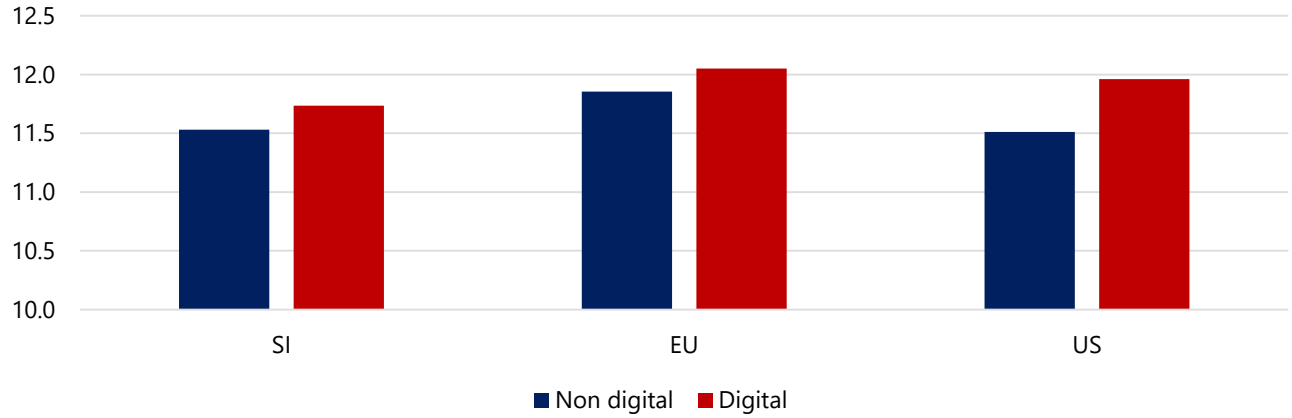
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

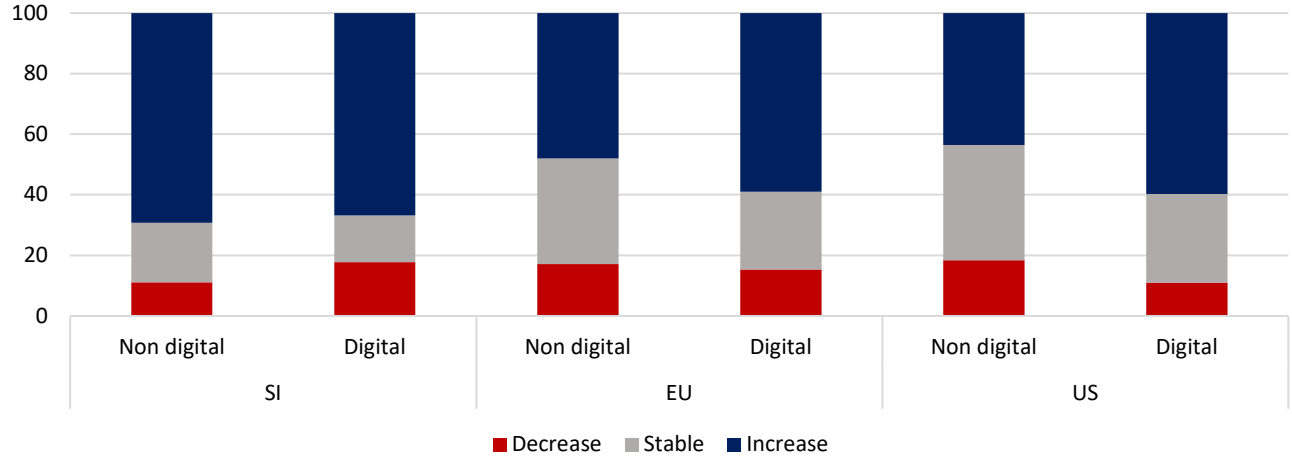
ADOPTION OF DIGITAL TECHNOLOGIES – SLOVENIA

Median labour productivity (in logarithm)



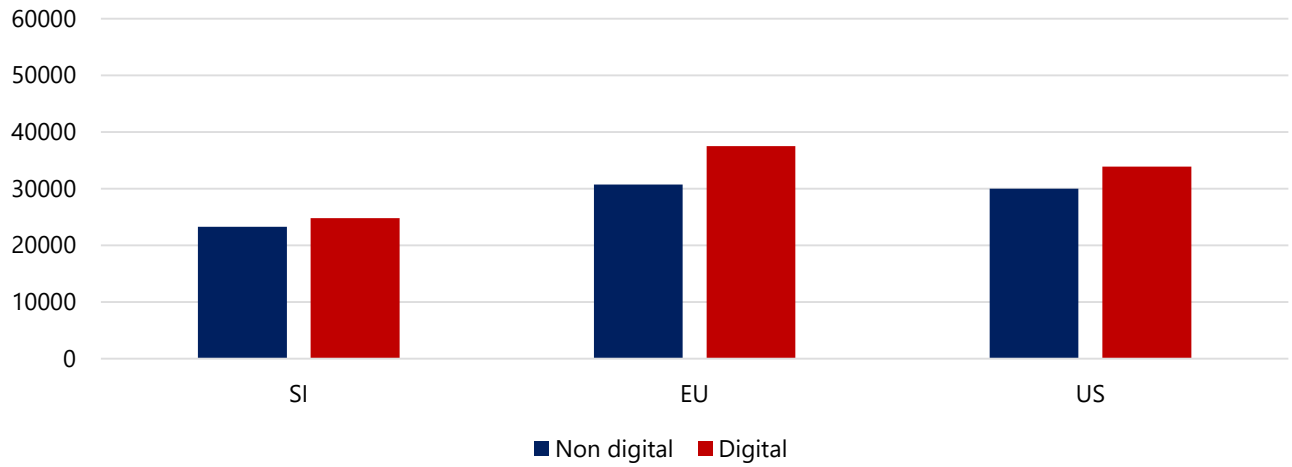
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

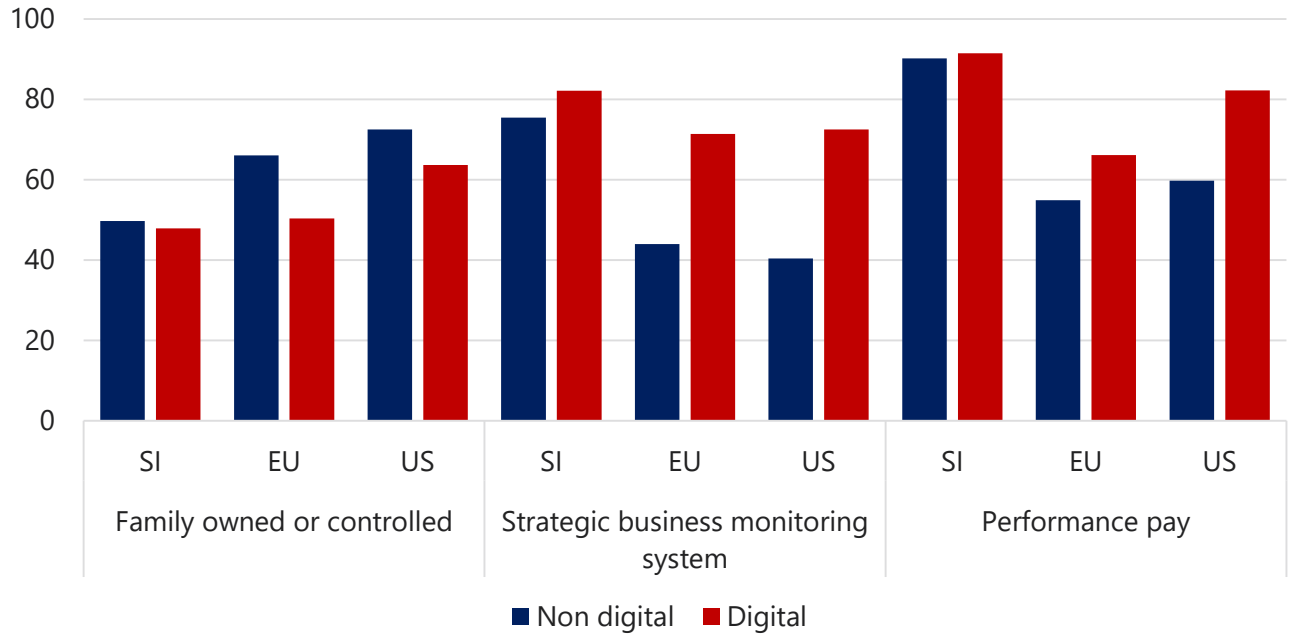
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

