



# The economic and social benefits of digitalisation

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A Cebr report for Virgin Media O2 Business

October 2024

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London, October 2024

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# 1. Executive Summary

This summary follows the structure of our research and full report: we begin by discussing where organisations currently are in terms of their digital adoption, and explore the characteristics and impacts of the most digitally adept organisations. We then analyse the wider economic impact of increased digital adoption. Finally, we highlight the social benefits to be gained from digitalisation.

## 1.1 The Digital State of the Nation

The survey our analysis is based on included **1,000 individuals** from a range of organisations, who have responsibilities for their organisation's IT or Finance departments. In order to measure the current state of an organisation's digital capabilities, we asked two key questions:

- Firstly, we asked how strong each individual considers their **organisation's digital culture**<sup>1</sup> to be.
- Secondly, we asked individuals about how their **organisation's level of utilisation of all digital technologies** changed between 2021 and 2023.

We refer to those respondents who are actively increasing their use of digital technologies as '**digital leaders**', and define organisations who are not actively improving their digital capabilities as '**digital followers**'.




Further, we compare respondents' answers to both questions in order to investigate whether those who believe they have a strong digital culture **overstate** their level of achievement compared to the most digitally advanced organisations.

In addition, we conducted interviews with six technology executives in large UK organisations, who are responsible for driving digital change in their organisation. Select insights from these interviews are presented where relevant alongside the survey analysis.

## 1.2 Key trends and results

- **93%** of digital leaders we surveyed claim to have a strong digital culture, compared to **75%** of digital followers. This difference decreases with organisation size, driven by the perceptions of digital followers: **59%** of small digital followers claim a strong digital culture, compared to **85%** of large digital followers.

<sup>1</sup> By digital culture, we mean the adoption and use of digital tools and technologies to improve financial and operational metrics, enhance customer and employee satisfaction and experience, and contribute to broader societal benefits.

- Larger<sup>2</sup> organisations are consistently **better at utilising the range of digital tools and policies which they employ** compared to small and medium organisations. Ranking their technology utilisation out of 10, large organisations scored **7.6** on average, medium organisations **7.3**, and small organisations **6.6**.
- It is far more likely for the technologies adopted by digital leaders to have a permanent effect on the way their organisation operates. On average, **approximately one third of digital leaders have experienced a permanent change in at least one area of their organisation's operations, versus just one fifth of digital followers**. Examples include increased hybrid working, more digital delivery of services, and greater adoption of collaboration tools.
 
- The areas in which digital leaders excel most relative to digital followers include their use of collaboration tools and platforms. **34.2%** of digital leaders have made permanent improvements in this area compared with only **14.9%** of digital followers. Similarly, almost **half of digital leaders are permanently improving their cloud computing capabilities**, compared to only a quarter of digital followers.
 
- Digital leaders' most-cited motivation for improving their digital capabilities is to meet customer demands for improved service quality and experience. **41.1%** of digital leaders say they are using digital technologies to make improvements in this area, compared to only **25.6%** of digital followers, who are more likely to focus their digital strategy on improving their organisational decision-making processes.
 
- Another aspect of a strong digital culture is the ability of an organisation to evaluate the performance of its digital initiatives. Half of digital leaders and organisations with strong digital cultures tracked **employee satisfaction and engagement** to evaluate their digital strategies, compared to only one third of digital followers and organisations with weak digital cultures. Digital leaders were similarly more likely to track customer satisfaction and engagement.

## Economic impact

Our economic impact analysis revealed that, between 2021 and 2023, digital leaders grew their turnover, headcount, and GVA<sup>3</sup> (contributions to GDP) faster than digital followers, in both the private and public sectors. **Digital leaders, across every economic metric, were better performing than digital followers.** For instance, while digital leaders increased their turnover by an average 12% over this period, followers did so by an average of 5%. Note that

<sup>2</sup> For the purposes of this survey and analysis thereof, large organisations are defined as having 250 or more employees, medium-sized organisations 50-249 employees, and small organisations 11-49 employees. We do not consider sole traders or micro-organisations, of up to 10 employees, in this report.

<sup>3</sup> Gross Value Added (GVA) is the value generated by any unit engaged in the production of goods and services, as defined by the ONS [Gross Value Added \(GVA\) - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk/gross-value-added)

GVA and headcount uplifts are calculated for both public- and private-sector organisations, but turnover is calculated for organisations in the private sector only.

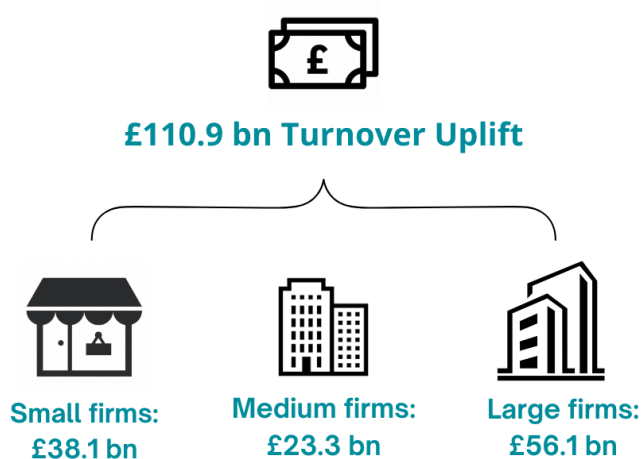
We also calculated what the aggregate impact to these three variables would have been if, over the 2021-2023 period, every respondent had increased their use of digital technologies at the rate of digital leaders.

Fig A: Aggregate economic impact uplift of the hypothetical increase in digital adoption across the economy



**If all firms had increased their use of digital technologies in 2021, aggregate turnover in the economy would have increased by £110.9 billion in 2023.**

Fig B: Aggregate turnover uplift of the hypothetical increase in digital adoption across the economy, by organisation size



Notably, we found clear patterns as to who the primary contributors to these uplift figures would have been.

Had all **large organisations** increased their use of digital technologies since 2021, therefore, they would have contributed, by 2023, **£2,180 billion out of a total estimated £4,259 billion**. They would have also supported **17,558,000 out of a total estimated 31,666,000 jobs**.

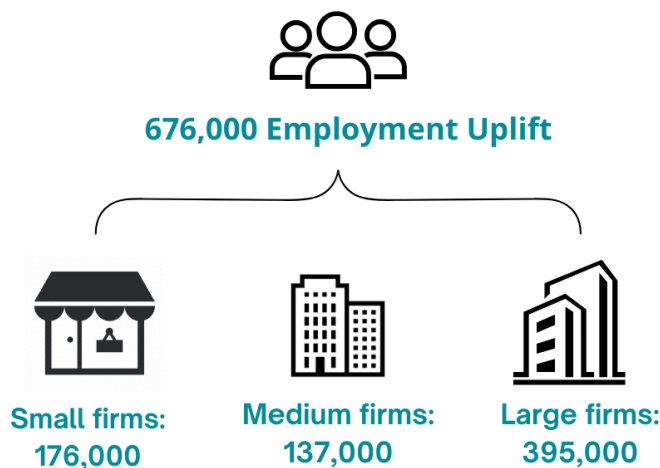
This further suggests that there are **key digitisers** in the economy. Had only large firms increased their use of digital technologies since 2021, their impact on turnover uplift would have still been larger than if only medium and small companies had digitised.

Mid-sized digital leaders would also have played a key role in the digitalisation of the economy. Between 2021 and 2023, and across turnover, employment, and GVA, **mid-sized digital leaders had the largest difference in growth rates in comparison with same-sized digital followers**. For instance, the difference in average GVA growth rates over this period between

medium-sized leaders and followers was 11.6%, whereas it was only 3.8% between small leaders and followers, and 4.7% in the case of large organisations.


**Being a medium-sized digital leader, therefore, is associated with a greater outperformance of similarly sized followers. Both the gains of digital investment and the costs of not increasing digitalisation seem to have been larger between 2021 and 2023 for mid-sized digital leaders than for any other-sized businesses.**

Fig C: Aggregate employment uplift of the hypothetical increase in digital adoption across the economy, by organisation size



At the same time, the costs of not increasing digitalisation seem particularly high for this same set of organisations, as evidence by the large gaps between followers and leaders of this size.

### Social impact

- We observe that digital technologies have had only a **small impact on the parental leave policies** of organisations, despite increasingly hybrid working practices. Digital leaders were no better in this respect than digital followers.
- There is a clear correlation between an organisation's rate of digital technology adoption and their productivity growth. Much evidence links productivity growth with rising wages, with associated benefits both directly for employees, and for the wider economy. Digital technologies, then, can improve standards of living if they aid organisations in materially improving their output. On average, digital leaders in both the public and private sectors experienced **over twice the productivity growth of digital followers** across 2021 to 2023. Notably, public-sector organisations who reported weak digital cultures experienced negative productivity growth, of -1.3%. 
- Organisations reporting strong digital cultures were also more likely to report that their digital initiatives had positive environmental, social or governance (ESG) impacts. Over one third of those claiming strong cultures say that their **digital strategy has improved the transparency and accountability of their operations**, compared to one fifth of those with weak digital cultures.



- **In terms of building an organisational culture and working environment that functions in harmony with greater digital technology usage, digital leaders tend to have greater buy-in from employees.** One third of digital leaders reported that



a result.

- their employees actively sought greater digital capabilities in order to improve their own productivity, compared to only one fifth of digital followers. This shows that digital leaders reap long-term benefits from what they sow in investments into their digital culture, and that employees may enjoy a more open and collaborative environment as a result.
- In the short term, it is crucial for organisations to maintain clear communication with employees about the benefits of digital adoption for themselves and their organisation. In the long-term, upskilling and reskilling is vital to set employees up for success with digital skills.
- Digital leaders tend to place slightly more focus on upskilling and reskilling employees than digital followers; **92.7%** of digital leaders think upskilling and reskilling is an important part of their digital strategy, compared to **85.9%** of digital followers. Both digital leaders and followers preferred regular digital training programs for upskilling their employees to other methods, but digital leaders were **15%** more likely to use them.
- There is a strong positive correlation between employees' digital preparedness for the future and the strength of their organisation's digital culture. **81.3%** of organisations who report having a strong digital culture also report having a digitally well-prepared workforce, compared to just **43.3%** of organisations reporting a weak digital culture.

However, skill improvement is not the only element of fostering a digital culture within the workforce. Nearly **half of digital leaders say they actively foster an inclusive and adaptive company culture**, and promote collaboration and knowledge sharing in their organisation, compared to less than one third of digital followers.

## 2. Introduction

The Centre for Economics and Business Research, Cebr, is pleased to present the following report, covering the economic and social impact of the increased use of digital technologies across the UK. In the wake of the Covid-19 outbreak, organisations face a changed landscape. While many firms embrace digitalisation – adopting hybrid working schemes, offering an extensive range of digital services, or utilising big data in their decision-making – others have not increased their use of digital technologies, with some even reducing their use.

By focusing on the 2021-2023 period, this report aims to shed light on the potential benefits, to individual organisations, the wider economy and society, of increased digitalisation in the post-pandemic world.

Our quantitative and qualitative analysis and methods have concentrated around three main aims:

- 1. Assessing the Digital State of the Nation:** in this section we present descriptive statistics covering key trends around the level and rate of growth of digitalisation in the UK. To do this we surveyed 1,000 individuals in senior management positions with responsibilities for IT and/or finance across a wide range of organisations, with a particular focus on respondents' digital culture. We asked organisations to think about both the variety of digital technologies that they use as well as the frequency and intensity with which they are used. We refer to those respondents who are actively increasing their use of digital technologies as **'digital leaders'**, and define organisations who are not actively improving their digital capabilities as **'digital followers'**. There is extensive consideration of current levels of digital adoption and investment among digital leaders and followers, and of the obstacles organisations face on their path towards digitalisation. We dig deeper into what having a 'strong digital culture' means and into the discrepancy between self-reported strength of digital culture and actual actions taken to improve digitalisation among digital leaders.
- 2. Estimating the current and potential economic impact of increased digital technology use:** in this section we assess the economic impact of increased digital technology use. Our analysis centres around three variables: turnover, employment, and GVA (contribution to GDP). We present performance comparisons for digital leaders and digital followers across all three metrics. We also assess the potential impact to the economy if in 2021, all firms had increased their use of digital technologies at the same rate as the organisations we identify to be digital leaders
- 3. Consideration of the wider social benefits of increased digital adoption:** in this section we analyse the social benefits of organisations developing stronger digital cultures and increasing their utilisation of digital technologies. To do this we included a range of questions in our survey about organisations' perceived social impacts We also asked respondents about organisational characteristics we associate with having a positive social impact, like their level of employee satisfaction.

We present each section in the above order, after briefly discussing the methodology used to obtain the findings presented in each. In the Methodology section, additionally, is included a more detailed description of the survey and interviews used as our primary data sources.

The survey was conducted in partnership with Opinium Research. It was designed to collect data on the performance and digital technology use of firms of different sizes, in different sectors of the economy. In the Appendix to this report, we include a breakdown of the sample surveyed.

## 3. Methodology

The methodology underpinning this report covers three main topics:

- 1) An assessment of where organisations are in terms of digital technology adoption and the state of their ‘digital cultures’;
- 2) Quantification of the current and potential impact of digital technology adoption;
- 3) Consideration of the wider social benefits of continued digital technology adoption and the characteristics of the most socially impactful organisations.

Our analysis was informed by two key sources of primary data: a survey of 1,000 individuals in senior management positions with responsibilities for IT and/or finance; and a series of interviews with Chief Technology/Innovation Officers of six UK organisations across the public and private sectors. In addition, select UK macroeconomic data were used in our economic analysis.

The quantitative data collected through the survey was used as an input into a model designed to discern both organisation-level and economy-wide impacts, of the current and potential level of technology adoption within the UK. The qualitative data collected through the interviews served to provide deeper insight into particular points of interest in the survey data, corroborate and explain survey trends, and helped inform the narrative of digital culture development. Selected key insights and quotations from the interviews are interspersed throughout the report.

The three principal components of our analysis are detailed below.

### 3.1 Digital State of the Nation

The survey, conducted in partnership with Opinium Research, sampled 1,000 employees working within a range of organisations of 11 or more employees, who have the responsibilities for their organisation’s IT or Finance departments. These organisations had an approximately 80% private and 20% public sector split.

We asked about their level of digital adoption, aspects of their digital strategies, and the social impacts of their digital initiatives. We use two distinct measures of the current state of an organisation’s digital capabilities.

Firstly, we asked how strong each individual considers their organisation’s digital culture to be. Respondents chose one from the following: “very strong”, “somewhat strong”, “somewhat weak”, “very weak”, “unsure/do not know”. For most points of analysis, we grouped organisations with very strong and somewhat strong digital cultures, and separately grouped organisations with very weak and somewhat weak digital cultures.

Secondly, we asked individuals about how their organisation’s level of *utilisation* of all digital technologies changed between 2021 and 2023, irrespective of their digital culture. We asked organisations to think about both the variety of digital technologies that they use as well as the frequency and intensity with which they are used. We refer to those respondents who are actively increasing their use of digital technologies as ‘**digital leaders**’, and define

organisations who are not actively improving their digital capabilities as **‘digital followers’**. It is important to note that digital leaders and followers are not separate groups of respondents to those reporting that they have strong or weak digital cultures. Organisations reporting strong digital cultures may be digital leaders, or they may be digital followers who consider themselves to have a strong culture despite not increasing their level of digital utilisation. Similarly, digital leaders may not recognise the strength of their digital culture despite their superior technology utilisation. It is along these lines that much of our analysis within this report is broken down.

Cross-breaks analysed through the survey include:

- Size of company, defined as follows:
  - Small: 11-49 employees
  - Medium: 50-249 employees
  - Large: 250+ employees
- Private vs public vs charitable sector
- Organisation headquarters location (UK region and urban/suburban/rural)

A breakdown of the survey sample can be found in the appendix.

### 3.2 Economic benefits of increased digitisation

The economic analysis centred around the impact of increased use of digital technology on three variables: turnover, employment, and GVA (contribution to GDP). Data for individual businesses’ turnover levels and growth rates, and employment levels and growth rates over the 2021-2023 period, were obtained from the survey. The survey included questions on annual turnover aimed at private-sector firms and annual budget allocation for public-sector organisations, as well as questions around headcount and headcount change for both types of organisations.

However, the survey did not include questions around individual respondents’ GVA, as this is often not an easily reportable or well understood metric for non-economists. For this reason, we used the Office for National Statistics’ (ONS) sector-specific GVA figures for 2021 and 2023 for each industry represented in the survey. With these, we crafted GVA-turnover industry ratios which, combined with individual respondents’ turnover data, allowed us to reconstruct GVA figures for each respondent, for both 2021 and 2023.

Specifically, we used GVA estimates at 2023 current prices, that is, prices that have not been adjusted for inflation.

#### Performance of digital leaders and followers

In order to generate comparative statistics on digital leaders’ and followers’ performance across the variables of interest, we found average turnover, employment, and GVA level and growth rates by organisation size and sector.

## Uplifts

Using ONS data on economy-wide turnover, employment, and GVA figures, we calculated the uplift to each of these variables in the hypothetical case that, in 2021, digital followers had increased their use of digital technologies at the rate of digital leaders.