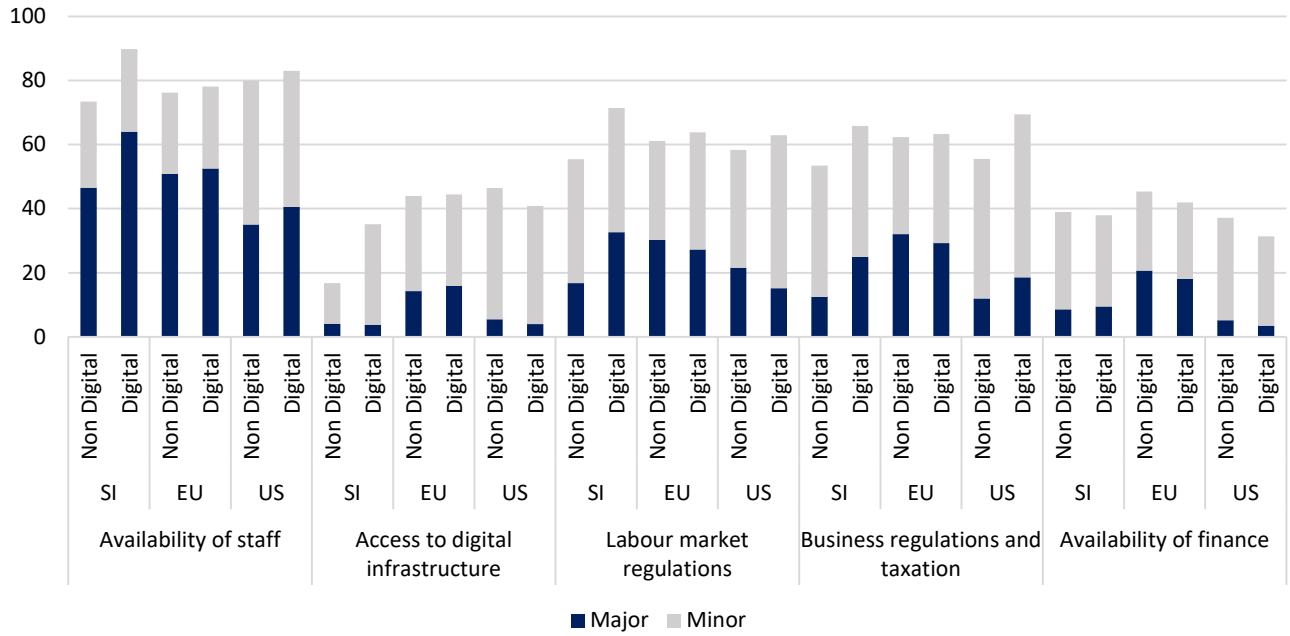
ADOPTION OF DIGITAL TECHNOLOGIES – SLOVENIA

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

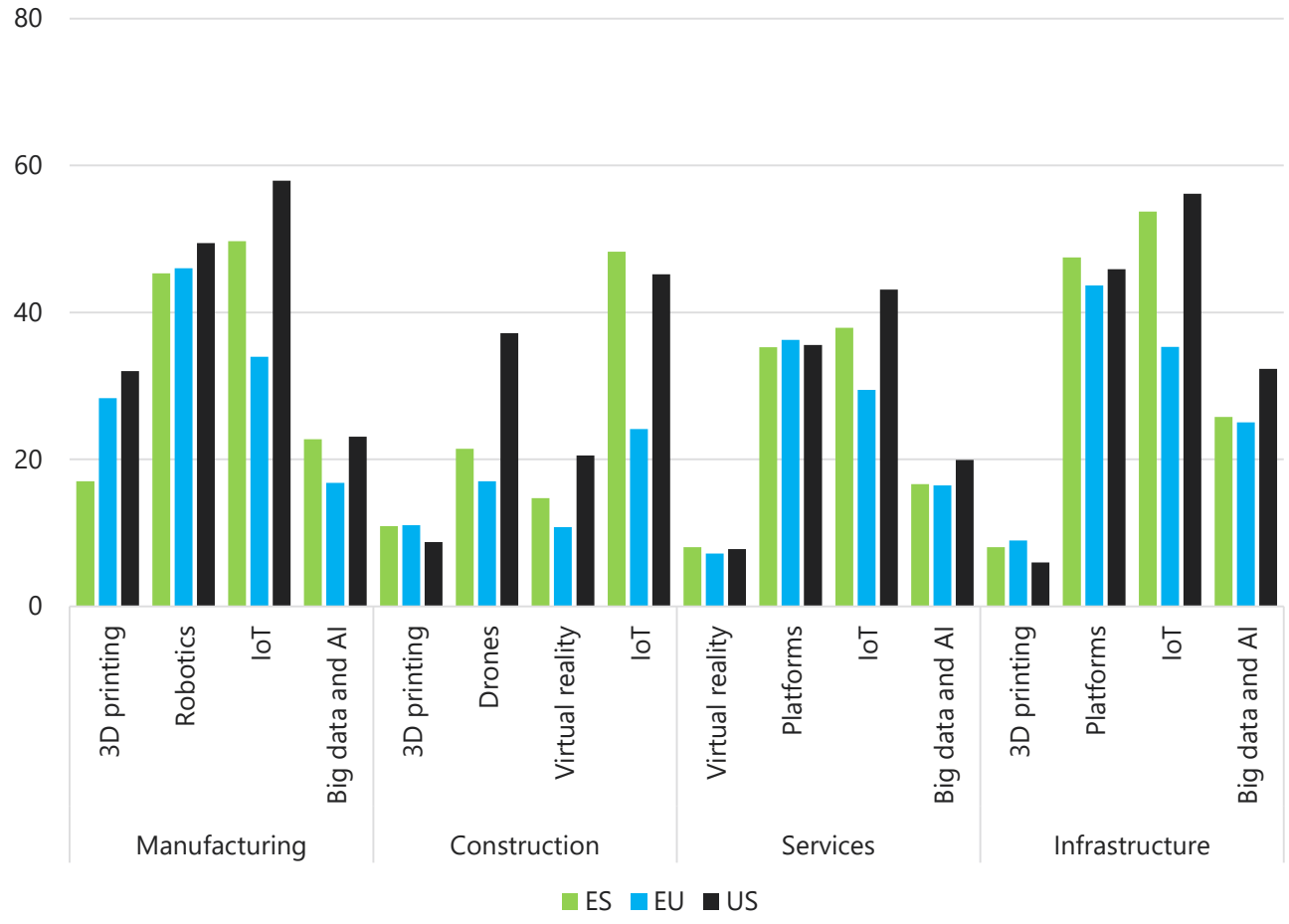


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – SPAIN

- Spain ranks among the *moderate* countries in the EIBIS Digitalisation Index.
- The adoption rate of single technologies is above both the EU and US average for platforms in the infrastructure sector and for IoT in the construction sector. Moreover, adoption rate is above EU average for IoT, big data, drones and virtual reality.
- For all sectors, digital adoption rates in Spain are above the EU average but behind the US average.
- Almost 60% of digital firms report having increased the number of employees in the last three years, compared to 52% of non-digital firms.
- Reflecting differences in productivity, median wage per employee is 1.2 times higher for digital than non-digital firms in Spain.
- Among the reported obstacles to investment, 'business regulations and taxation' is the most cited by both digital and non-digital firms, followed by 'labour market regulations' and 'lack of availability of staff'.

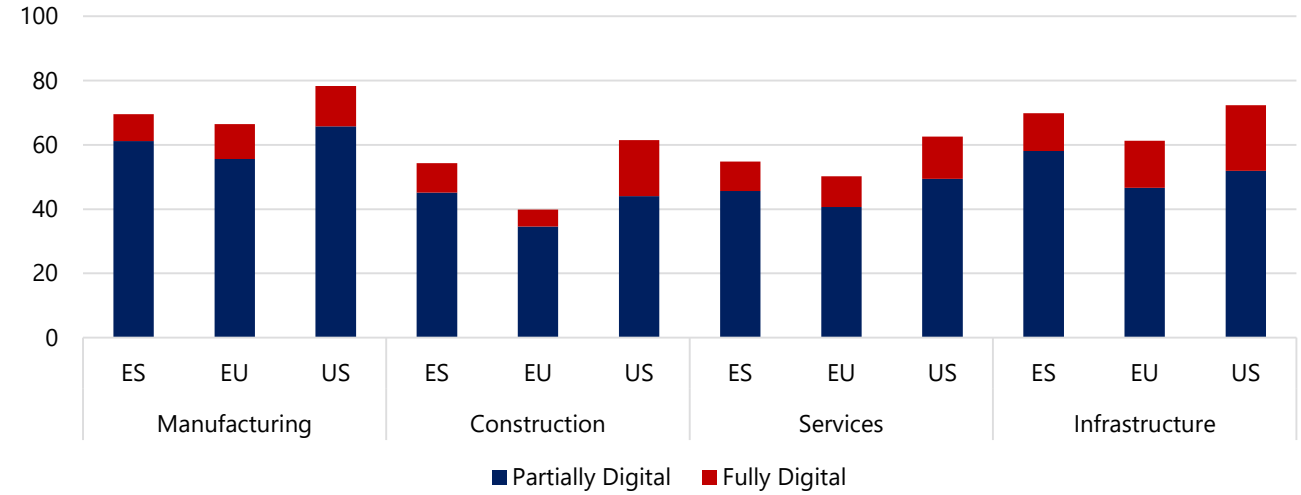
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

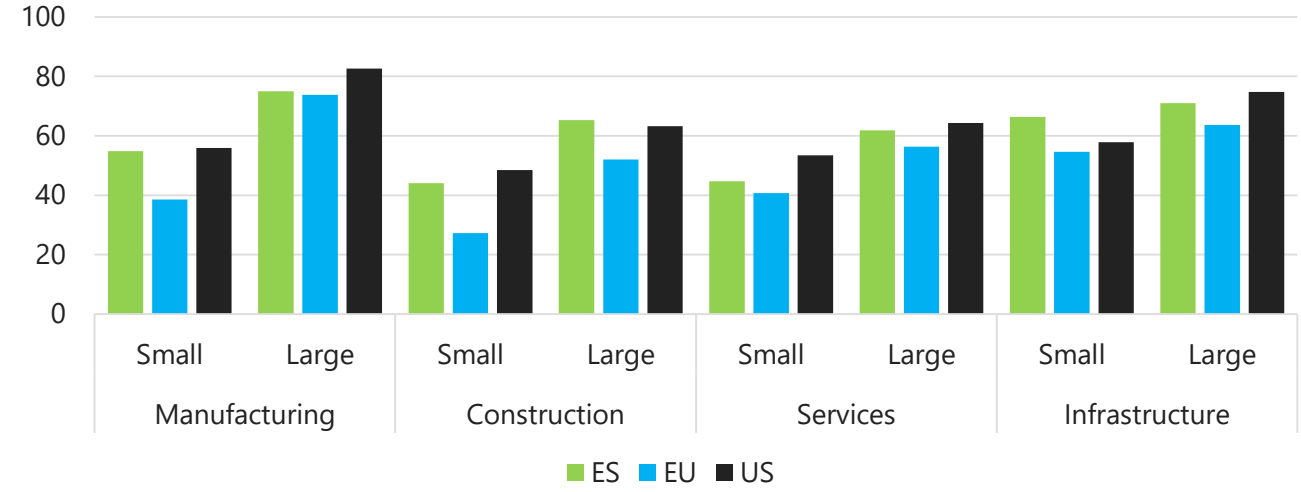
ADOPTION OF DIGITAL TECHNOLOGIES – SPAIN

Digital adoption rates (in % of all firms), by sector



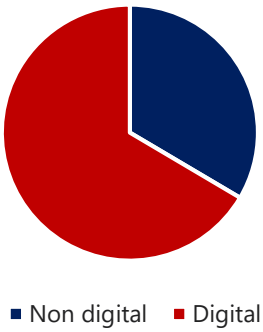
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

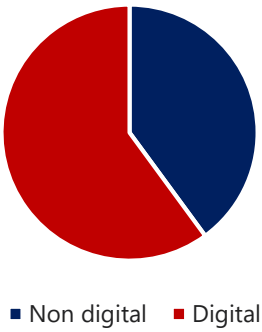


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



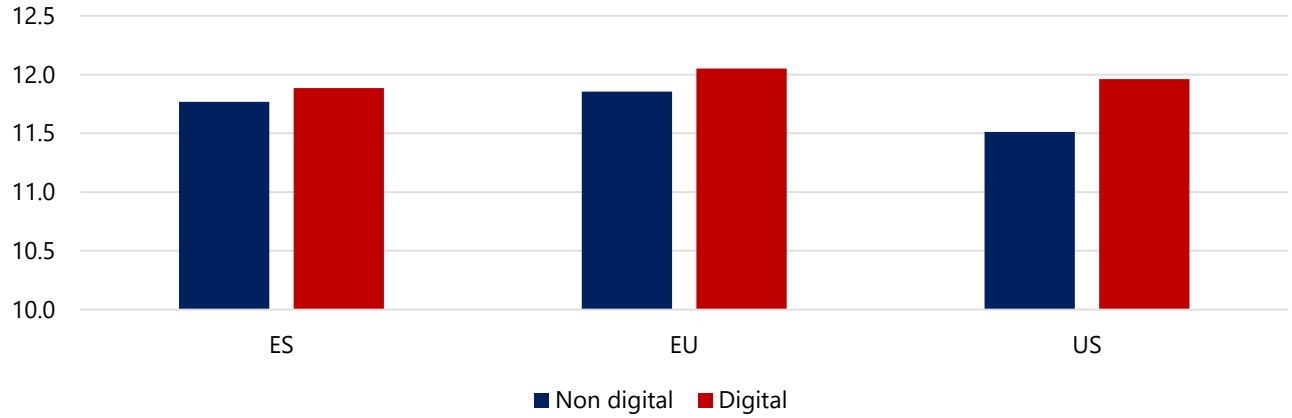
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

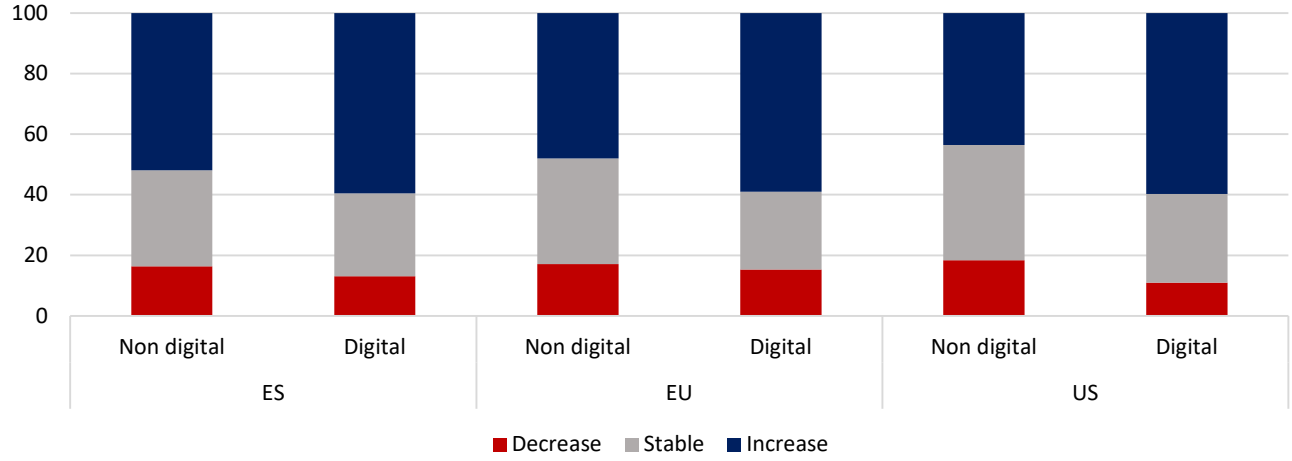
ADOPTION OF DIGITAL TECHNOLOGIES – SPAIN

Median labour productivity (in logarithm)



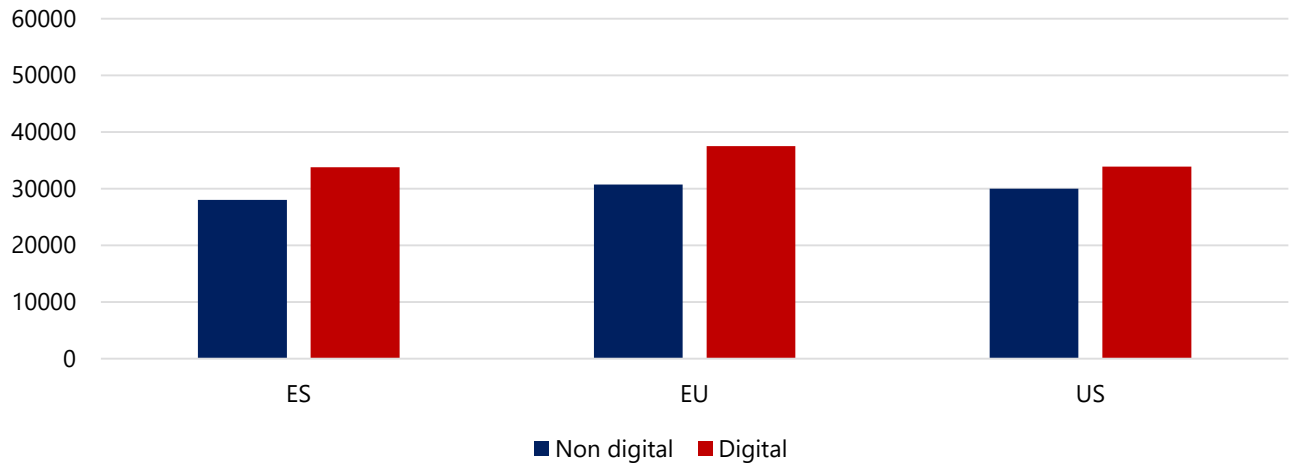
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

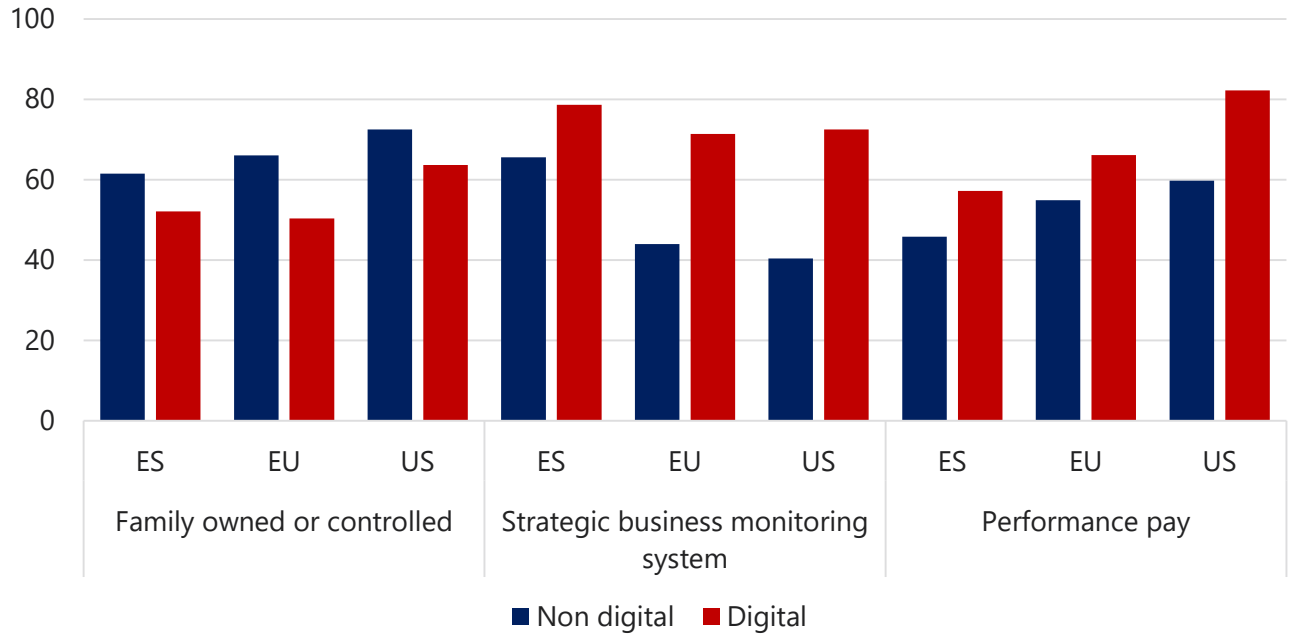
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