In order to do this, we utilised data from the ONS' Business Population Estimates for 2023, and calculated the level of turnover, jobs, and GVA supported by each type of organisation (small, medium, large). We then adjusted this by whether an organisation was a digital leader or follower which, in each case, implied a larger or smaller contribution respectively to these variables than the average organisation contributed. The uplift calculations for each variable were then carried out by applying the respective 2021-2023 growth rate of digital leaders to the 2021 level of digital followers.

Uplift calculations, therefore, do not speak to how much organisations currently contribute to each of these variables in the economy. They also cannot be interpreted as a forecast for the impact that digital followers would have on the economy if they were to increase their use of digital technologies today.

Additionally, in the case of employment uplift, we operated under the assumptions that the UK labour market operated with no imperfections. That is, that there would have been no barriers to job creation such as skill shortages or labour-market tightness. In reality, these obstacles would have most likely impeded the employment of some of the workers we calculated would have found new jobs.

### 3.3 Social impact of increased digitalisation and the adoption of digital cultures

In constructing the survey, we aimed to gather a holistic view of how digital initiatives are influencing not only the operational performance of organisations but also their broader societal contributions. The survey therefore also included a diverse range of questions designed to assess both the type and extent of social contributions made by organisations through their adoption of digital technologies and digital cultures. By cross-referencing the responses from digital leaders and digital followers, we explore whether organisations that identify as digital leaders tend to report more significant and positive social impacts compared to their counterparts. Specifically, we examine how digital initiatives might contribute to areas such as environmental sustainability, employee well-being, and broader societal benefits.

Additionally, we explore the relationship between the strength of an organisation's digital culture and its reported social impact. The goal was to determine whether organisations with a more ingrained and robust digital culture experienced greater or more varied social benefits from digitalisation compared to those with weaker digital cultures.

Key topics covered in this section include:

- **The perceived social impacts of organisations' digital initiatives:** this section focused on capturing the direct perceptions of respondents regarding how their organisation's digital strategies were affecting society, including aspects like the promotion of digital inclusion, contributions to community engagement, and improved environmental sustainability.

- **The social impact of digitalisation on the work environment and location:** given the growing prevalence of remote and flexible working arrangements enabled by digital tools, we examine how these shifts were perceived to impact organisations differently depending on whether they were in rural, urban, or suburban geographies. We look at factors including the ability to attract talent, employee work-life balance and improved productivity.
- **The social impact of digital skills:** we asked organisations about the importance they place on employee digital skills, and how they approach improving the digital capabilities of their workforce. We explore the benefits of these factors to employees themselves, to individual organisations, and to society as a whole.
- **The social impact of digital technologies on employee wellbeing:** the survey looked into how stronger digital cultures and greater digital adoption contribute to the overall well-being of employees. This included questions about employee satisfaction, the number of sick days taken, and employee turnover rates.
- **The social impact of greater productivity through digitalisation:** We explored how improvements in efficiency and productivity, driven by digital technologies, translated into positive social outcomes, such as enhanced job satisfaction or increased organisational capacity to engage in social responsibility initiatives.

## 4. The Digital State of the Nation

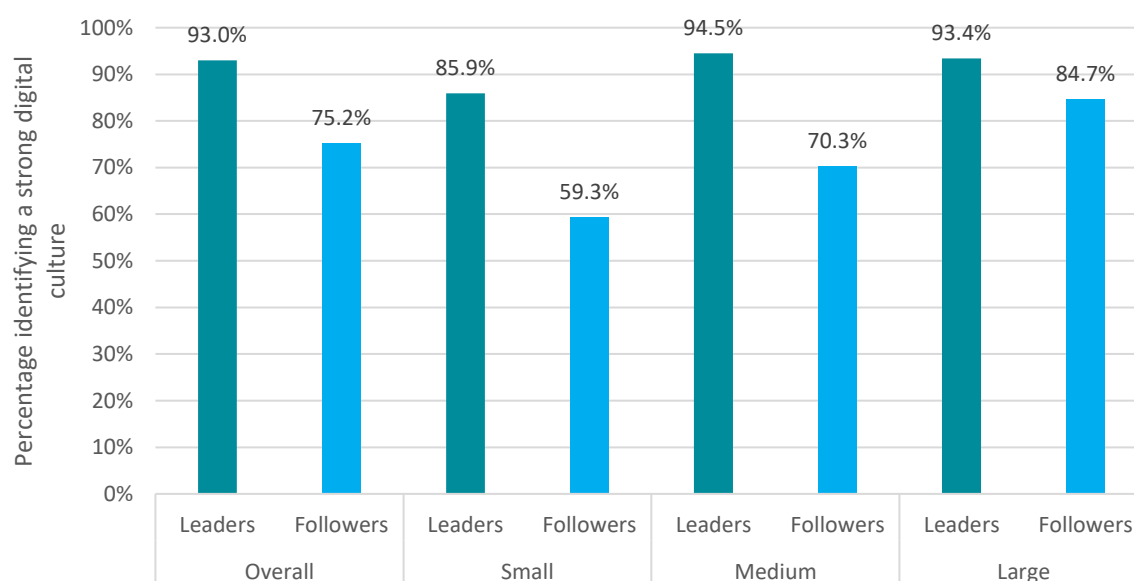
In this section we explore organisations' current level of adoption of digital technology, common barriers to improving digital capabilities, and the digital strengths and weaknesses of our survey respondents. We frame this discussion around the characteristics of and trends among organisations who we identify as 'digital leaders' and 'digital followers'. Digital leaders are those organisations who reported to be increasing their level of technology adoption, encapsulating both greater variety of technologies adopted, and greater frequency or intensity with which they are used. Digital followers are those organisations who are not making such improvements. We also relate the discussion to organisations' self-reported strength of digital culture.

### 4.1 Digital culture vs. digital capability

We begin by introducing a recurring theme in our analysis: those organisations who reported that they had a strong digital culture were not always those who reported the greatest level of progress towards or benefits from digital adoption, indicating a potential mismatch relative to their perception.

To illustrate this phenomenon, Figure 1 shows the percentage of digital leaders and followers who reported that they have a strong digital culture.

Figure 1: Digital culture by organisation size among digital leaders and followers



Source: Opinium Research, Cebr analysis

Figure 1 highlights that most organisations surveyed, irrespective of size, or whether they are identified as a digital leader or follower, believe that they have a strong digital culture. Within this, there is a general trend that digital leaders are more likely to identify a strong digital culture than digital followers; across all organisations, 93.0% of digital leaders report a strong culture, compared to 75.2% of digital followers. The fact that three quarters of digital followers believe they have a strong digital culture, despite not having increased their digital usage between 2021 and 2023, highlights this disconnection well. Many organisations clearly believe

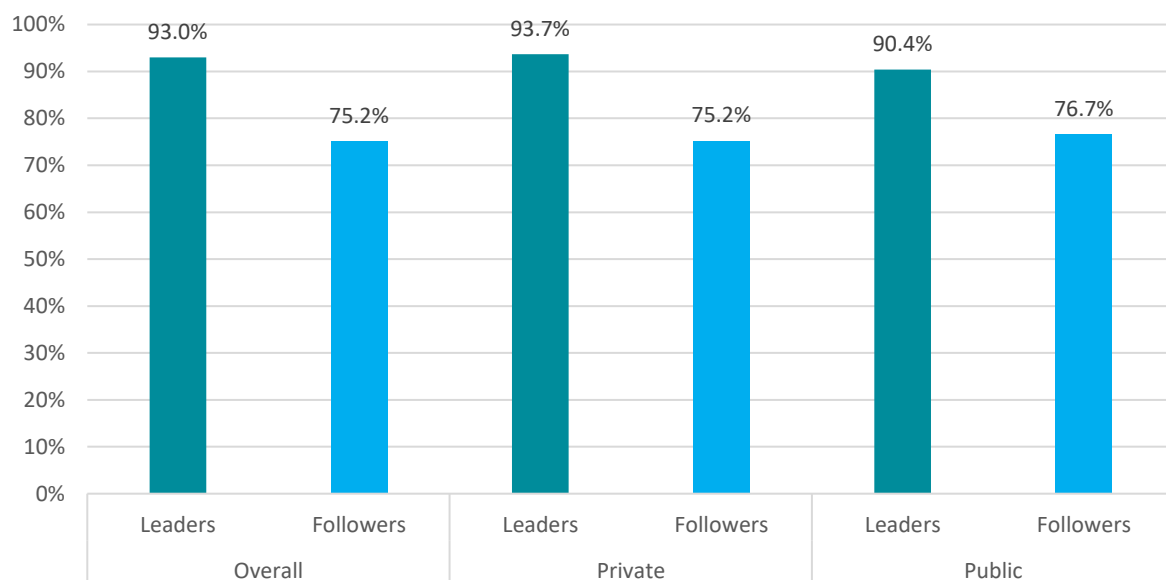


that their organisation culturally understands the benefits of digital technology, despite not actually taking steps to improve their technological capabilities.

The extent of this relationship depends heavily on organisation size; only 59.3% of small digital followers report a strong digital culture, compared to 70.3% of medium-sized digital followers and 84.7% of large digital followers. This latter figure is almost as great as the proportion of small digital leaders with strong digital cultures, at 85.9%. Given the ambiguity in the definition of a strong digital culture, it is difficult to determine from Figure 1 alone whether large organisations are overstating the strength of their digital culture, or whether they do indeed tend to have strong digital cultures but have not been increasing their digital usage because they already have in place strong digital systems, for example.

Surprisingly, the extent of the relationship between digital culture and digital adoption does not depend on whether the organisation is in the private or public sector. Figure 2 shows the percentage of public and private organisations identifying a strong digital culture, and the percentage we identify to be digital leaders or followers.

Figure 2: Digital culture by public and private sector among digital leaders and followers



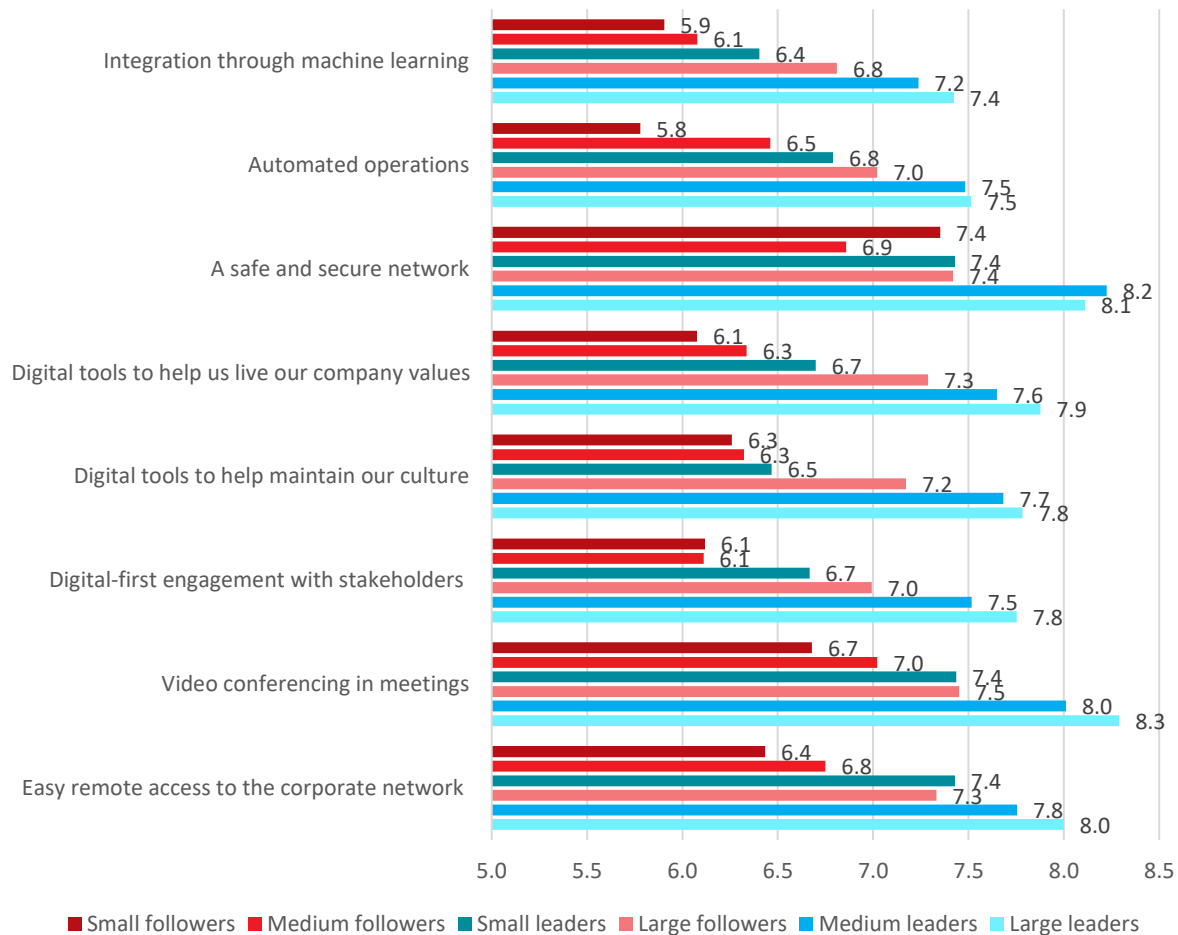
Source: Opinium Research, Cebr analysis

Figure 2 shows that there is little difference between the percentage of public- and private-sector digital leaders and followers who report that they have a strong digital culture. We see that 93.7% of private-sector digital leaders and 90.4% of public-sector digital leaders claim to have a strong digital culture. Similarly, 75.2% private-sector digital followers and 76.7% of public-sector digital followers report weak digital cultures. As with organisation size, it is surprising that three quarters of digital followers in the public and private sectors believe that they have strong digital cultures despite not increasing the variety of digital technologies they use or the frequency or intensity with which they are used.

We can gain further insight into the significance of an organisations' size in whether they report their digital culture is strong or not, by looking at the adoption levels of different digital technologies split by organisation size. Figure 3 lists a range of common digital technologies or policies which may be associated with an organisation having a strong digital culture, and

respondents' level of utilisation thereof, ranked on a 0-10 scale (0 = Not at all utilised, 10 = Fully utilised).

Figure 3: Utilisation of digital tools and policies by digital leaders and followers by organisation size



Source: Opinium Research, Cebr analysis

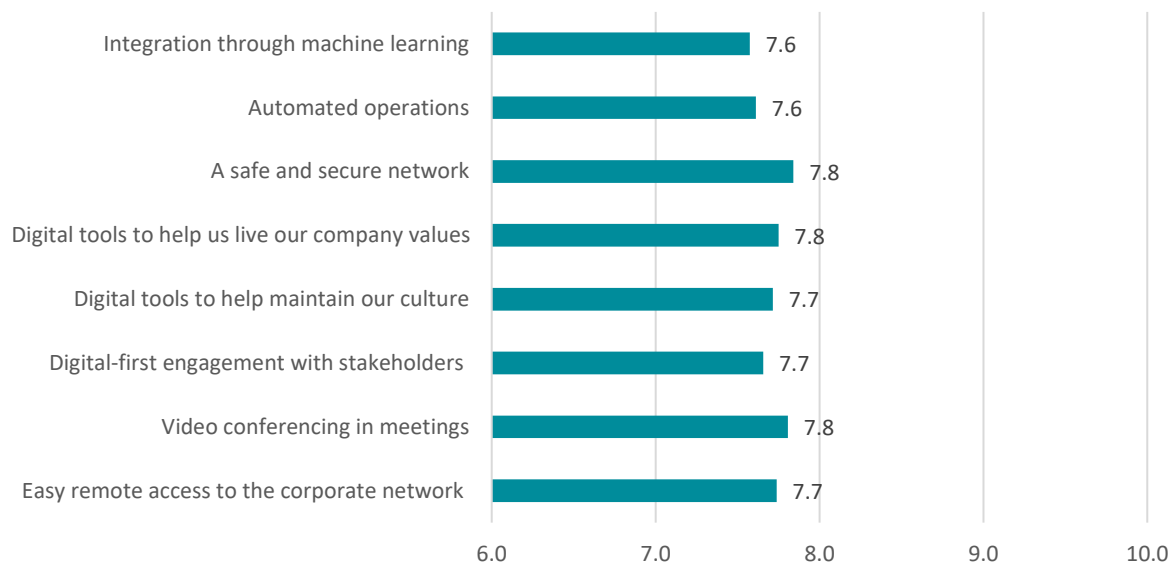
Digital followers are colour-coded in red, with darker red corresponding to smaller organisations and lighter red to larger organisations. Digital leaders are categorised equivalently in blue. From this it can more easily be seen that large organisations utilise each of the listed tools and policies to a greater extent than both medium-sized and small organisations. This suggests that larger organisations have already invested in digital tools and have better-established digital policies, which may explain why the large digital followers identified in the survey report stronger digital cultures than small and medium-sized digital followers.

In addition, large and medium-sized digital leaders consistently show higher utilisation scores across all areas than comparably sized digital followers. Interestingly, even large digital followers outperform small digital leaders in technology utilisation. This, perhaps unsurprisingly given the requirement at times for significant capital investment, emphasises how much better digitally equipped large firms are; even those reducing, or at best maintaining, their utilisation of certain technologies.

This is most clear in large digital followers' utilisation of digital tools to help live their company values and to help maintain their culture, indicating a clear relationship between organisation size and focus on digital culture. Smaller organisations place less emphasis on developing a holistic culture of digital usage, seeming to focus on specific digital practices like improving remote network access.