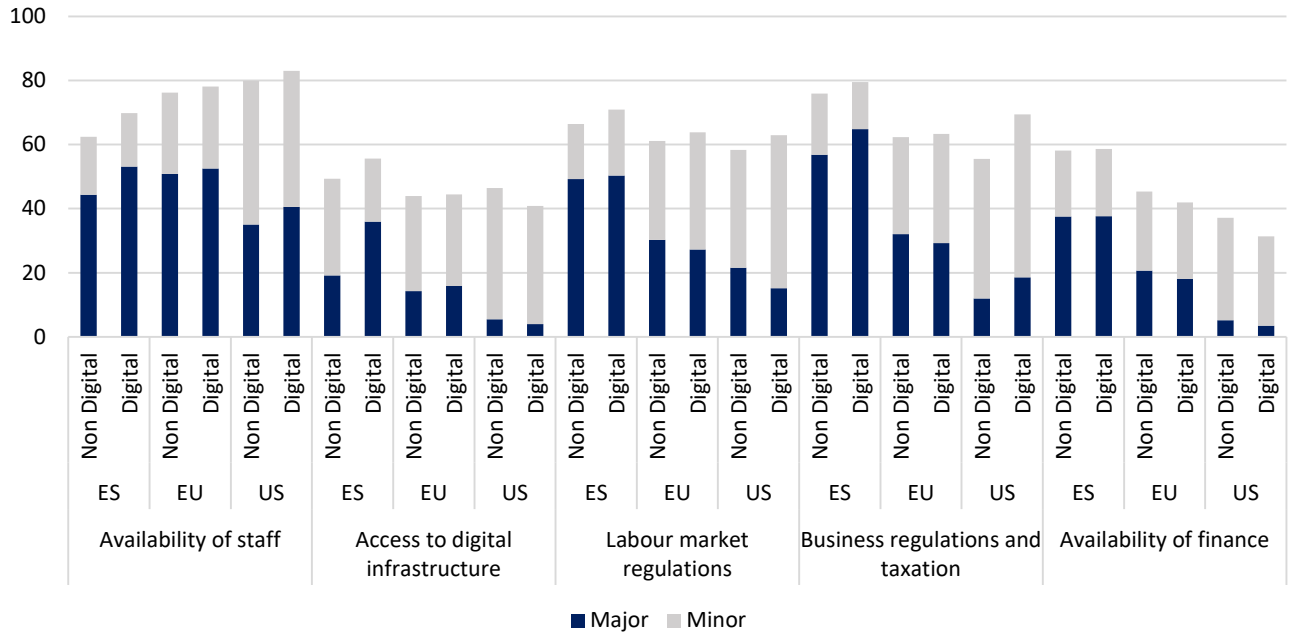
ADOPTION OF DIGITAL TECHNOLOGIES – SPAIN

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

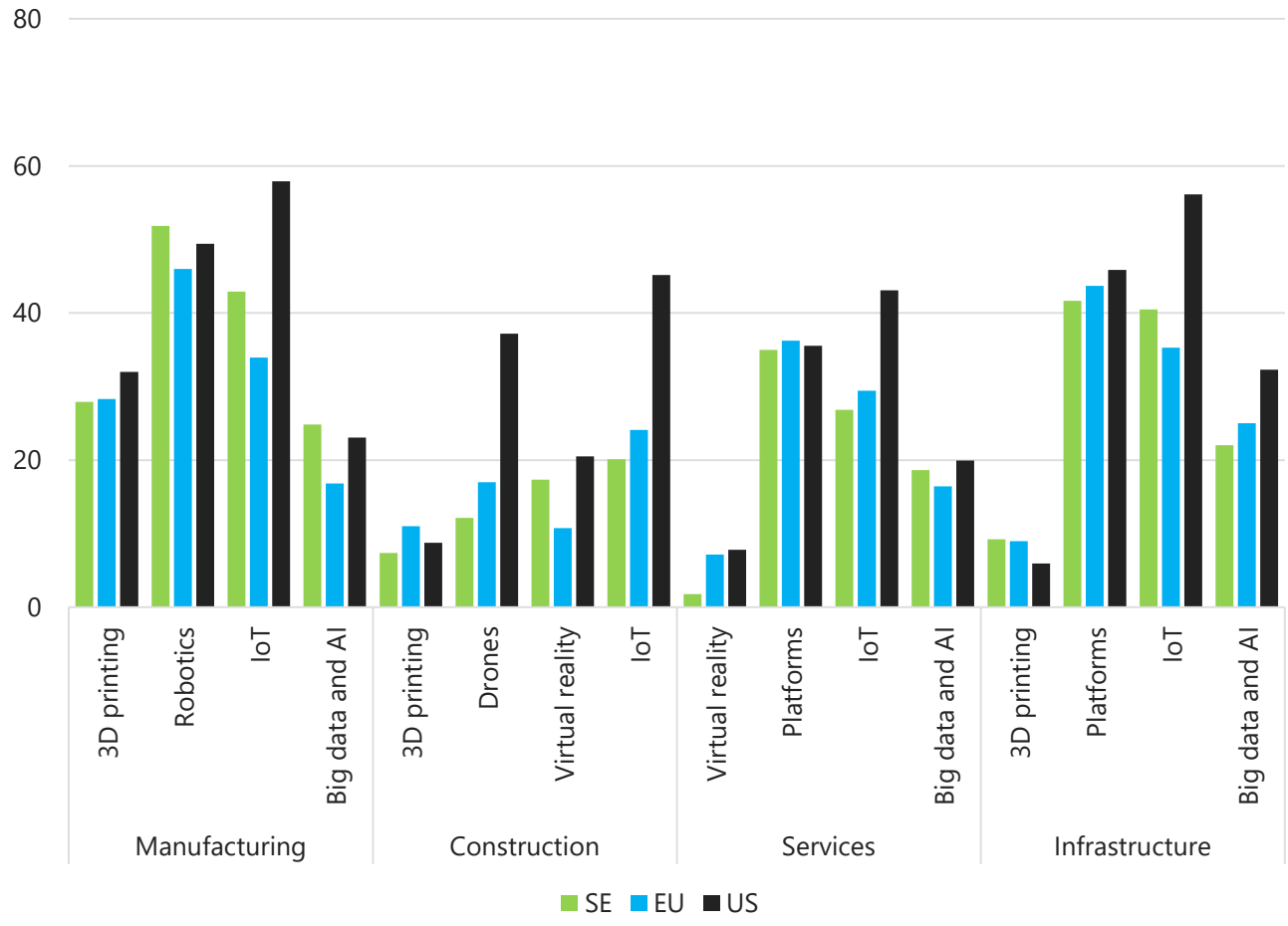


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – SWEDEN

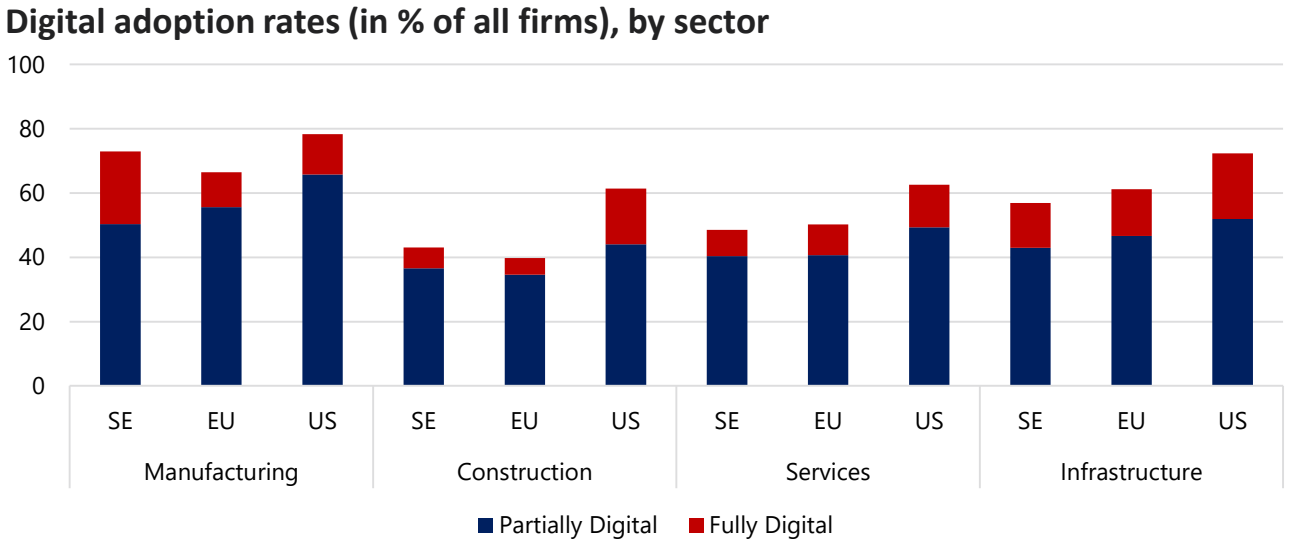
- Sweden ranks among the *strong* countries on the EIBIS Digitalisation Index.
- The adoption rate of single technologies in manufacturing is notably better than the EU average and comparable to that of the US.
- Digital adoption rates in Sweden are above the EU average for the manufacturing and construction sectors but behind the US average for all sectors.
- More than 60% of digital firms report having increased the number of employees in the last three years, compared to about 50% of non-digital firms.
- Median wage per employee and median labour productivity are higher in digital firms than they are in non-digital firms and both the wages and productivity in both types of firms are significantly higher than the EU and the US averages.
- The reported obstacles to investment do not differ significantly between digital and non-digital firms. The most notable obstacle is the lack of availability of skilled staff. However, compared with the EU and US, in general both types of Swedish firm enjoy a more favourable investment environment.

Adoption of different digital technologies (in % of all firms), by sector

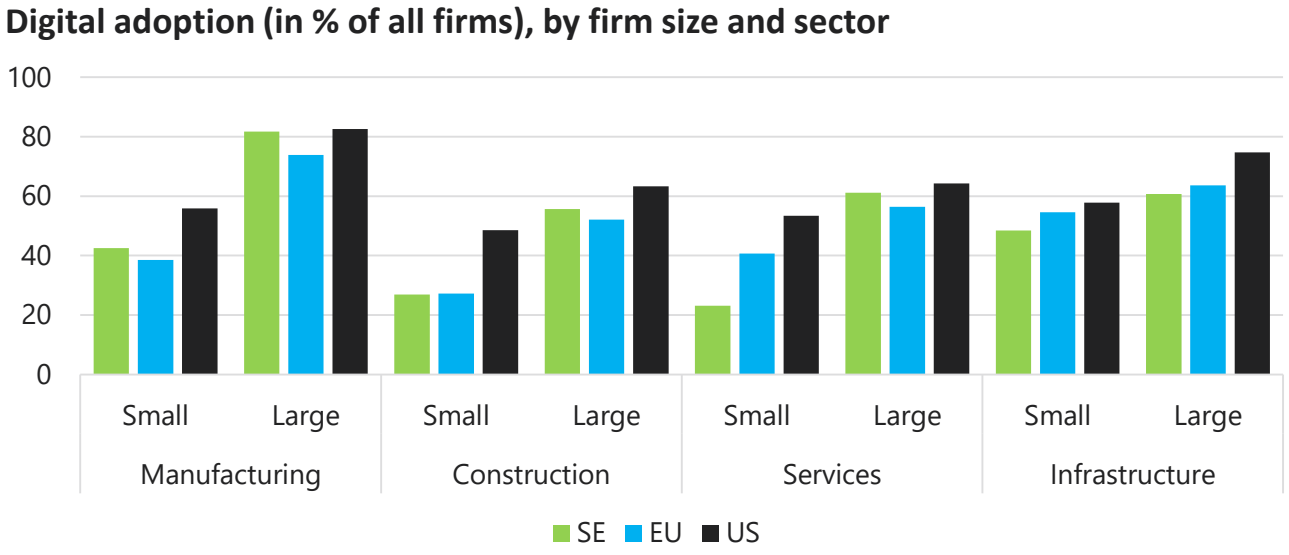


Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

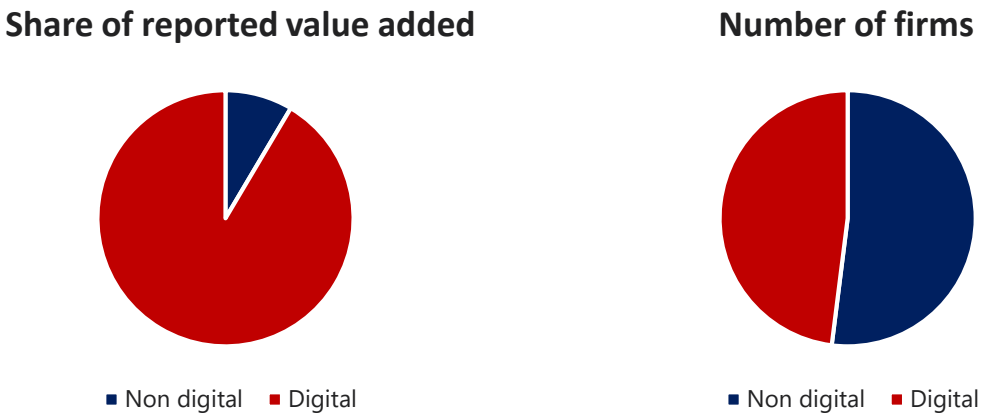
ADOPTION OF DIGITAL TECHNOLOGIES – SWEDEN



Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.



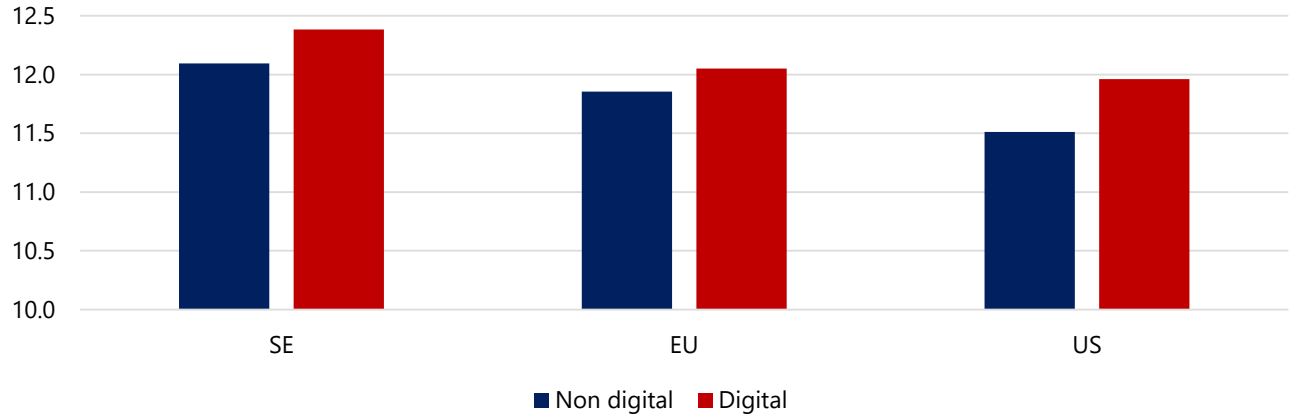
Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

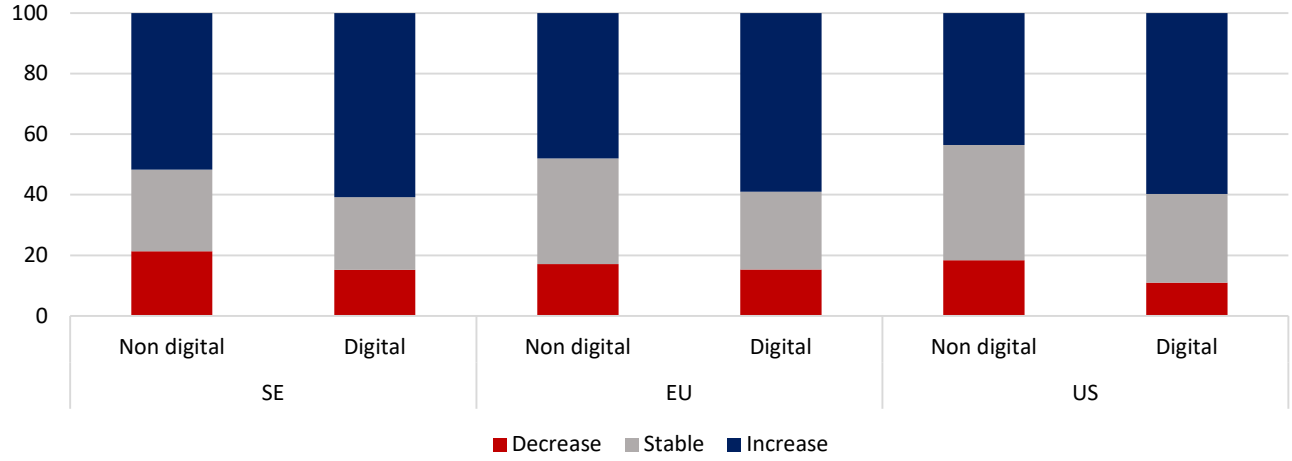
ADOPTION OF DIGITAL TECHNOLOGIES – SWEDEN

Median labour productivity (in logarithm)



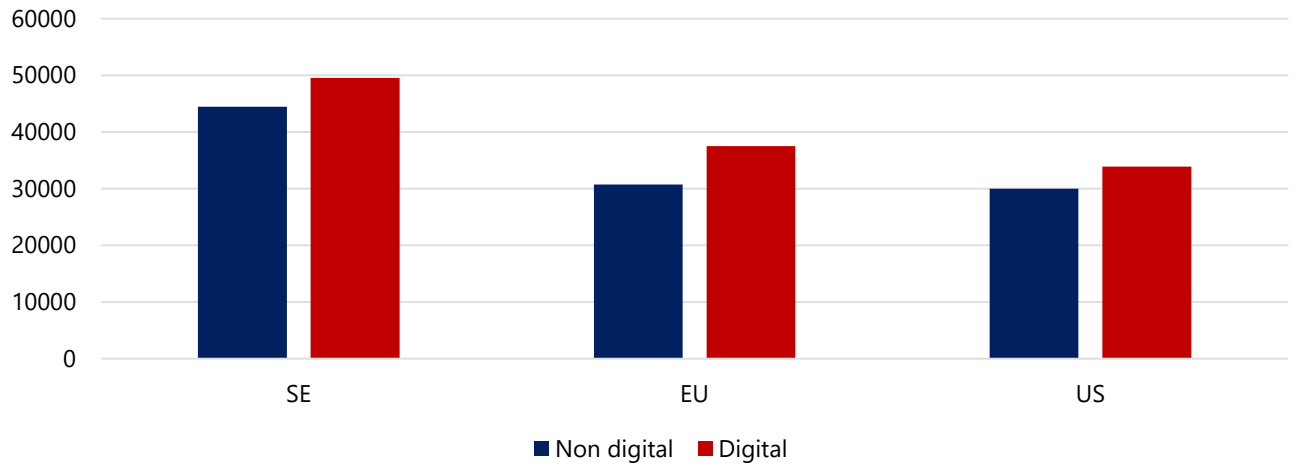
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