Furthermore, organisations reporting strong digital cultures also do not report consistently high utilisation scores for any tool or policy. Figure 4 presents the breakdown for this group.

Figure 4: Utilisation of digital tools and policies by organisations reporting a strong digital culture

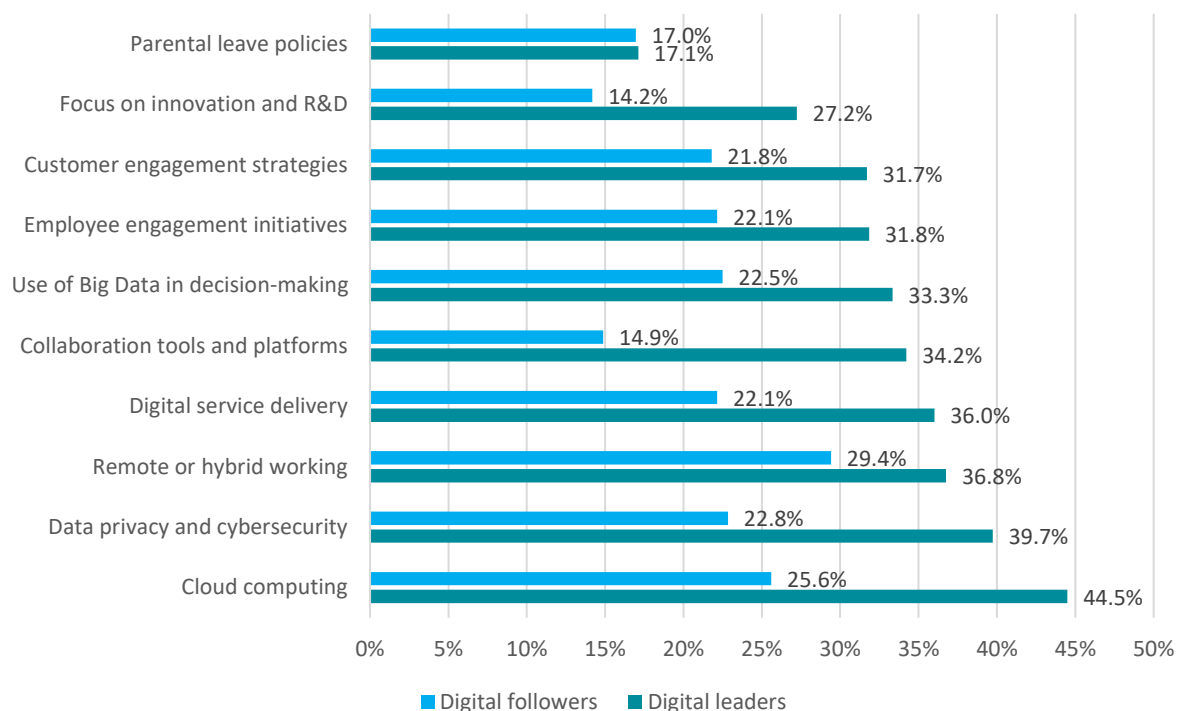


Source: *Opinium Research, Cebr analysis*

Utilisation is evidently suboptimal across the board, meaning that all organisations, including those who think they already have a strong digital culture, could benefit from increasing their digital capabilities.

However, greater utilisation of digital technology is not the only component of successful digital transformation. This, too, varies between digital leaders and followers. Figure 5 shows the percentage of digital leaders and followers who experienced a permanently improved capability in a particular digital tool or policy.

Figure 5: Percentage of digital leaders and followers reporting permanent improvements in specific digital tools or policies



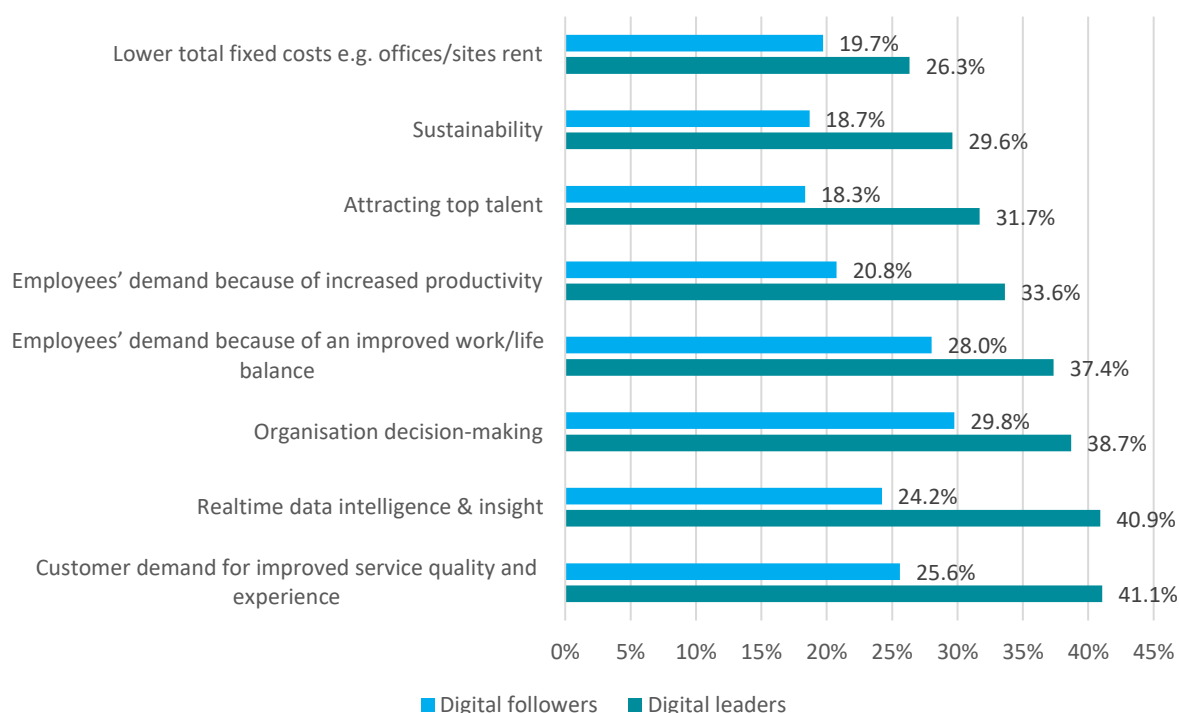
Source: *Opinium Research, Cebr analysis*

On average, approximately one third (33.2%) of digital leaders experienced a permanent improvement in each of the areas listed, versus approximately one fifth (21.2%) of digital followers. In particular, the most common areas of development among digital leaders were cloud computing (44.5%), data privacy and cybersecurity (39.7%), and remote or hybrid working (36.8%). These areas were also most likely to have experienced a permanent development among digital followers, but the proportion of digital followers who saw change in these areas is markedly lower. The greatest difference between the proportion of digital leaders and followers who developed in an area was in collaboration tools and platforms, in which 34.2% of digital leaders and 14.9% of digital followers reported permanent development, a difference of 19.3%.

Neither digital leaders nor followers were likely to have made permanent changes to their parental leave policies, despite the fact that approximately one third of each group (36.8% of leaders and 29.4% of followers) reported that their hybrid working policies had been permanently changed in some way.

The motivations for organisations to make the developments above were also varied. Figure 6 illustrates the most frequently reported motivations for these areas of development, broken down by digital leaders and followers.

Figure 6: Motivations for improving digital capabilities



Source: Opinium Research, Cebr analysis

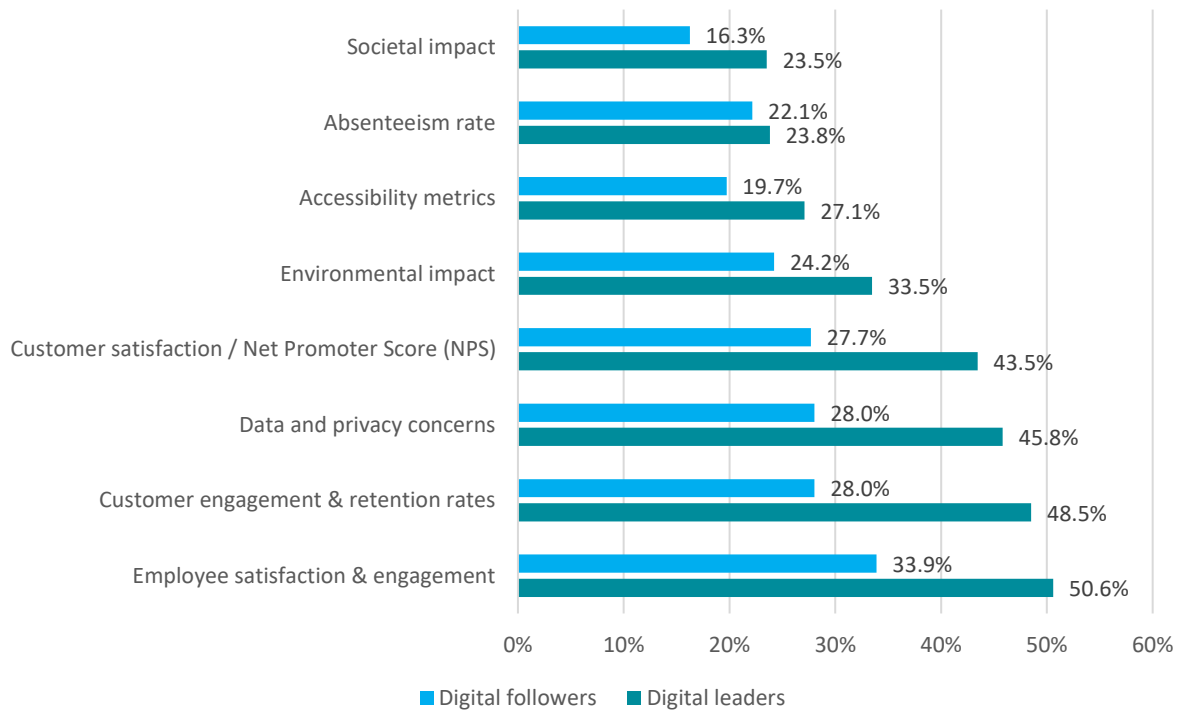
Firstly, digital leaders are far more likely to report each of the motivations listed than digital followers. This suggests that they are more likely to respond to an issue with a digital solution than digital followers.

The most common reason for digital leaders to have made one of the developments discussed was to meet customer demands for improved service quality and experience (41.1%). This contrasts with just 25.6% of digital followers, and therefore suggests digital leaders are better able to react to changing market pressures through technology adoption. Other significant factors driving greater digital adoption among digital leaders were employee demands for improved work/life balance (37.4%) and employee demands for greater technology to increase their productivity (33.6%).

The difference in the frequency with which these factors were reported by digital leaders and followers, suggests that a characteristic of digital leaders is that they have greater buy-in from employees to their organisation's digital strategy and culture. We explore the interaction between digital technologies and employment practices and digital skills in greater detail in section 6, in addition to at the social impacts of digitalisation on employees.

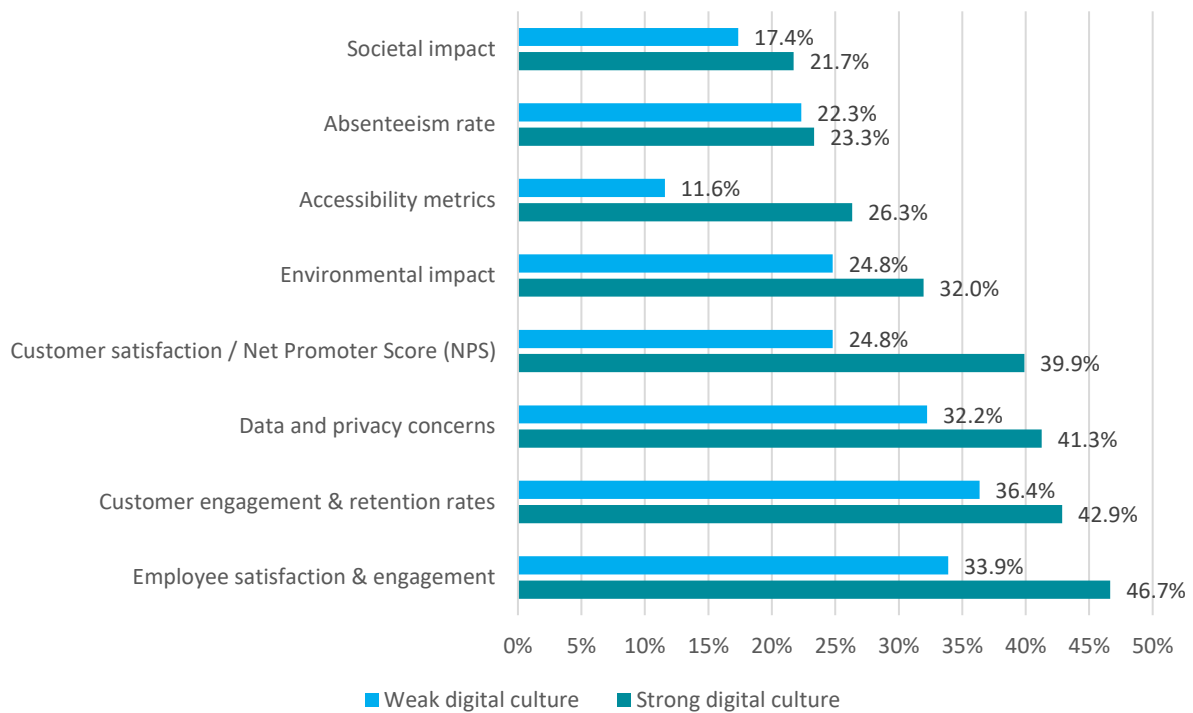
Another aspect of a strong digital culture is the ability of an organisation to evaluate the performance of its digital initiatives. We focus here on the non-financial metrics tracked, in order to gain deeper insight into how organisations are building a culture around digital adoption, rather than how they are evaluating the financial returns to investment in technologies. The metrics tracked by organisations in our survey are detailed in Figure 7 and Figure 8. The metrics tracked by digital leaders and followers in Figure 7 are compared with those tracked by organisations reporting strong or weak digital cultures in Figure 8.

Figure 7: Non-financial performance metrics tracked by digital leaders versus digital followers



Source: Opinium Research, Cebr analysis

Figure 8: Non-financial performance metrics tracked by organisations with strong versus weak digital cultures



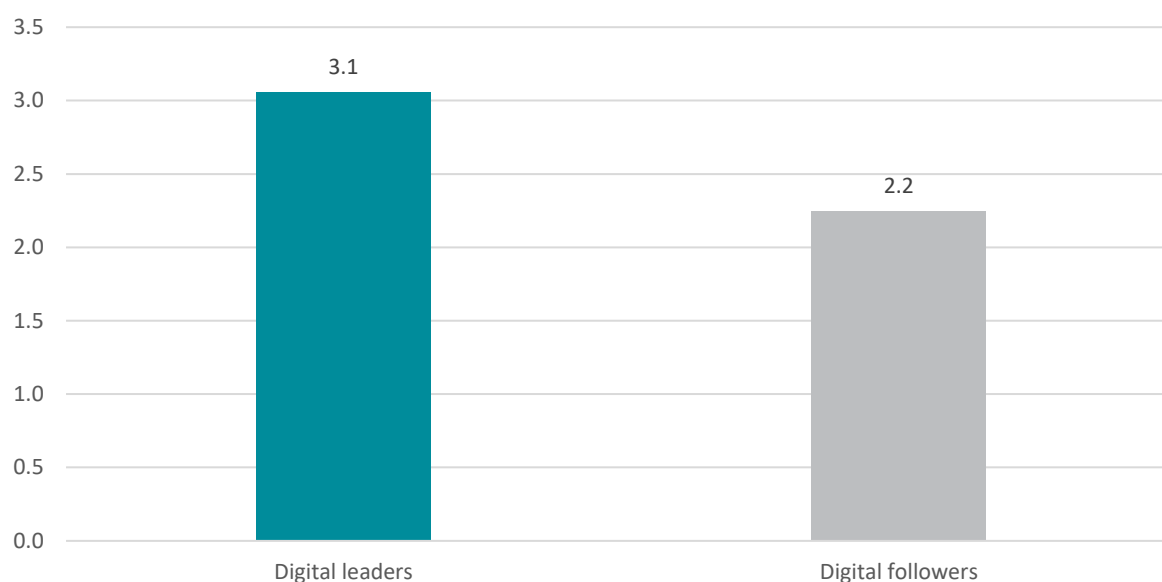
Source: Opinium Research, Cebr analysis

The most-tracked metric for digital leaders, followers and those with a strong digital culture was employee satisfaction and engagement. Approximately half of digital leaders (50.6%) and

strong-digital culture organisations (46.7%) tracked the measure, compared to only one third of digital followers (33.9%) and weak-digital culture organisations (33.9%). The most-tracked measure among organisations with weak digital cultures was customer engagement and retention rates (36.4%). There was broad similarity between the type and number of metrics tracked by digital leaders and those with strong digital cultures, as well as those tracked by digital followers and weak-digital culture organisations. However, the fact that digital leaders are slightly more likely to track each of these measures shows that there is a portion of organisations identifying a strong digital culture whose framework for digital initiative evaluation is not as extensive.

We also find that among organisations with a strong digital culture, there is a difference between the number of non-financial metrics which digital leaders and digital followers in this group track.

Figure 9: Average non-financial performance metrics tracked by digital leaders and followers with strong digital cultures



Source: Opinium Research, Cebr analysis

Figure 9 highlights the significant difference between digital leaders and digital followers in terms of how they track non-financial metrics. On average, digital leaders track 3.1 non-financial metrics, while digital followers with similarly strong digital cultures track only 2.2 metrics. This disparity underscores the aforementioned disconnect in how organisations perceive and define what constitutes a "strong digital culture."

A strong digital culture, in essence, should encompass more than just the adoption of advanced technology or digital tools; it should also involve a proactive approach to performance measurement across various non-financial areas such as employee engagement, customer satisfaction, innovation, and operational efficiency. Tracking a wider array of performance metrics enables an organisation to gain deeper insights into both its internal processes and its external environment. By monitoring these non-financial indicators, digital leaders are better positioned to identify early signs of potential challenges or opportunities, adapt their strategies accordingly, and ultimately maintain a competitive edge.

In contrast, digital followers may mistakenly believe that focusing on fewer metrics is sufficient, which can hinder their ability to spot gaps in performance or areas for improvement. This limited scope may prevent them from responding swiftly to issues that could impact long-term success. Therefore, the data suggests that expanding the range of non-financial metrics tracked is not only a sign of a more mature digital culture but also a crucial factor in driving an organisation's adaptability and resilience in a fast-evolving digital landscape.

In conclusion, the correlation between the number of non-financial metrics tracked and an organisation's ability to thrive in a digital environment further reinforces the importance of fostering a truly comprehensive digital culture. Organisations aspiring to become digital leaders should, therefore, focus not only on developing digital capabilities but also on broadening their performance-tracking mechanisms to ensure they can navigate challenges and seize opportunities effectively.

## 4.2 Barriers to digitalisation

*Melissa Werry, Head of Technology Services, RSPB, on the greatest challenge in implementing new technology:*

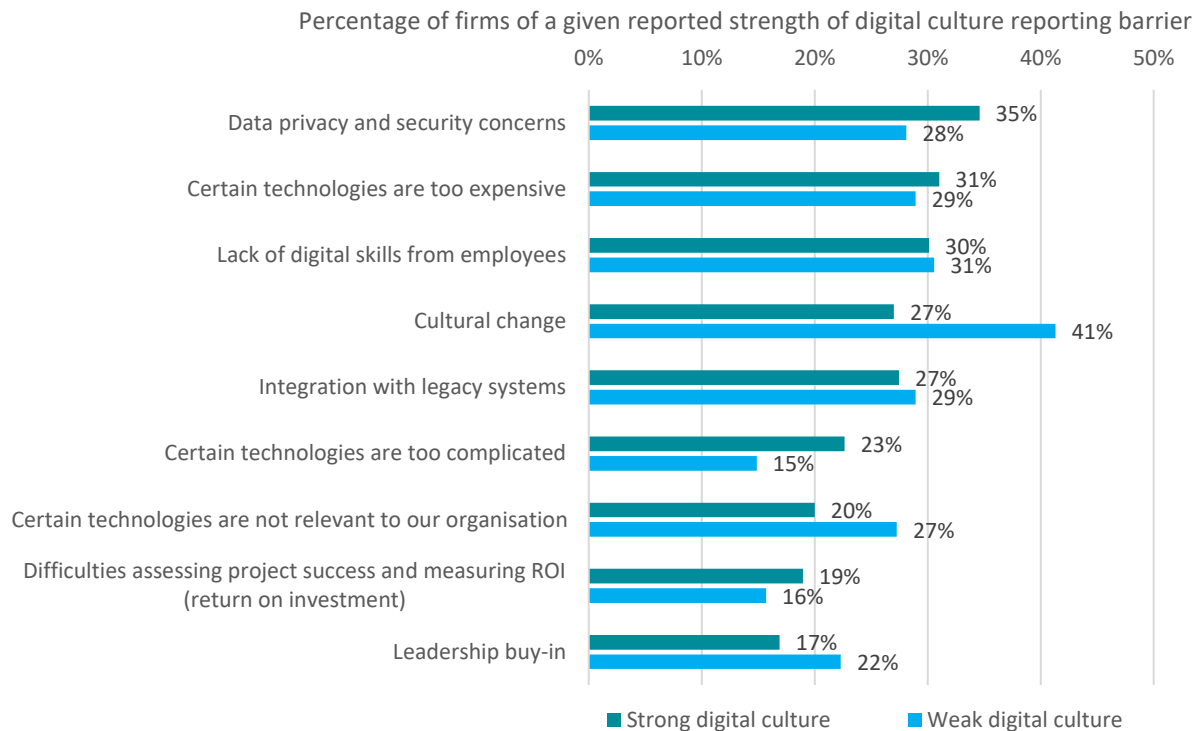
*“Unless you bring people with you in terms of why we are having to make that move, and what that means for you as an end user... we're going to end up with a whole heap of [tech support] calls.*

*“It's always about looking for where we would get best bang for our buck, and how we make this experience easier for our end users by doing more digitally, without it becoming a cold, faceless service,”*

Section 3.1 discussed the differences in the level of digital adoption of different organisations, as well as their relative digital strengths and weaknesses. To gain insight into why and how some organisations are improving their digital capabilities and culture better than others, we now consider the barriers that organisations face in enacting their digital transformation strategies, illustrated in Figure 9.



Figure 9: Barriers to digital initiatives by reported strength of digital culture



Source: Opinium Research, Cebr analysis

Organisations were allowed to select as many barriers as they had experienced. There is a distinction to be drawn between the barriers typically identified by organisations with strong digital cultures and those with weak digital cultures. The single most frequently identified barrier for those with a strong digital culture was data privacy and security concerns (35%). In contrast, the most frequently faced barrier for organisations with weak digital cultures was cultural resistance to change (41%). Similarly, the least commonly reported barrier for strong-digital culture organisations was leadership buy-in to digital initiatives (17%), while for weak-digital culture organisations it was difficulties assessing the success and return on investment of a digital project (16%).

Thus, it could be hypothesised that organisations who self-identify as having a strong digital culture, have both their leaders and employees on board, and find relatively greater difficulty in the technical and financial aspects of digital initiatives than the cultural factors. On the other hand, organisations who identify as having weak digital cultures are challenged more often by the degree of cultural change required to implement digital initiatives than by other aspects. This could suggest that achieving cultural change is the first hurdle for digital Initiatives, and that once this obstacle is overcome, it is easier to make other positive changes in digital strategy. It could also suggest that cultural resistance is a more restrictive constraint in general than financial and operational barriers.

*Simon Goodman, CIO at Network Rail:*

*"I generally don't subscribe to there being such a thing as a technology project – generally, you're using technology to help enable a business benefit. And that business benefit can be anything from increasing efficiency, reducing cost, improving*

*customer satisfaction... More often than not, technology is only around 20% of the overall problem, and business adoption, business challenges, are the lion's share."*

Figure 9 also shows an interesting relationship between the number of barriers which organisations reported facing, and the *degree* to which they thought that they had a strong or weak digital culture. Organisations with 'very strong' and 'very weak' self-reported digital cultures reported 2.6 and 3.1 barriers on average, respectively, whereas those who reported that they had 'somewhat strong' or 'somewhat weak' digital cultures reported only 2.4 and 2.3 barriers per organisation, respectively.

This result is initially potentially unintuitive. One hypothesis may be that those with the strongest digital cultures may identify more barriers because they make more tangible attempts to adopt new digital technologies, thus discovering or increasing their awareness of said barriers and challenges. However, it may be that some organisations overstate the strength of their digital culture, and in reality, the number of barriers encountered rises with a weaker digital culture.

## 5. Economic benefits of increased digitisation

### 5.1 Academic background

The analysis conducted in this section, on the economic impact of increased digitisation, contributes to a wider academic literature on the impacts of technological progress on key indicators such as GDP and employment.

Multiple studies find a relationship between expanded broadband capabilities (high-speed, always-on Internet connectivity)<sup>4</sup> and growth in countries' GDP. A World Bank report, for instance, states that a 10% increase in fixed broadband penetration would increase GDP growth by 1.21% in developed countries, and by 1.38% in developing ones.<sup>5</sup> Others confirm the existence of a consistent effect of broadband adoption on national economic output within OECD countries.<sup>6</sup> In our report, we find similar trends: increased digitisation is related to better GVA performance for individual organisations, which has wider economic benefits across the UK.

In the case of employment, a positive relationship has been found between broadband availability and county-level employment in the US, with improvements in speed being less determinant to job creation than the availability of broadband in of itself is.<sup>7</sup> Moreover, this literature allows us to hypothesise on the mechanisms operating behind our results. In our report, we often find a relationship between increased digital use and faster employment growth. This could be due to multiple factors, such as businesses accessing wider labour pools across the UK through remote-working schemes, or the creation of jobs in the technology sector, as more workers are required to meet demand for increased connectivity.<sup>8</sup>

#### 5.1.1 Turnover, employment, and GVA

These three variables have been the focus of the economic impact analysis conducted by Cebr. For each, we present comparisons across digital leaders and followers, including breakdowns by firm size and across the public and private sectors. We also include a summary

4 World Development Report 2016, background paper: Exploring the Relationship Between Broadband and Economic Growth, Michael Mingos, 2016: [World Bank Document](#)

5 Ibid.

6 Pantelis Koutroumpis, The economic impact of broadband: Evidence from OECD countries, *Technological Forecasting and Social Change*, <https://doi.org/10.1016/j.techfore.2019.119719>.

7 Yang Bai, The faster, the better? The impact of internet speed on employment, *Information Economics and Policy*, Volume 40, 2017, Pages 21-25, ISSN 0167-6245, <https://doi.org/10.1016/j.infoecopol.2017.06.004>.

8 Katz, R.L. (2018). The Impact of the Broadband Internet on Employment. In: Pupillo, L., Noam, E., Waverman, L. (eds) *Digitized Labor*. Palgrave Macmillan, Cham. [https://doi.org/10.1007/978-3-319-78420-5\\_6](https://doi.org/10.1007/978-3-319-78420-5_6)

of the uplift calculations, which estimate what the impact on each variable would have been if digital followers had increased their use of digital technologies at the rate of digital leaders between 2021 and 2023. Essentially, this scenario models a hypothetical case in which every organisation in the economy had increased digitisation, to the extent that our survey suggests digital leaders have done.

### 5.1.2 The 2021-2023 period

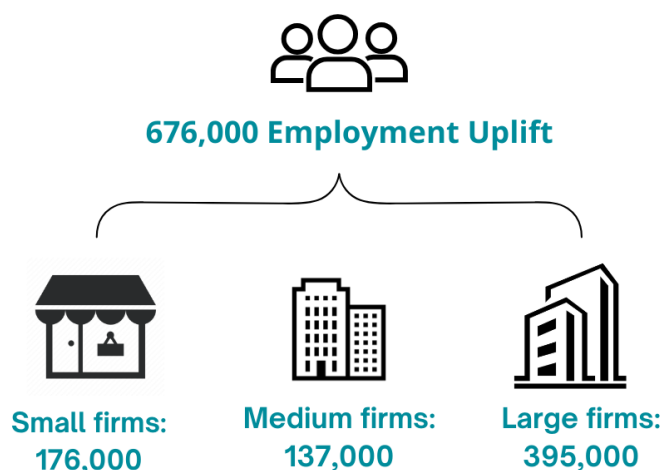
The survey used in this report collected data for the years 2021, 2022, and 2023. This sample period captures key recovery years after the COVID-19 pandemic, however this does not affect the validity of the analysis. In the case of turnover, for instance, even if firms had a larger revenue increase over the 2021-2023 period than would have been expected pre-Covid, the *differential performance* of digital leaders and followers is still relevant. Since leaders and followers both were surveyed over the 2021-2023 period, they were both exposed to the same “shock”, and yet still performed differently.

## 5.2 Employment

### 5.2.1 Employment uplift

**A total of approximately 676,000 new jobs could have been created if, between 2021 and 2023, all organisations had increased their use of digital technologies to the standard of digital leaders.**

Figure 10: Aggregate employment uplift of the hypothetical increase in digital adoption across the economy, by organisation size



Source: Opinium Research, Cebr analysis

We here present our estimates for the potential additional employment that could have been generated if between 2021 and 2023, digital followers had increased their use of digital technologies at the same rate as digital leaders, and in turn had grown their headcount by similar amounts. We also present a breakdown of total uplift by size and across the public and private sector.

An important caveat to add is that, in order for the estimated employment growth between 2021 and 2023 to have been realised, not only would all organisations have to have been increasing their use of digital technology, but also labour markets would have had to satisfy

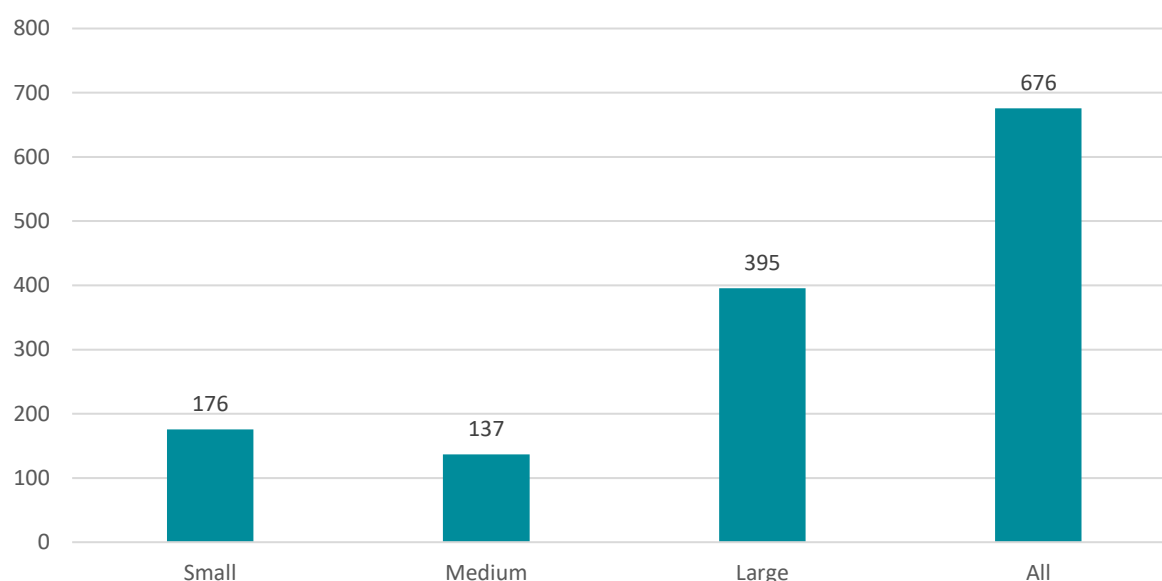
certain conditions. Skill shortages and tight, inflexible labour markets could have stumped the growth of employment below our predicted figures. Indeed, this is of relevance, since the number of vacancies in the UK, for instance, remains above pre-pandemic levels, indicating some degree of tightness.<sup>9</sup> In the following findings, however, we have assumed sufficient slack within labour markets to support the potential increase in labour demand modelled.

Figure 11 presents the aggregate number of new jobs which, under the assumptions lined out, would have been associated with the increased use of digital technologies between 2021 and 2023. Over the whole economy, it is estimated that approximately **676,000** new jobs would have been created. Our analysis suggests that the greatest level of job creation if all organisations had digitised at the level of digital leaders, would have been amongst large businesses (395,000, or nearly 60% of the total). This suggests that across the UK economy, effective digitalisation amongst large organisations is critical to maximise potential job creation.

This is however to an extent unsurprising. Under the modelled scenario, **large businesses** would have supported **17,558,000 out of a total estimated 31,666,000 jobs across the UK**. This is up from current estimates of 17,163,000, but broadly proportionate at approximately 55% of all UK employment.<sup>10</sup>

The impact of large organisations on additional employment therefore, while notable, is proportional to their existing contribution to the UK economy.

Figure 11: Aggregate employment uplift by firm size (thousands) 2021-2023



Source: Opinium Research, Cebr analysis

Although each **small** business would have contributed to uplift only moderately, increasing their headcount by an average of 1.8%, they would in aggregate have supported approximately **176,000 new jobs out of the total estimate 676,000**. As with large businesses,

<sup>9</sup> Labour market overview, UK: September 2024, ONS, ([ons.gov.uk](https://ons.gov.uk))

<sup>10</sup> ONS 2023 Business Population Estimates, ([www.gov.uk](https://www.gov.uk))

their notable hypothetical contribution to this total uplift would have rested on the relative number of people currently employed by small business in the UK in 2023: approximately 9,631,000 out of an approximate total of 30,990,000 (31%).

**Mid-sized businesses are somewhat distinct.** These organisations would have generated **137,000 out of the total approximate 676,000** jobs estimated; less in *absolute* terms than small or large organisations.

However, in *relative* terms, **mid-sized** organisations would have **grown their employment the fastest**. Whereas, overall, businesses would have increased their employment by an average of 2.2% between 2021 and 2023, mid-sized organisations would have done so by an average of 3.3%. This information is summarised in Table 1 **Error! Reference source not found.**, and suggests that at the individual business level increased digital technology use seems to be particularly beneficial for mid-sized organisations. We consider this further when discussing specific employment growth trends for mid-sized digital leaders and followers, later in this section.