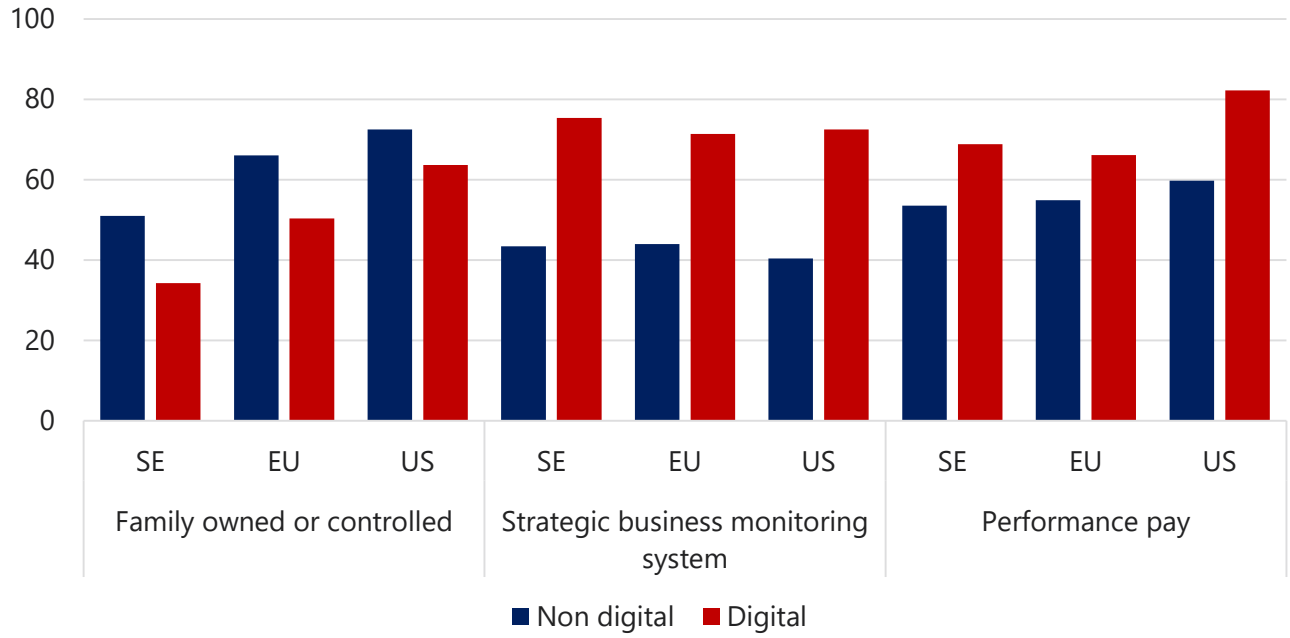
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

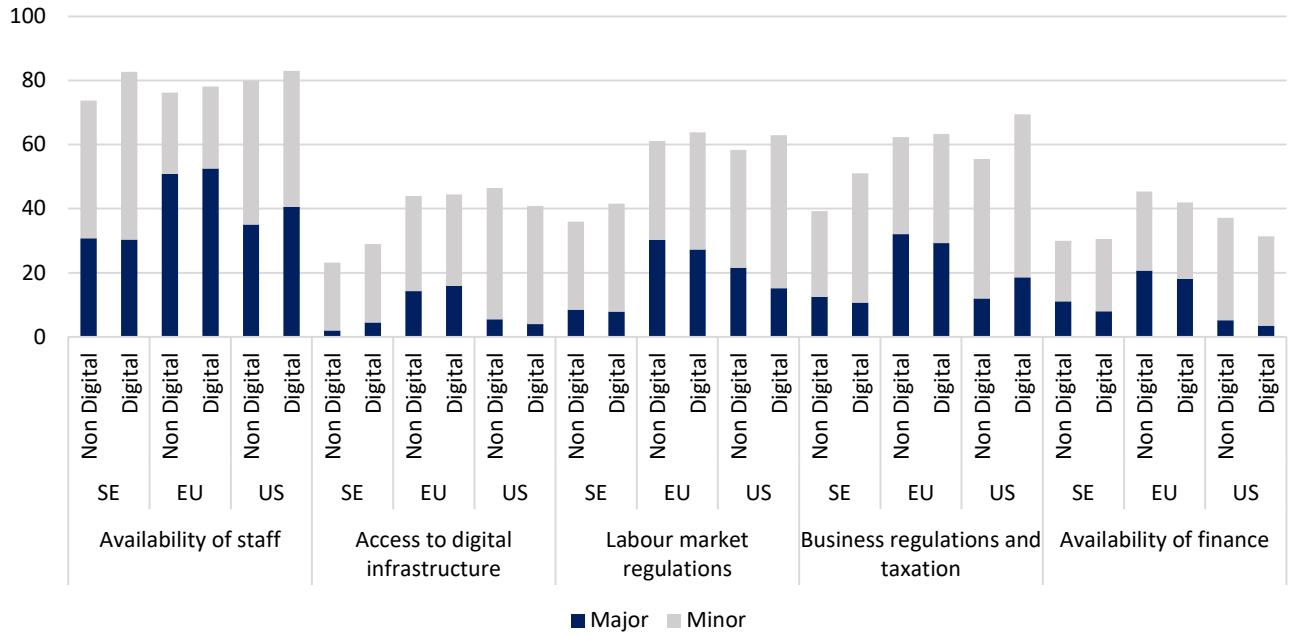
ADOPTION OF DIGITAL TECHNOLOGIES – SWEDEN

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)

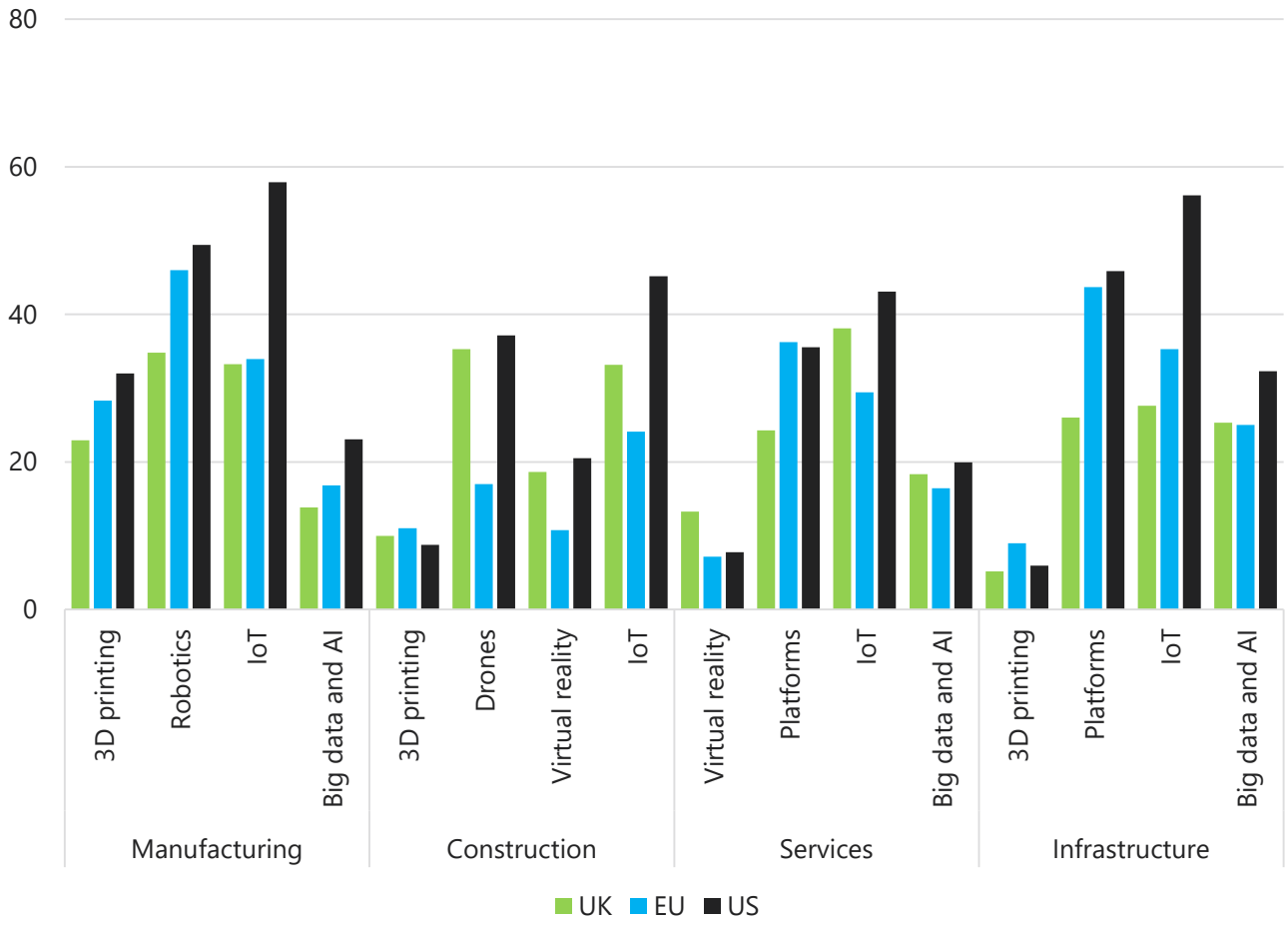


Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

ADOPTION OF DIGITAL TECHNOLOGIES – UNITED KINGDOM

- The UK ranks among the *modest* countries on the EIBIS Digitalisation Index.
- The adoption rate of drones and virtual reality is above the EU average while for the Internet of Things it is higher in the construction and services sectors, but 3D-printing adoption is low across sectors.
- Digital adoption rates in the UK are above the EU average for the construction and services sectors, but lower for the infrastructure sector.
- About 60% of digital firms report having increased the number of employees in the last three years, compared to 43% of non-digital firms.
- The median labour productivity is higher for digital than non-digital firms, but the median wage per employee is similar. This pattern is different from that in the EU and the US.
- Among the reported obstacles to investment, 'lack of availability of staff' is the most cited, especially by digital firms.