Table 1: Average uplift to employee number by firm size (%) 2021-2023

Size	Average % uplift to employee number
Small	1.8%
Medium	3.3%
Large	2.3%
All	2.2%

Source: Opinium Research, Cebr analysis

At the end of 2023, 1,320,000 people were unemployed in the UK.<sup>11</sup> Although we cannot exactly estimate how this figure would have changed in our hypothetical scenario (given the large array of factors that affect national unemployment levels), there are potential economic and wider social impacts associated with the estimated 676,000 new jobs in demand. Tax revenue, for instance, would have most likely increased, bringing fiscal benefits to the government. Those who would have left unemployment, additionally, would have avoided ‘a higher prevalence of depressive symptoms and major depressive disorder’<sup>12</sup> associated with being unemployed. **It could be argued, therefore, that more people finding jobs as a result of greater digitisation might lead to increased societal happiness.**

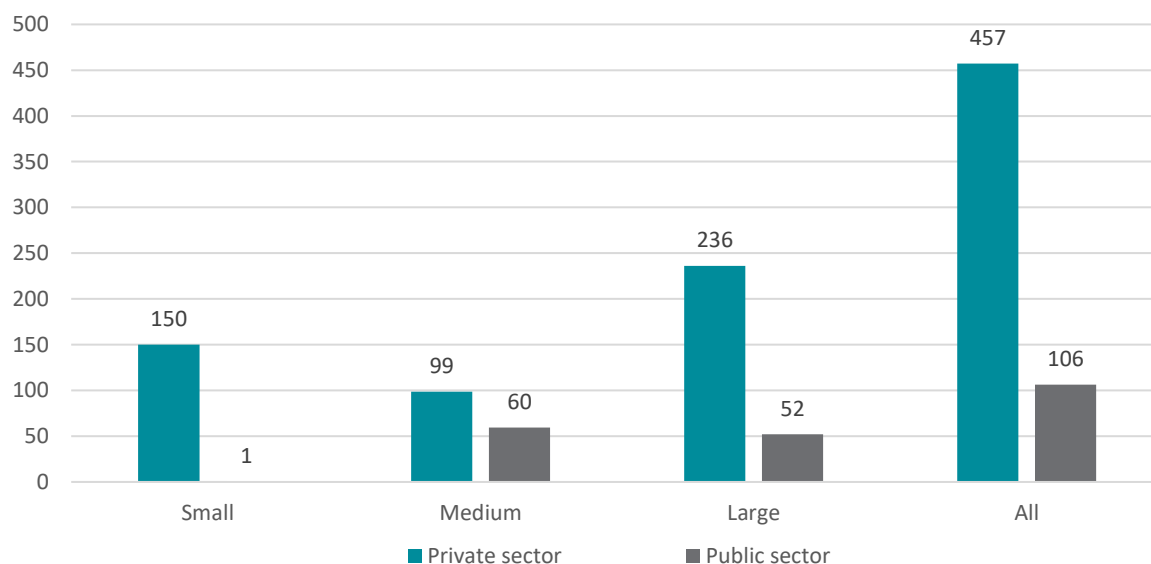
In the case of employment, additionally, we present a breakdown of these aggregate uplift figures across the **public** and **private** sectors. The charities sector is not included in the

<sup>11</sup> Employment in the UK: February 2024, Office for National Statistics, ([ons.gov.uk](https://ons.gov.uk))

<sup>12</sup> Amiri, S. (2021). Unemployment associated with major depression disorder and depressive symptoms: a systematic review and meta-analysis. *International Journal of Occupational Safety and Ergonomics*, 28(4), 2080–2092. <https://doi.org/10.1080/10803548.2021.1954793>

calculations below, hence why the sum of the private and public sectors' data does not perfectly sum to the aggregate data.

Figure 12: Aggregate employment uplift by firm size (thousands) 2021-2023<sup>13</sup>



Source: Opinium Research, Cebr analysis

The employment uplift calculations reflected in Figure 12 show that **the largest portion of jobs created would have been in the private sector**, at approximately **457,000** (68%) new jobs of the approximate 676,000 total.

We calculated that **the number of private-sector jobs in 2023 would have risen to around 23,046,000**. Although this is larger than the current estimate of 22,589,000, it is still roughly proportionate, at around 73% of total employment in the UK.

The **public sector**, on the other hand, would have contributed to absolute aggregate uplift less considerably, adding approximately **106,000 new jobs**, or 16% of the total. Notably, however, this contribution to uplift is larger than the public sector's corresponding 12% contribution to employment in the UK in 2023. These findings suggest, therefore, that **if all organisations had digitised to the standard of digital leaders, more jobs would've been created in the public sector than is proportional to their contribution to employment in 2023**. Although this set of organisations face challenges when digitising, had all of them increased digitisation, they would have enjoyed relatively large headcount growth.

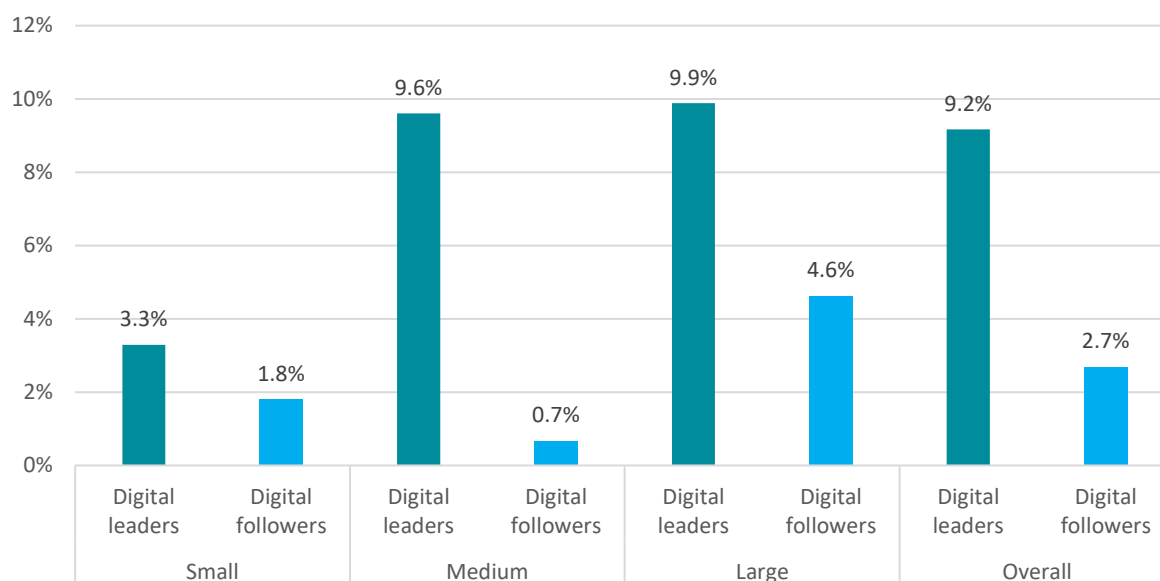
<sup>13</sup> The sample size for the small public-sector group is around 20 respondents, which is too small to base robust inferences on. However, 1,000 new jobs of this kind is a result proportional to the amount of people in employment in this group, and so because of this reason, and for comparative purposes, this figure has been included in the table.

## 5.2.2 Performance of digital leader and follower organisations

Unlike the above, which presents the hypothetical impact of increased digital technology use across the entire economy, this subsection discusses the **employment trends** of digital leaders and followers between 2021 and 2023 at the individual organisation level.

In Figure 13, we observe that, whereas surveyed **leaders** across the whole economy **reported an average 9.2% increase** in their headcount, **followers** reported an average increase of 2.7%; **6.5 percentage points lower** than this figure.

Figure 13: Employment growth rate by firm size, digital leaders and followers, (%) 2021-2023



Source: Opinium Research, Cebr analysis

As referenced previously, the most acute differences between leaders and followers are observed for mid-sized organisations, with **mid-sized leaders increasing their average number of employees by an average of 8.9 percentage points (9.6%) more than followers (0.7%)**. In other words, we observe that a failure to effectively digitalise is associated with **dramatically inferior growth for mid-sized organisations**. This data would suggest that the opportunity cost of not effectively digitalising (in terms of the potential growth foregone) is greatest for mid-sized organisations. Considering this more broadly, in order for the economy to maximise the economic returns to digitalisation, this data would suggest that the greatest return is enjoyed when mid-sized businesses effectively embrace digitalisation.

**Despite this, large digital leaders reported the highest growth in employment**, at 9.9% on average. Further, large digital followers still outperformed other-sized counterparts, growing on average 2.8 percentage points more than small digital followers, and 3.9 percentage points more than mid-sized ones. This pattern supports the point developed in Section 4, that **large digital followers are better digitally prepared** than other-sized followers, and so enjoy faster employment growth.

**Small digital leaders** again present **comparatively lower growth figures** than their medium and large counterparts. While the gap between large and medium-sized leaders is of 0.3 percentage points, the gap between large and small leaders is of 6.6 percentage points. While non-digital factors could explain this, these observations could equally at least partially reflect

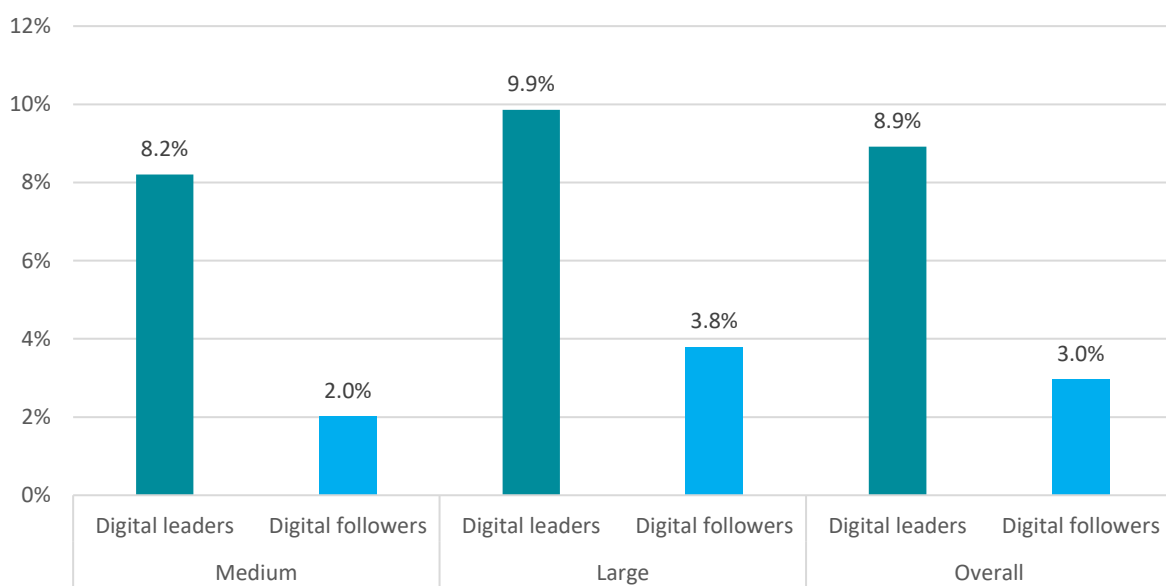


small leaders' comparatively worse digital preparedness, which as our data suggests, would at least partially be negatively impacting their headcount growth.

Indeed, ranking their technology utilisation out of 10, large digital followers scored **7.2** on average, while small digital leaders scored an average **6.9**. If connectivity, as suggested in the start of this section, is related to employment growth, we would expect that these different scores serve to explain the patterns described by Figure 13. Further detail on the different levels of preparedness of large and small organisations is included in Section 4.

Figure 14 and Figure 15 present a breakdown of these results for the **private and public sectors**.

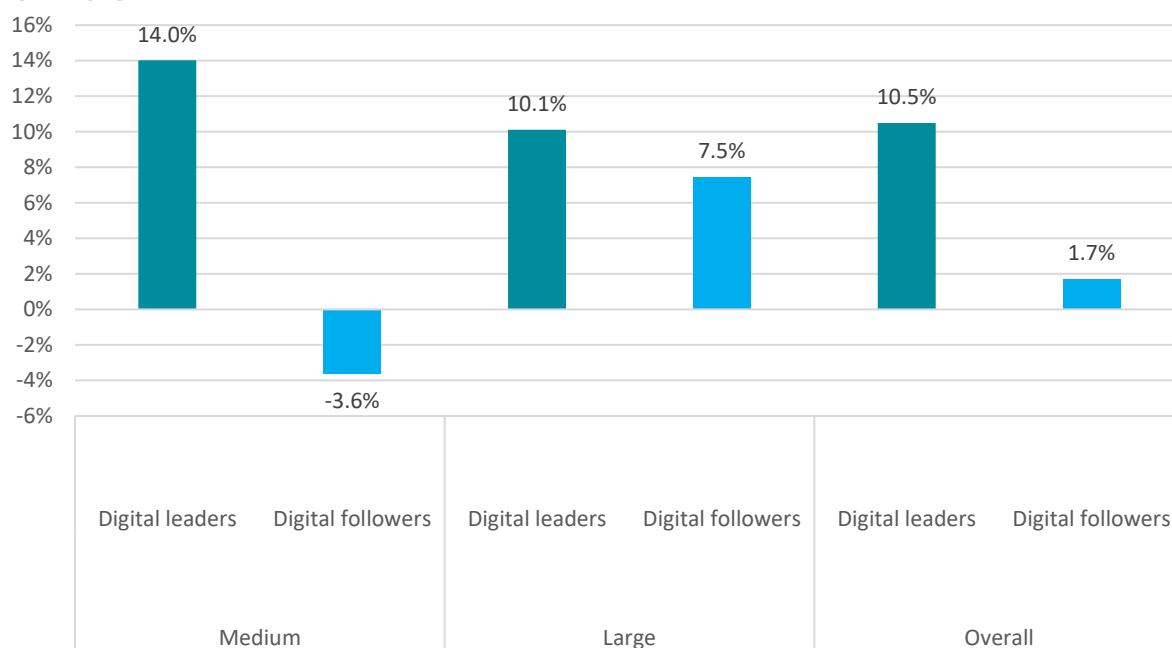
Figure 14: Employment growth rate in the private sector by firm size, digital leaders and followers (%) 2021-2023<sup>14</sup>



Source: Opinium Research, Cebr analysis

<sup>14</sup> In Figure 14 and Figure 15, we have excluded small firms. This is due to a small public-sector sample size. The sample size for small-private-sector firms was large enough to make robust inferences on, but these were also excluded due to the lack of a meaningful public sector comparator. Given the small number of small public firms, dynamics for small organisations in Figure 13 reflect more so the dynamics of private-sector small firms.

Figure 15: Employment growth rate in the public sector by firm size, digital leaders and followers (%) 2021-2023



Source: Opinium Research, Cebr analysis

The gap in average employment growth rates between digital leaders and followers of all sizes was larger in the public sector (8.8%), than it was in the private sector (5.9%). This suggests that while greater challenges exist in effectively digitalising in the public sector, the potential benefit for individual organisations is arguably greater.

Key insights emerged from our interviews with technology executives who are responsible for driving digital change in their organisation, and which further support this argument. Interviewees within the public sector reported budget constraints as an obstacle to digitisation, which is not a barrier faced by private-sector firms. Other obstacles described were digital skill shortages and a weak digital culture and desire to embrace large-scale changes.

At the same time, they also recognised the potential benefits of increased digitisation. Within healthcare, for instance, one interviewee believed that digitisation could improve the quality of patient care and provide decision support needed to avoid human error. Our results further suggest that, when public organisations are able to overcome the obstacles they face, they outperform digital followers by a larger amount than their private-sector counterparts.

Indeed, while the gap is large in both the private and public sector, **mid-sized public-sector digital leaders grew their headcount 17.6 percentage points quicker than their follower counterparts.** Additionally, medium and large leaders in the public sector grew their headcount by considerably more (5.8 percentage points more in the case of mid-sized leaders) than private-sector leaders of these sizes.

It is worth noting, additionally, that the large gap between public sector leaders and followers is driven as much by the good performance of leaders as it is by the poor headcount growth of followers. **Not increasing digitisation seems to be particularly costly for public organisations,** with followers increasing their headcount by a comparatively low average of 1.7%.

An important caveat to add is that headcount in public organisations may not only be determined by digital technology use, but also by annual budget allocations. These allocations at the same time impact possible investment in digitisation.

Therefore, the group we have classified as ‘digital followers’ may overlap with the group of public sector organisations who have been forced to constrain their digital investment. Our underlying hypothesis within this section, is that increasing digitalisation is in some form responsible for increasing economic impacts (be they employing more people, or as measured by other variables). However, it is important to acknowledge, specifically for public sector organisations, the potential interdependency and possibility of a spurious relationship, whereby the employment trends discussed above are determined by budget allocations, which also impact organisational investment

Nevertheless, our findings in Section 6, pertaining to the productivity improvements of public-sector organisations which have introduced more digital technologies, suggest that headcount may have also risen because of a productivity effect. There are likely to be, therefore, multiple mechanisms determining employment in the public sector.

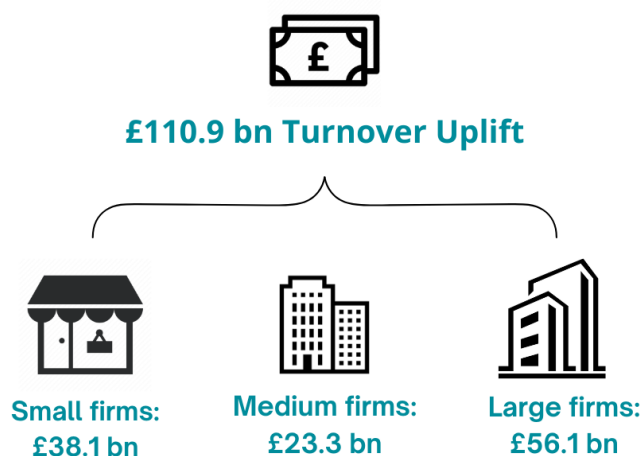
## 5.3 Turnover

In our analysis, the “turnover” variable was given a different interpretation across **private** and **public sector** organisations. Whereas for private firms, the use of their annual turnover as a financial metric is uncomplicated, in the case of public organisations we defined annual budget allocation as the adequate counterpart to private sector turnover.

### 5.3.1 Turnover Uplift

**A total turnover growth of £110.9 billion could have been achieved in the private sector if, between 2021 and 2023, all firms had increased their use of digital technologies.**

Figure 16: Aggregate turnover uplift of the hypothetical increase in digital adoption across the economy, by organisation size



Source: *Opinium Research, Cebr analysis*

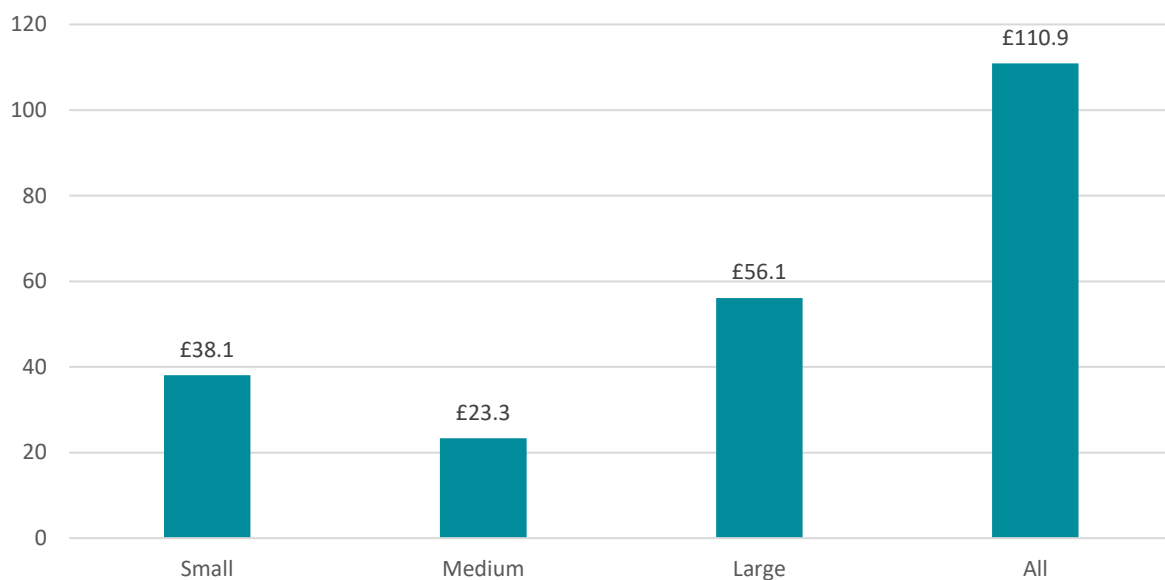
We here present the expected turnover uplift across the whole UK economy if between 2021 and 2023, all private firms had increased their use of digital technologies at the rate of digital leaders. Given that an analysis of turnover uplift in the public sector may not capture the

possible efficiency and productivity gains of increased use of digital technologies, but rather a change in government policy, the turnover uplift calculations have been restricted to the private sector.

Increased turnover in the private sector can be beneficial to society at large through a variety of channels. Firms, for instance, might look to increase headcount if turnover raises, reducing unemployment which, as discussed above, has positive social implications. They might also look to expand their operations, generating a larger volume of output and so contributing to higher overall GDP.

In order to generate turnover uplift figures, we applied the 2021-2023 growth rate of digital leaders to digital followers' 2021 turnover. Figure 17 presents estimated aggregate uplift to turnover across the British economy by firm size.

Figure 17: Aggregate turnover uplift by firm size (£bn) 2021-2023



Source: Opinium Research, Cebr analysis

Across the whole economy, £110.9 billion could have been generated in turnover through increased use of digital technologies between 2021 and 2023.

**Large firms** would have contributed to raising **£2,180 (51%) billion out of a total estimated £4,259 billion**, broadly in line with their contribution to 51% of total turnover in 2023.<sup>15</sup> As with employment, effective digitisation of large businesses would have been essential in maximising overall business growth

**Small firms in aggregate**, on the other hand, would have contributed **£1,300 billion** to the total £4,259 billion. However, each small firm would have found a relatively **low uplift individual turnover**; an average **£27,206**. Their large contribution to overall turnover uplift, therefore, would have more likely been a consequence of the relatively large number of small

15 ONS 2023 Business Population Estimates, ([www.gov.uk](http://www.gov.uk))

firms in the UK economy in 2023 - 1,400,120 - than it would have been of the increase in uplift that each small firm would have enjoyed.<sup>16</sup>

In Figure 17, **mid-sized firms** present the lowest contribution to aggregate turnover uplift in *absolute* terms, of **£785 billion** to the total £4,259 billion. In *relative* terms, however, **mid-sized firms would have grown their turnover the quickest** between 2021 and 2023. Whereas business turnover overall would have increased by an average 2.7%, mid-sized firms' turnover would have done so **by an average 3.1%**. These findings are summarised in Table 2 and suggest that, as we saw in the employment section, returns to investment in digital technologies could potentially have the largest impact on mid-sized firm turnover.

Table 2: Turnover uplift 2021-2023 by firm size

Size	Average % uplift to turnover
Small	3.0%
Medium	3.1%
Large	2.6%
All	2.7%

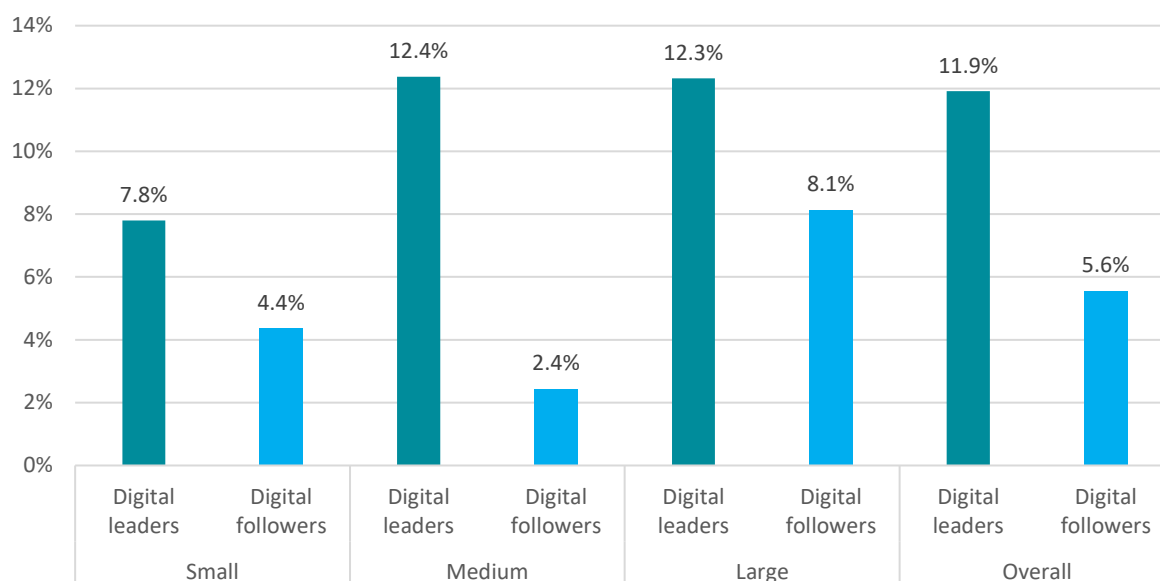
Source: Opinium Research, Cebr analysis

### 5.3.2 Performance in the Private Sector

This section focuses on the specific trends we found across survey respondents regarding their turnover growth between 2021 and 2023, and their use of digital technologies over this period. Figure 18 presents the trends in turnover growth between 2021 and 2023 for private sector firms.

<sup>16</sup> ONS 2023 Business Population Estimates, ([www.gov.uk](http://www.gov.uk))

Figure 18: Turnover growth rates by firm size in the private sector, digital leaders and followers (%) 2021-2023



Source: Opinium Research, Cebr analysis

Across the survey respondents, those who we categorised as **private-sector digital leaders** reported, on average, **an 11.9% increase in their turnover between 2021 and 2023**. In contrast, digital followers reported an average 5.6% increase over the same period.

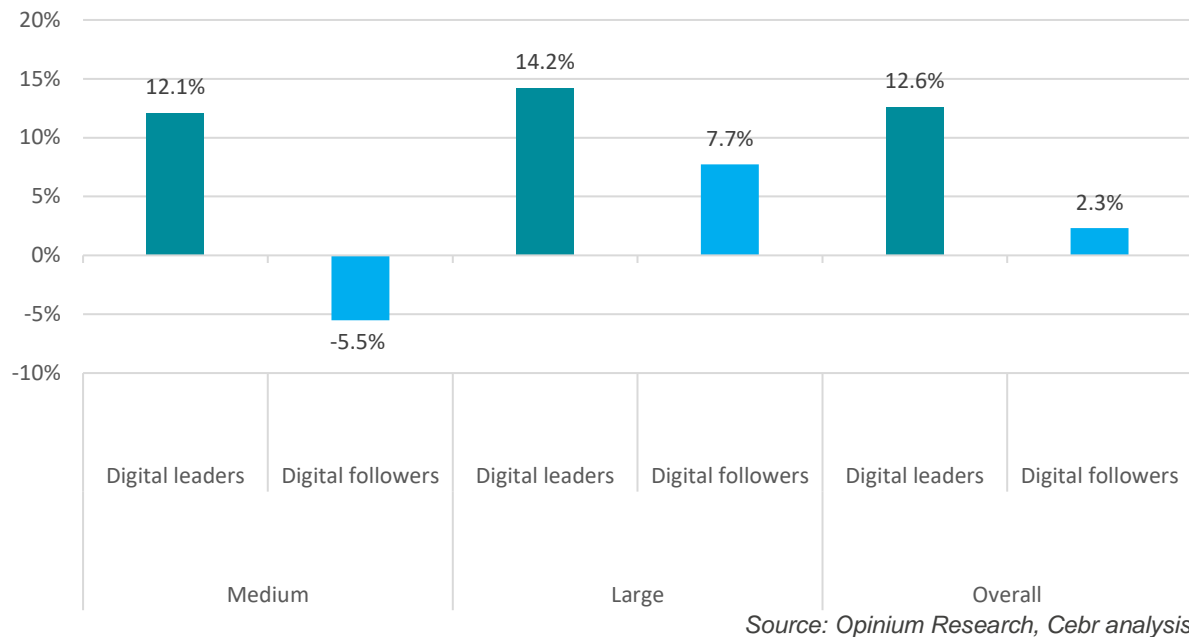
The greatest difference in performance can be observed for **mid-sized** firms, with digital **leaders** reporting a **10 percentage points higher increase in revenue than similar-sized digital followers**. Of particular interest is the fact that the relative benefits for medium firms of increased digitisation seem not to be driven by the performance of leaders, who only outperformed large counterparts by 0.1 percentage points, but by the weakness of **mid-sized digital followers**. These organisations experienced turnover growth only at approximately half the rate of small digital followers, and **5.7 percentage points slower** than large digital followers. Once again this supports the argument that the opportunity cost of not increasing digitisation is *particularly high* for mid-sized organisations.

### 5.3.3 Performance in the Public Sector

In Figure 19, we present the gap in budget allocation growth between 2021 and 2023 across digital leaders and followers in the public sector and broken down by size. Across organisations, the difference in annual budget allocation increases is large, **with leaders reporting an average 10.3 percentage point larger increase than followers**.

As mentioned in the employment section, it is likely that budget allocation and investment in digital technologies are interconnected, as those organisations with lesser funding may find it more difficult to increase their use of digital technologies.

Figure 19: Budget allocation growth rate by organisation size in the public sector, by digital leaders and followers (%) 2021-2023<sup>17</sup>



Accordingly, we can state that in the public sector, mid-sized digital followers reported the largest cut to their annual budget allocations since 2021, which may simultaneously explain lesser investment by them in digital technologies. At the other extreme, large digital leaders have enjoyed a 14.2% average increase in their budget allocations.

## 5.4 Gross Value Added (GVA)

Gross Value Added (GVA) is the value generated by any unit engaged in the production of goods and services.<sup>18</sup> Although GVA data was not collected through the survey, we combined ONS estimates of GVA for each industry with individual respondents' turnover, to model individual GVA. Further detail is included in the Methodology section above.

If an organisation's GVA increases, they are contribution more to total GDP, which is likely to increase too.

### 5.4.1 GVA uplift

As with turnover and employment, we calculated GVA uplifts across the whole UK economy, in the hypothetical case that, between 2021 and 2023, all digital followers had increased their use of digital technologies at the rate of digital leaders. We did so by estimating GVA figures for 2021 and 2023 for all survey respondents, then applying the GVA 2021-2023 growth rate for digital leaders to digital followers at their 2021 GVA level.

<sup>17</sup> In this figure, small firms have been excluded due to small sample sizes.

<sup>18</sup> Gross Value Added, ONS: [Gross Value Added \(GVA\) - Office for National Statistics \(ons.gov.uk\)](https://www.ons.gov.uk/gross-value-added).

In this hypothetical scenario, we would have expected the economy-wide GVA uplift between 2021 and 2023 to be £44.7 billion, with each individual digital follower's GVA rising by an average of £107,597. This is summarised in Table 3.

Table 3: GVA uplift under modelled scenario, 2021 and 2023

Size	Average uplift to GVA, %	Uplift to GVA, aggregate (£bn)
All	1.9%	£44.7

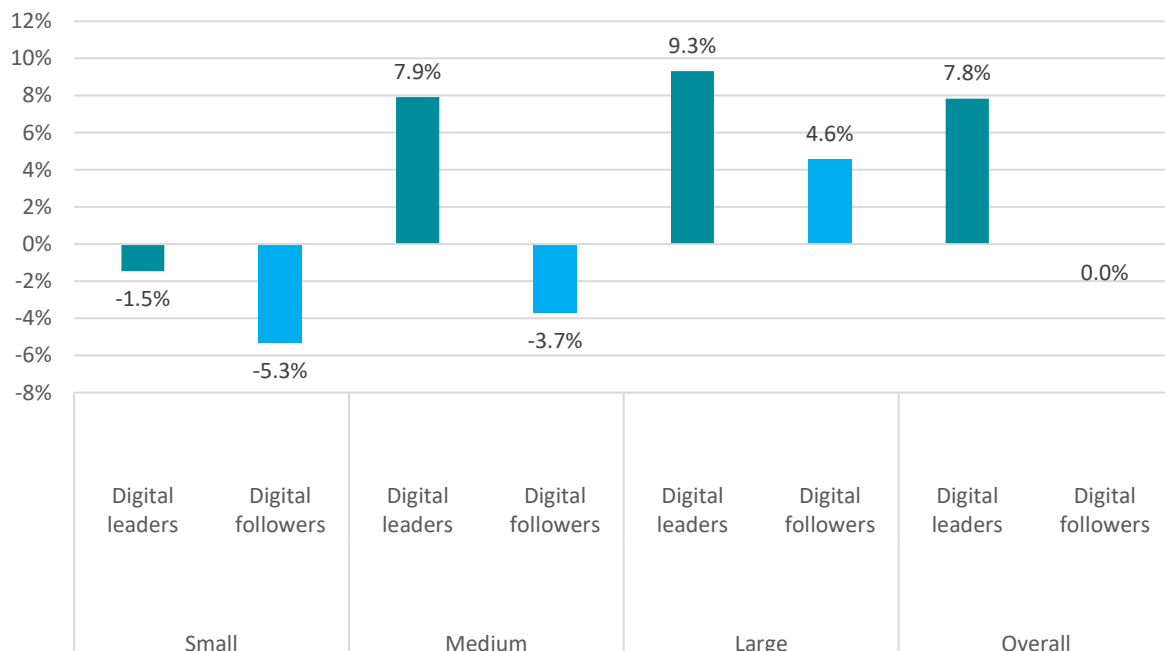
Source: Opinium Research, Cebr analysis

The interpretation of **Error! Reference source not found.** is as follows: while a metric such as GDP would measure growth across the whole economy, an uplift to GVA represents an increase in the value that each organisation adds to the production process, after removing the value of intermediate consumption, or raw materials and other services used through production. Individually, therefore, businesses would have increased their GVA which, on aggregate, is represented as an increase to total GVA of £44.7 billion. On average, **GVA across all businesses would have increased by 1.9%.**

#### 5.4.2 Performance of digital leaders and followers

The following tables compare the GVA trajectory between 2021 and 2023 for digital leaders and followers of different sizes. Figure 20 shows that, **whereas digital leaders grew their GVA by an average of 7.8% between 2021 and 2023, digital followers saw no GVA growth on average.**

Figure 20: GVA growth rate (%) 2021-2023 by firm size, digital leaders and followers



Source: Opinium Research, Cebr analysis

**Large differences are once again most present between mid-sized organisations.** As with turnover and employment, this finding supports the argument that not digitising is particularly costly for mid-sized businesses, which reduced their GVA by 5.3%.