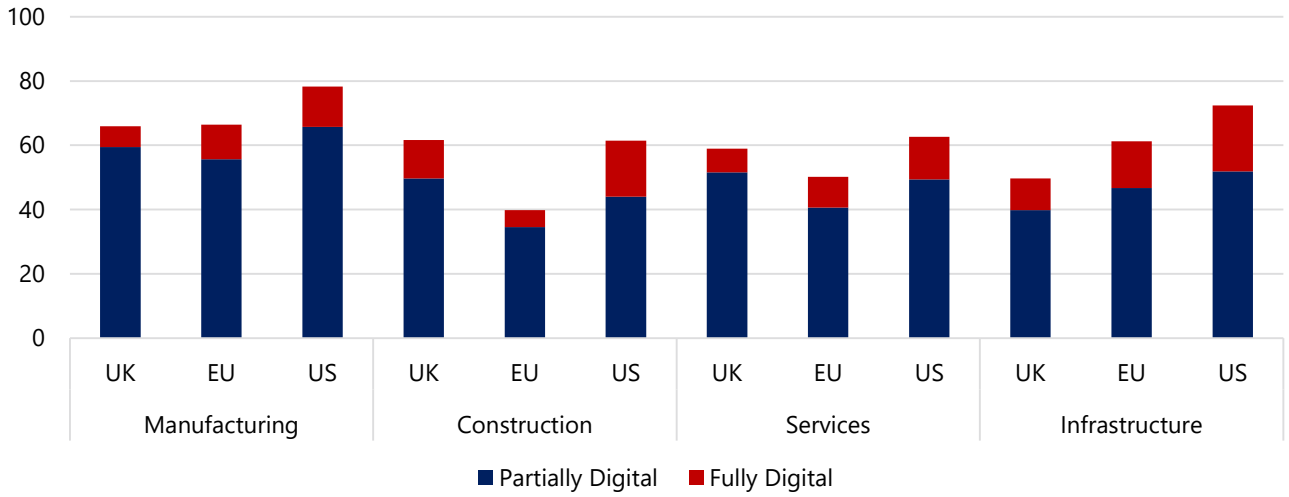
Adoption of different digital technologies (in % of all firms), by sector



Source: EIBIS wave 2019. *Note:* IoT: Internet of Things. AI: Artificial intelligence. Firms are weighted using value added.

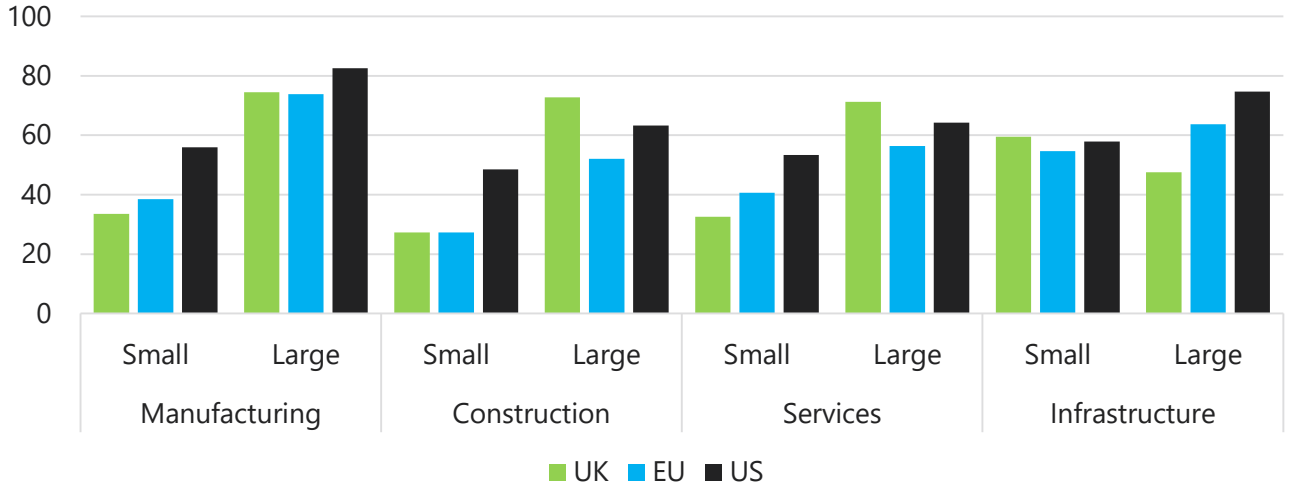
ADOPTION OF DIGITAL TECHNOLOGIES – UNITED KINGDOM

Digital adoption rates (in % of all firms), by sector



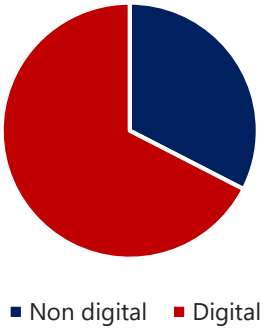
Source: EIBIS wave 2019. *Note:* A firm is identified as partially digital if at least one digital technology was implemented in parts of the business; and fully digital if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Digital adoption (in % of all firms), by firm size and sector

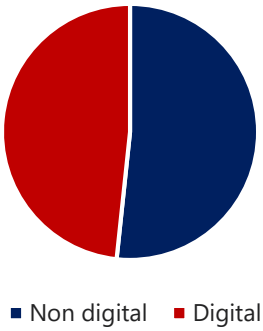


Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Small: less than 50 employees; large: 50+ employees. Firms are weighted using value added.

Share of reported value added



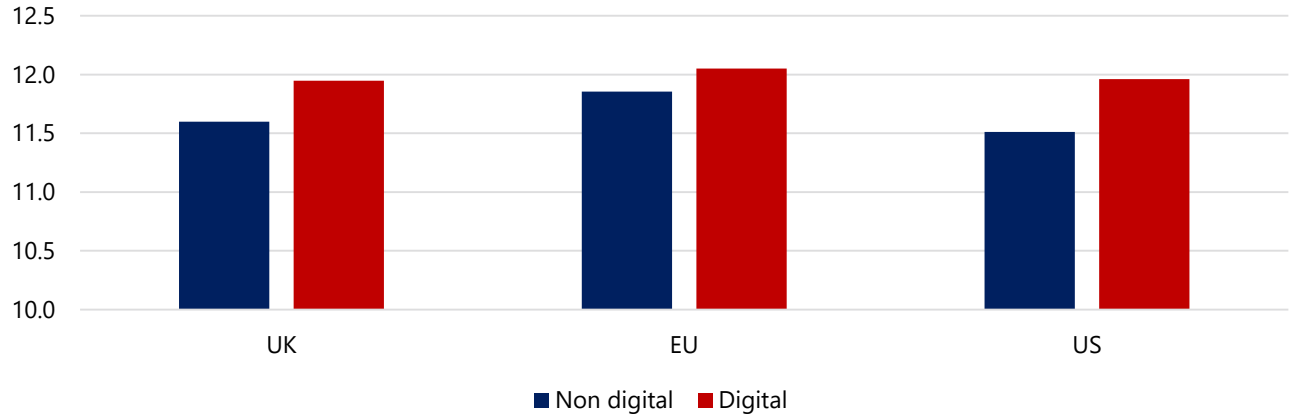
Number of firms



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted using value added.

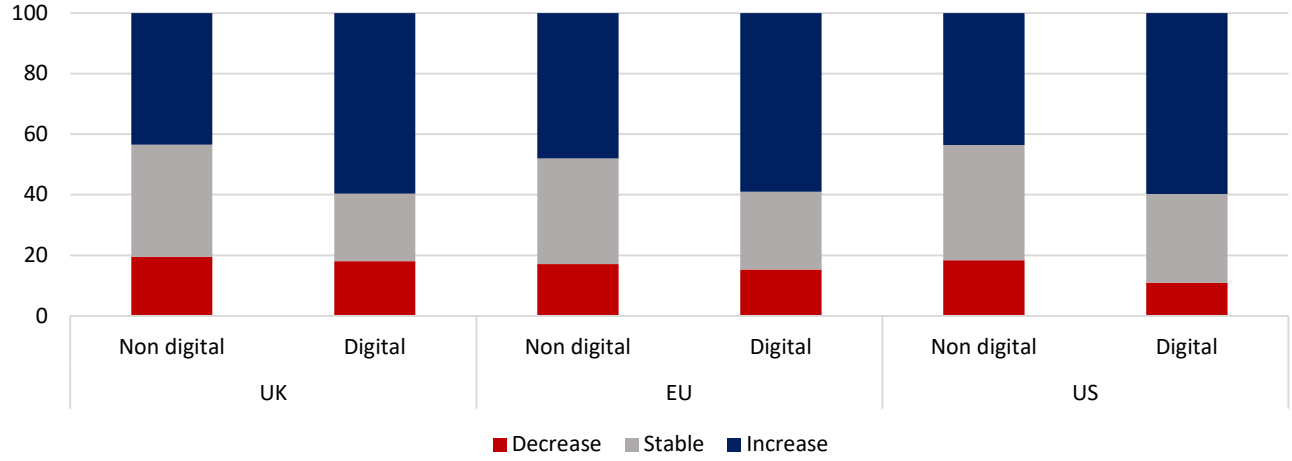
ADOPTION OF DIGITAL TECHNOLOGIES – UNITED KINGDOM

Median labour productivity (in logarithm)