Being a mid-sized leader, therefore, is associated with a greater outperformance in terms of turnover, employment, and GVA, relative to similarly sized followers.

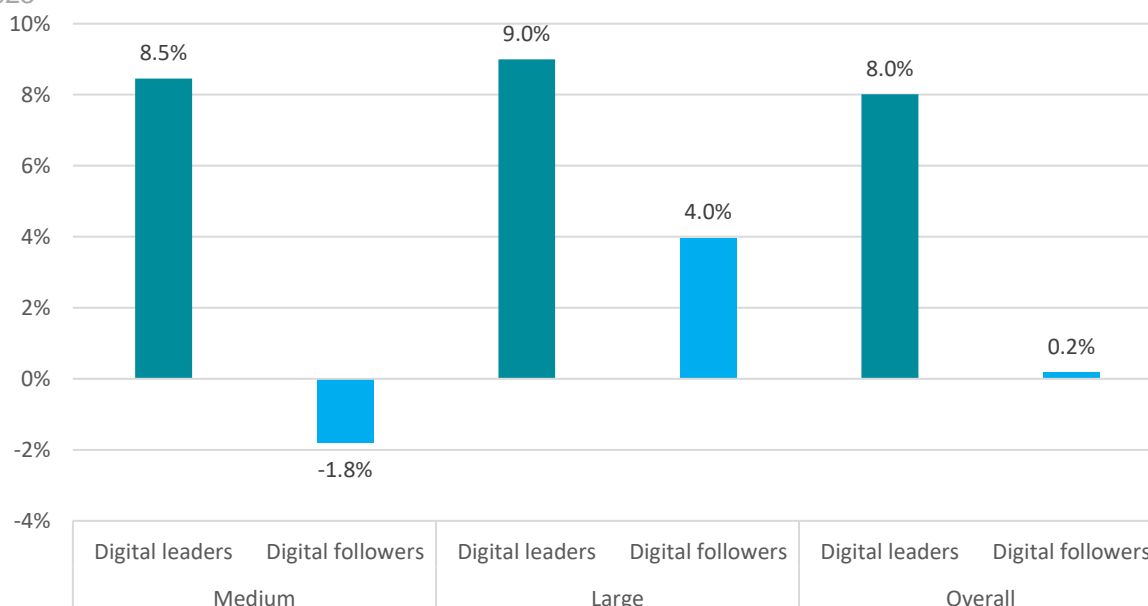
Figure 20 shows that the **difference between large digital followers and other-sized counterparts** is particularly stark, pointing once again to the relatively greater preparedness of large digital followers.

Since both small leaders and followers decreased their average GVA over the sample period, it could be suggested that **in order to grow their GVA, all small organisations should increase digitisation.**

Figure 21 and Figure 22 present a breakdown of Figure 20 by public and private sector. We estimate that private-sector digital leaders grew their GVA by 7.8 percentage points more than their follower counterparts, whereas public sector leaders did so by an average of 6.1 percentage points. In the case of GVA, therefore, **the largest returns to investment in digitisation are enjoyed by organisations in the private sector, rather than those in the public sector** as was the case with employment.

**Across the public and private sectors, therefore, we see further evidence for the overall trend discussed in the turnover and employment subsections; digital leaders consistently outperformed followers between 2021 and 2023.**

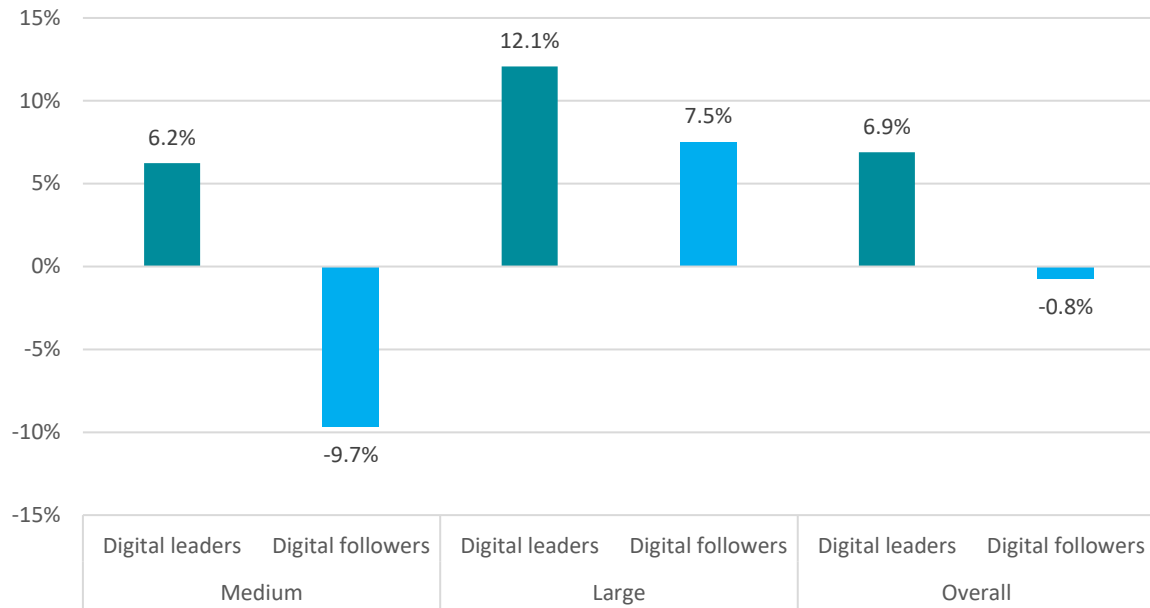
Figure 21: GVA growth rate in the private sector by firm size, digital leaders and followers (%) 2021-2023<sup>19</sup>



Source: Opinium Research, Cebr analysis

<sup>19</sup> In Figure 21 and Figure 22 we have excluded small firms. This is due to a small sample size in the case of the public sector. The sample size for small private-sector firms was large enough to make robust inferences on, but these were also excluded for the sake of 1-to-1 comparison. Given the little number of small public firms, however, dynamics for small organisations in Figure 20 likely reflect more so the pattern in private-sector small firms.

Figure 22: GVA growth rate in the public sector by firm size, digital leaders and followers (%) 2021-2023



Source: Opinium Research, Cebr analysis

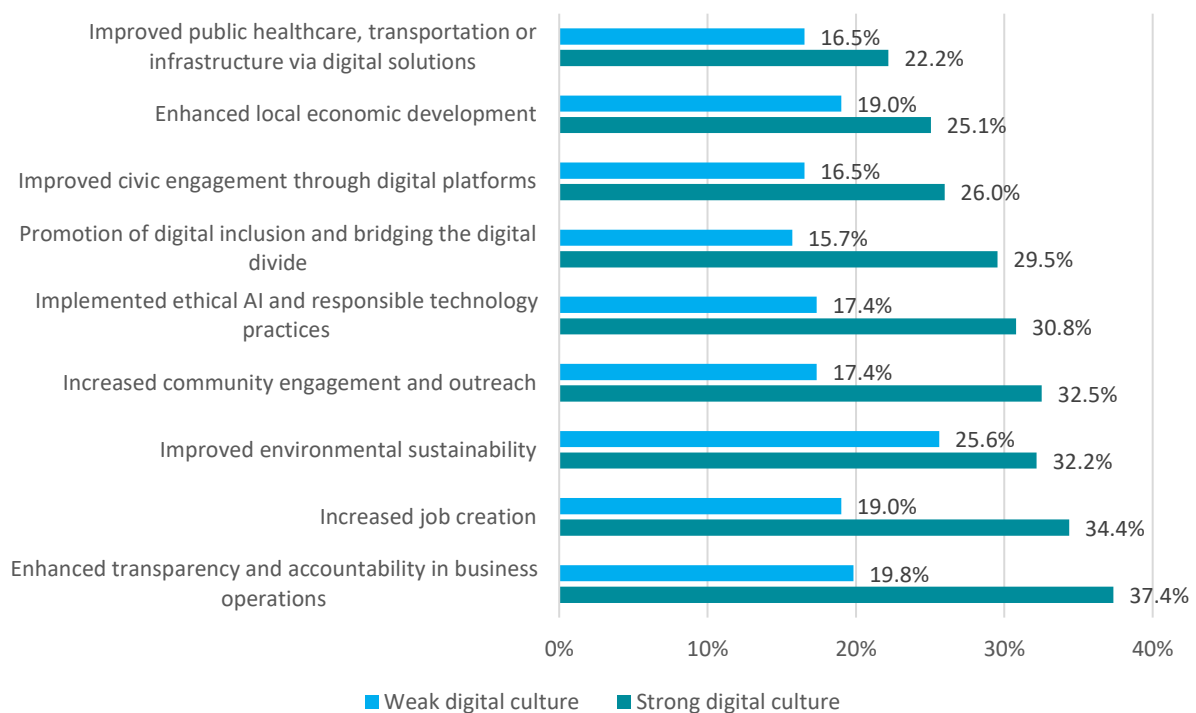
## 6. Social impact of increased digitalisation and the adoption of a digital culture

In this section we present the analysis and discussion of some of the wider social impacts of improving organisational digital cultures.

### 6.1 Perceived social impacts

We first consider the aspects of the social impact of digital initiatives which organisations identified themselves. Results are presented in Figure 23, listed by the percentage of organisations with weak or strong digital cultures who reported that their initiatives had these impacts. Impacts cover a range of common environmental, social and governance (ESG) factors.

Figure 23: Social impacts by reported strength of digital culture



Source: Opinium Research, Cebr analysis

Here we analyse results by perceived strength of digital culture, to examine whether having a strong perceived social impact correlates with an organisation believing themselves to have a strong digital culture. The relationship between strong digital cultures and perceived social impact offers valuable insights into how organisational self-perception shapes behaviour and decision-making. Organisations with strong digital cultures are more likely to report positive social outcomes, such as enhanced transparency and accountability, which were noted by 37.4% of such organisations compared to only 19.8% of those with weak digital cultures. This suggests that integrating digital initiatives into governance structures may be a key driver in promoting these values. The correlation also indicates that digital tools enable better data

management and communication, making it easier for organisations to hold themselves accountable and transparent in their operations.

However, it is also plausible that the reverse is true. Organisations that have strong digital infrastructures may naturally find it easier to foster transparency and accountability. This could be because digital tools streamline processes, improve access to information, and enable real-time tracking of business activities, thereby reinforcing these principles. Furthermore, the data reveals that organisations with strong digital cultures are more likely to report job creation (34.4% vs. 19.8%), corroborating our finding in Section 5 that those organisations with strong digital cultures are experiencing more growth, on average, than those with weak cultures. Strong digital cultures, therefore, appear to promote both operational efficiency and social responsibility, enhancing the organisation's overall impact.

Only 32.2% of organisations with strong digital cultures reported that their digital initiatives had improved their environmental sustainability, as did only 25.6% of those reporting weak digital cultures. Digital technologies can enhance organisational environmental sustainability by optimizing resource use, reducing waste, and minimizing energy consumption. Tools like AI, Internet of Things, and data analytics enable more efficient supply chains, smarter energy management, and predictive maintenance, reducing emissions and environmental impact. Additionally, digital platforms can facilitate remote work and digital collaboration, cutting down on travel-related carbon footprints, while cloud-based solutions reduce the need for physical infrastructure, further supporting sustainability efforts. It is therefore very surprising that so few respondents were improving their sustainability with digital tools and policies, and suggests there is room for improvement in this area across the board.

Organisations with a strong digital culture are also more likely to integrate digital tools and strategies that enable greater community engagement and digital inclusion. This could mean adopting technologies that make it easier to reach underserved communities or those who are digitally excluded, such as through accessible digital platforms, online services, or digital literacy programs. A weak digital culture, on the other hand, tends to result in a lower focus on these aspects, leading to missed opportunities for wider societal benefits.

Digital inclusion is particularly critical, as it ensures that everyone—regardless of socioeconomic status, age, or digital skills—has access to the opportunities provided by technology. By contrast, a weak digital culture may perpetuate inequalities by not addressing these barriers. Long-term investment from both public organisations and private businesses can improve engagement with employees, customers and receivers of public services, engendering greater trust, so they are important aspects of creating a strong, responsible digital culture.

In healthcare, the advantages of digital inclusion are becoming more evident. Telemedicine has become a lifeline for people in remote or underserved areas, providing them with access to healthcare professionals without the need for travel. Digital health tools enable patients to monitor their conditions from home, reducing the burden on healthcare systems and improving outcomes. Moreover, access to online health information empowers individuals to make

informed decisions about their health and well-being, promoting preventive care and healthier lifestyles.<sup>20</sup>

Education is another area where the benefits of digital inclusion are particularly striking. The internet is an unparalleled resource for learning, providing access to a wealth of information and educational materials. This democratisation of knowledge helps bridge the gap between privileged and underserved communities, offering equal opportunities for academic growth.<sup>21</sup> Beyond formal education, the digital world encourages lifelong learning, allowing people to acquire new skills and adapt to the structural changes across industries.

On a broader societal level, digital inclusion plays a key role in fostering social equity.<sup>22</sup> This is especially important for low-income families, rural populations, the elderly, and other groups that may be at risk of being left behind in the digital age.

## 6.2 Working environment and location

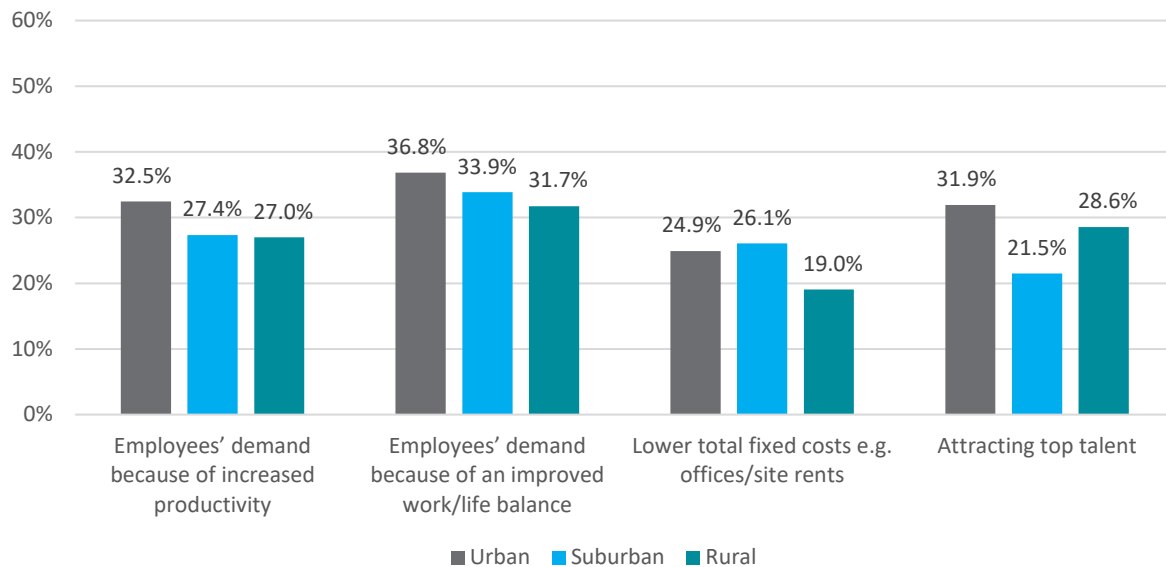
Digital technologies also have wider social effects in how they enable organisations in different geographies to conduct business or provide services. Figure 24 shows a selection of motivations for organisations to improve their digital technology adoption, split by main office location: urban, suburban, or rural. Urban organisations were slightly more likely than suburban and rural organisations to report that they were motivated to expand their digital capabilities in response to employee demands for better work-life balance and in order to improve their own productivity.

20 Sieck, C.J., Sheon, A., Ancker, J.S., Castek, J., Callahan, B. and Siefer, A., 2021. Digital inclusion as a social determinant of health. *NPJ digital medicine*, 4(1), p.52.

21 Helsper, E., 2008. *Digital inclusion: an analysis of social disadvantage and the information society*. Department for Communities and Local Government.

22 Reisdorf, B. and Rhinesmith, C., 2020. Digital inclusion as a core component of social inclusion. *Social inclusion*, 8(2), pp.132-137.

Figure 24: Employee-related motivations for improving digital capabilities, by office location



Source: Opinium Research, Cebr analysis

We find an interesting trend around the effect of digital technology of the hiring power of organisations. Suburban organisations are the least likely to be motivated by the potential of technology to make attracting top talent easier, with only 21.5% reporting that they have improved their use of digital technology for this reason. This compares to 28.6% of rural organisations and 31.9% of urban organisations. Digital technologies have significantly raised labour productivity, giving employees greater bargaining power to negotiate improved working conditions. Hybrid working, for example, reduces time spent commuting and lowers childcare costs, while automation and artificial intelligence (AI) reduce manual tasks, enabling workers to focus on more strategic activities. Urban organisations, often larger and better resourced, are more likely to implement digital tools to meet employee demands for better work-life balance and to increase productivity.