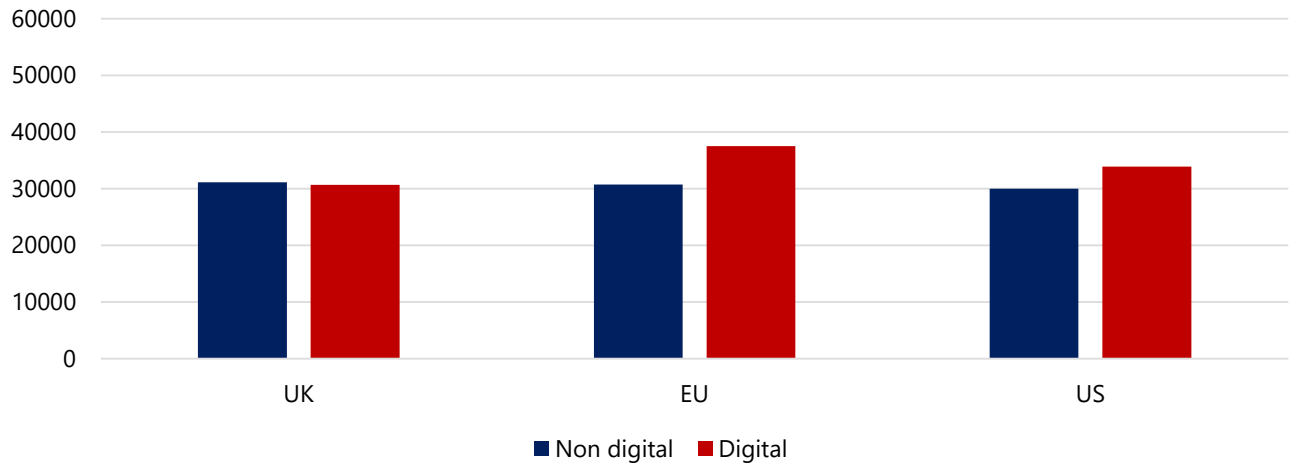
Source: EIBIS wave 2019. *Note:* Labour productivity is defined as turnover divided by the number of employees. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Employment growth over the past three years (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms with negative, stable and positive employment growth over the past three years. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

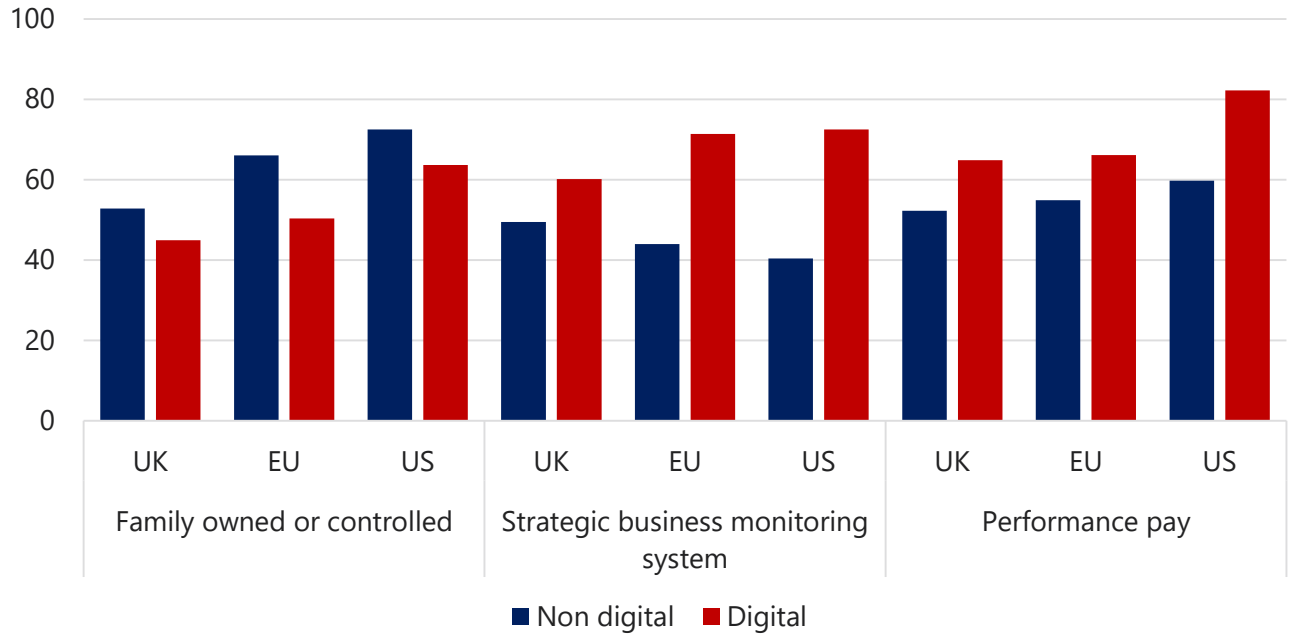
Median wage per employee (in EUR)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Wage per employee is defined as the wage bill divided by the number of employees. Firms are weighted with value added.

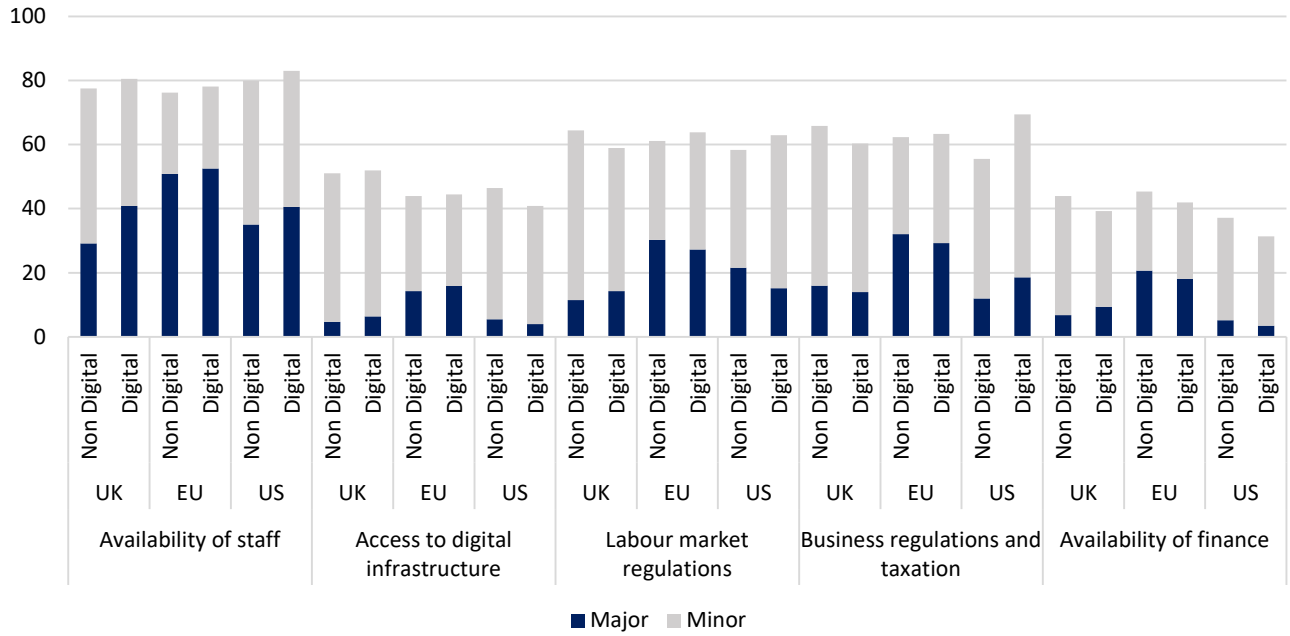
ADOPTION OF DIGITAL TECHNOLOGIES – UNITED KINGDOM

Management practices (in % of all firms)



Source: EIBIS wave 2019. *Note:* A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

Obstacles to investment (in % of all firms)



Source: EIBIS wave 2019. *Note:* Share of firms that report the issue as a major or minor obstacle to investment. A firm is identified as digital if it has implemented (or organised the entire business around) at least one digital technology. Firms are weighted with value added.

APPENDIX: CONSTRUCTION OF THE EIBIS DIGITALISATION INDEX

The EIBIS digitalisation index is based on data collected by the European Investment Bank Investment Survey (EIBIS) in 2019. It consists of five components: digital intensity, digital infrastructure, investment in software and data, investments in organisational and business process improvements, and strategic monitoring system.

- Digital intensity is based on a score assigning value 1 if a firm has implemented in part of its business at least one of four digital technologies specific to the sector, and value 2 if the firm's entire business is organised around at least one of the four technologies. The results are then added up, creating a score ranging from 0 to 8, with 8 assigned to the firms that have organised their business around all four digital technologies.
- Digital infrastructure is based on a survey question that asks whether lack of access to digital infrastructure is an obstacle to investment or not.
- Investments in software and data, as well as in organisation and business process improvements, are measured as a percentage of total investment in the previous fiscal year.
- Strategic monitoring system is based on a survey question asking whether the firm uses a formal strategic business monitoring system or not.

The five components of the EIBIS digitalisation index are aggregated at the country level and given the following weights: 0.4 to digital intensity, 0.3 to digital infrastructure and 0.1 to the other three components.

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