Digitalisation has also reshaped the recruitment landscape in rural and smaller organisations. While suburban companies are less likely to improve digital technology for recruitment, possibly due to existing advantages in attracting talent or fewer resources, rural and urban organisations are increasingly using digital tools to compete in the labour market. Rural organisations, for instance, can attract top talent by offering 100% remote-working positions, appealing to skilled workers seeking flexibility. This expands the talent pool and levels the playing field for smaller companies, promoting economic activity in less urbanised areas. Digital recruitment platforms and cloud-based tools allow businesses to hire based on skill and fit, rather than geographic location, benefiting both employers and employees through increased flexibility and improved work-life balance. This is reflected in the fact that more rural organisations than suburban organisations sought to benefit from digital technologies for hiring than suburban organisations.

The social impact of this digital transformation is profound. Remote and hybrid working models allow employees to better manage family commitments, particularly for women,<sup>23</sup> and reduce commuting stress. Automation and AI not only improve productivity but also elevate job satisfaction by allowing workers to focus on higher-value tasks. These benefits contribute to a more inclusive and flexible workplace across all geographies, with rural organisations in particular no longer at a disadvantage when competing for talent. Urban organisations, with their larger size and greater resources, are often early adopters of these technologies, motivated by both productivity gains and employee demands. In contrast, suburban and rural organisations adapt according to their unique challenges but still reap the wider benefits of digitalisation in the workplace.

Section 4.2 discussed aspects of the relationship between strong digital cultures and employee digital skills. However, upskilling employees also has wider social benefits. Digitally skilled employees contribute to a more dynamic and competitive economy. As businesses integrate advanced technologies, they operate more efficiently and can expand into new markets, driving productivity and innovation. Cebr previously found that for every £1 invested in digital inclusion, the economy receives a £9.48 return in additional economic output.<sup>24</sup> When employees possess strong digital skills, they can help businesses thrive in an increasingly tech-driven world, resulting in economic growth, job creation, and enhanced global competitiveness for entire countries.

In addition, as employees in various sectors become digitally proficient, they can help modernize public services and industries that are crucial to everyday life, such as healthcare, education, transportation, and government services. For instance, digitally upskilled healthcare workers can implement telemedicine solutions, making healthcare more accessible to rural and underserved communities. In education, teachers with strong digital skills can introduce new learning technologies, enriching the educational experience and making learning more interactive and inclusive. Overall, this contributes to better access to essential services and resources for everyone.

We begin examining these ideas by first looking at what steps respondents' organisations had taken, other than training, to ensure that their employees are future-ready in a digital world. Once again, we found that digital leaders were more likely to be pursuing steps to encourage a digital preparedness and a digital culture among their employees than digital followers. Figure 25 illustrates these results. However, in this instance, there was no significant difference between the steps taken by digital leaders and organisations with strong digital cultures. This implies that organisations are more likely to correctly account for the elements below as part of a strong digital culture, whether or not they seek to implement them themselves. Clearly, when organisations have a better understanding of certain elements of digital culture, they are less likely to misstate their achievement.

23 Arroyo, L., 2020. Implications of digital inclusion: Digitalization in terms of time use from a gender perspective. *Social Inclusion*, 8(2), pp.180-189.

24 Centre for Economics and Business Research, on behalf of Good Things Foundation, 2022. The Economic Impact of Digital Inclusion in the UK.

Figure 25: Steps taken to ensure future readiness of employees



Source: Opinium Research, Cebr analysis

Promoting collaboration and knowledge sharing was the most commonly reported step taken by digital leaders (51.0%) and by digital followers (36.7%) to foster a stronger digital culture among employees. The least commonly reported step taken by both groups was to introduce mentorship programs. Interestingly, only 38.8% of digital leaders and 28.7% of digital followers reported that they encouraged a culture of experimentation and innovation; somewhat at odds with the disruptive and innovative nature of digital technology.

Beyond individual empowerment, digitally upskilled employees contribute to a culture of lifelong learning and adaptability, which has far-reaching social implications. In a rapidly evolving technological landscape, the ability to continuously learn new skills is essential for both personal and societal resilience. When businesses invest in the digital education of their workforce, they are not just preparing their employees for current jobs, but for future roles that may not yet exist, and higher paying, more rewarding roles.<sup>25</sup> This mindset of adaptability spreads across society, creating communities that are more resilient to technological disruptions and better prepared to embrace future changes with confidence rather than fear. A society that values continuous learning is one that fosters creativity, innovation, and forward-thinking solutions to its challenges.

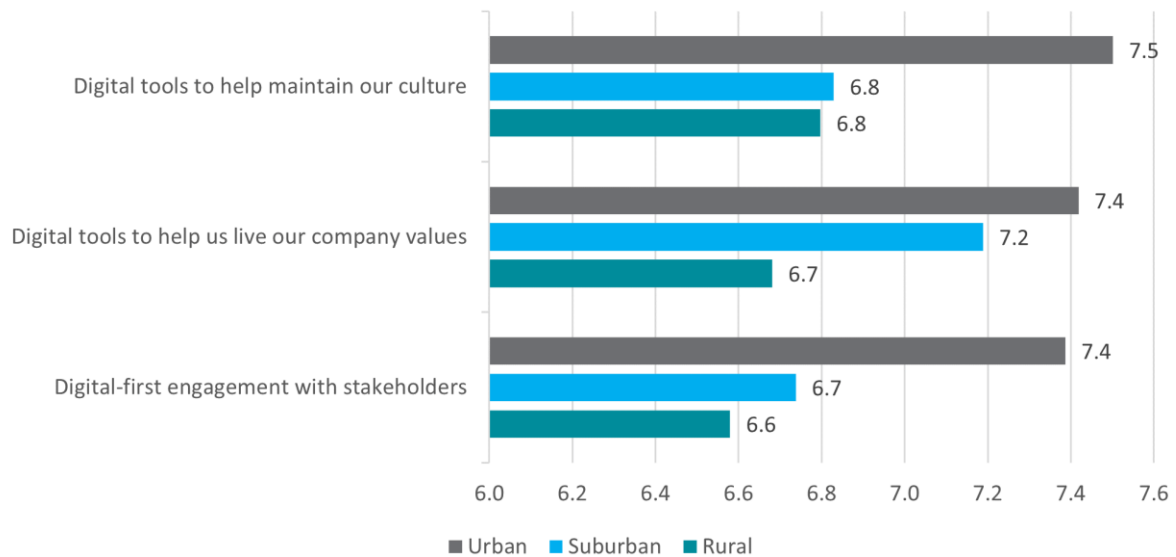
Development of a digital culture also varies with organisation location. Figure 26 shows again the level of utilisation of three categories of tools and policies relating to building a digital culture, this time broken down by urban, suburban and rural office locations. Urban organisations are moderately better than suburban and rural organisations at utilising digital technology in all three of the categories listed, with an average utilisation score of 7.4 out of 10. Such organisations are more likely to use digital tools to help maintain their culture, or to

<sup>25</sup> Lissitsa, S., Chachashvili-Bolotin, S. and Bokek-Cohen, Y.A., 2017. Digital skills and extrinsic rewards in late career. *Technology in Society*, 51, pp.46-55.



help live their company values. They are also more likely to target digital-first engagement with their stakeholders. Suburban organisations are marginally better than rural organisations, with an average score of 6.9 out of 10, compared to 6.7 for rural organisations.

Figure 26: Digital tool and policy utilisation by office location



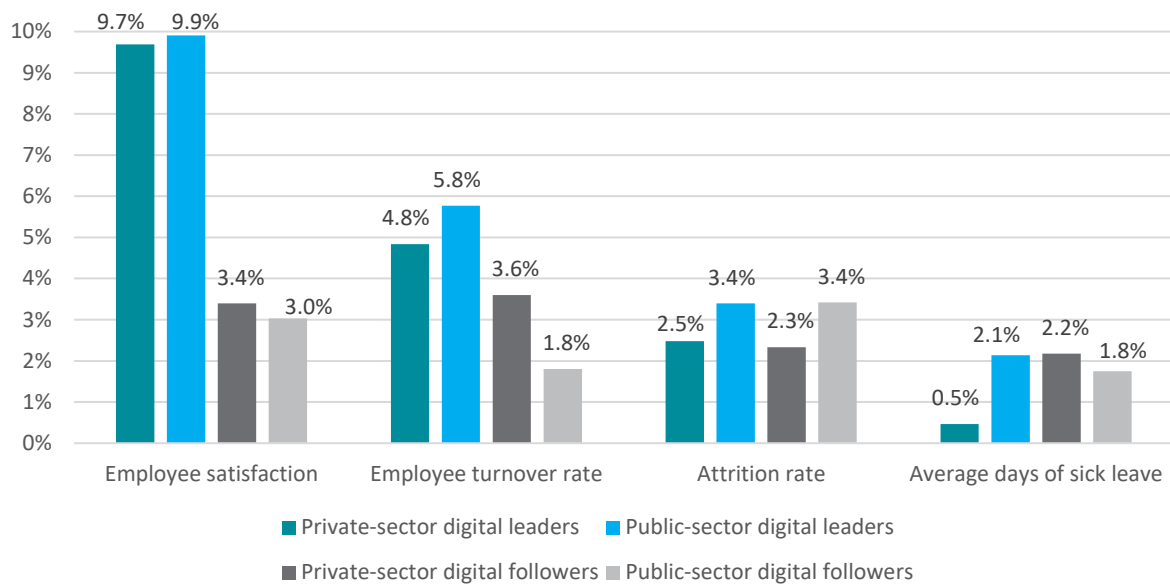
Source: Opinium Research, Cebr analysis

Urban organisations are more likely to sit within larger global organisations, and so may have more geographically dispersed teams and higher employee turnover, making digital tools essential for fostering communication, collaboration, and engagement. Urban settings also tend to have better digital infrastructure, like faster internet, better facilitating the adoption of digital platforms. In contrast, suburban and rural organisations may have smaller, more localised teams, perhaps on a single site, reducing the immediate need for such tools. Furthermore, more rural organisations may rely on face-to-face connections and relationships, making the justification for implementing digital-first engagement strategies more difficult.

### 6.3 Enhancing employee wellbeing

Figure 27 shows the average percentage change between 2021 and 2023 of several employee wellbeing metrics, split by public and private sectors, amongst digital leaders and followers.

Figure 27: Employee wellbeing metrics by digital leaders and followers, and by public and private sector



Source: Opinium Research, Cebr analysis

The key finding from these data is the disparity in employee satisfaction between digital leaders and digital followers, particularly within public-sector organisations, reflecting how effective digital transformation can reshape the employee experience. Digital leaders in the public sector, with a reported 9.9% increase in employee satisfaction, demonstrate that robust digital cultures enable organisations to streamline processes, offer flexibility, and respond more dynamically to employee needs. This is critical in the public sector, where resources are often more constrained; digital transformation can reduce administrative burdens, improve workflows, and foster a more positive work environment. Digital tools like automation, cloud computing, and employee self-service platforms can significantly improve day-to-day operations, boosting employee engagement and satisfaction. This creates a more supportive workplace that not only helps employees achieve a better work-life balance but also empowers them through access to better resources and data.

However, the paradox of rising employee turnover (5.8% increase in public sector and 4.8% increase in private sector) among digital leaders, despite increased satisfaction, suggests a more nuanced situation. One possibility is that digital leaders are better equipped to track employee performance and detect skill gaps, which may lead to more dynamic recruitment efforts. Employees in these environments could feel more empowered to seek opportunities elsewhere, particularly as the skills they acquire in digitally advanced settings make them more attractive to other employers. Additionally, turnover may be driven by the fact that employees in rapidly evolving digital organisations are less likely to have long tenure, which could distort satisfaction metrics.

In contrast, public-sector digital followers, with slower turnover and less satisfaction growth, may not be as agile in addressing employee needs, yet may retain staff longer due to fewer competitive opportunities or slower organisational changes. The marginal (0.5%) in sick days taken by private-sector digital leaders compared to other organisations underscores this agility: employees in digital-forward environments may experience better support, flexible arrangements, and healthier work cultures, reducing absenteeism. Overall, these trends

highlight the complex relationship between digital transformation, employee satisfaction, and workforce dynamics.

## 6.4 Productivity

Lastly, we discuss the relationship between digital technology and productivity. Productivity is the output (goods or services) produced by an organisation relative to input levels. It is often considered by economists on a per employee basis; this is known more specifically as labour productivity. Economic theory asserts that labour productivity is a key determinant of wage growth in the long term. If digital technology can consistently increase the amount that employees can produce, then it will have a meaningful impact on employees' wages, and thus standards of living.<sup>26</sup>

### 6.4.1 Productivity and societal benefits

Beyond this hypothetical increase in wages and standards of living, there is a more nuanced discussion around the indirect impacts of increased productivity on wider society. As organisations across the UK adopt digital technologies, they streamline operations, automate routine tasks, and utilise data more effectively, leading to substantial gains in efficiency. This boost in productivity allows organisations to produce more with fewer resources, lowering operational costs and increasing output.

As organisations become more efficient, they can deliver goods and services more quickly and cost-effectively. This can not only reduce prices for consumers but also improves the overall quality and accessibility of products and services across various sectors, from healthcare to retail. For instance, digital platforms in healthcare can optimise patient management, reducing wait times, while digital marketplaces can expand the availability of products and services to a broader audience, regardless of geographic location.

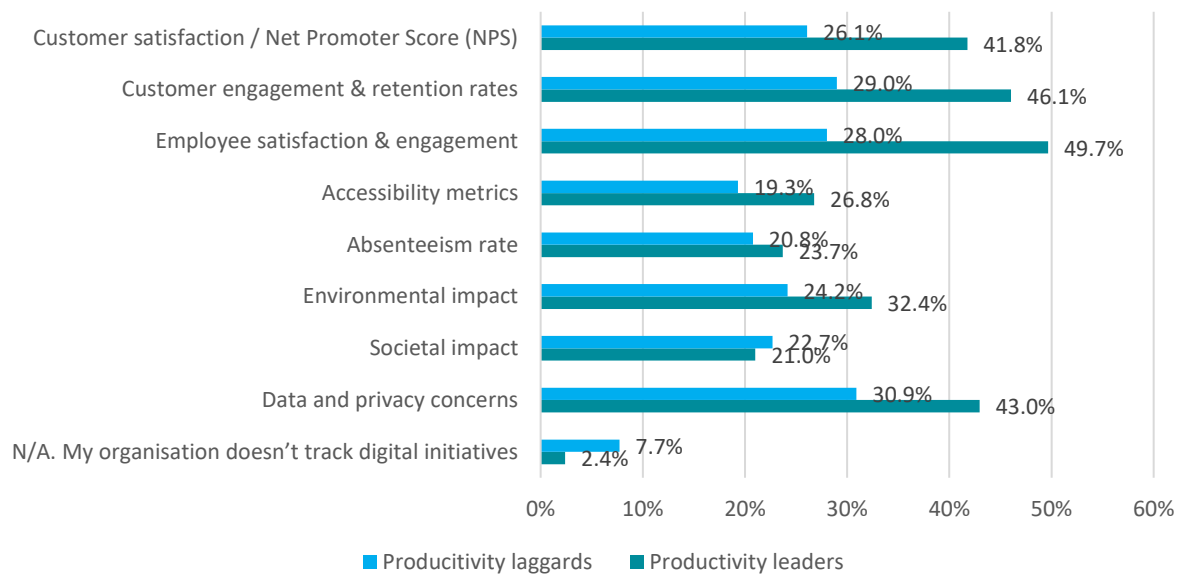
Furthermore, productivity gains from digital adoption may also lead to more personalised and responsive offerings. Through better use of data analytics or even emerging AI tools, organisations could tailor their products and services to better meet individual consumer needs, enhancing customer satisfaction and overall service delivery. This is especially critical in public services, where digital transformation can result in more efficient government operations, faster access to benefits, and more effective responses to societal needs.

For public sector and charitable organisations, this relationship is particularly intuitive: increased productivity can lead to either higher-quality services or the same level of quality at a reduced cost to the taxpayer. In sectors like healthcare and education, the positive societal impacts are clear. However, this logic extends to other types of organisations as well. In the private sector, companies selling goods and services to consumers can either improve the quality of their offerings or reduce the inputs required for production. This could translate into cost savings passed on to consumers or better provision of services to previously underserved populations, further contributing to societal benefits.

<sup>26</sup> [Productivity for prosperity: 'In the long run, it is almost everything' \(worldbank.org\)](#). Accessed September 2024.

Notably, the survey data corroborates this intuition. When analysing organisations based on their productivity performance from 2021 to 2023, a stark contrast emerges, as seen in Figure 28. Productivity leaders – those that have seen productivity increases – are more likely to track non-financial metrics, such as customer satisfaction and employee engagement, compared to productivity laggards – those that haven't seen any productivity increases. While it remains unclear whether organisations that track these metrics become more productive or if productive organisations are more inclined to track them, the data suggests that a strong digital culture, including the tracking of these broader societal metrics, is closely tied to productivity improvements.

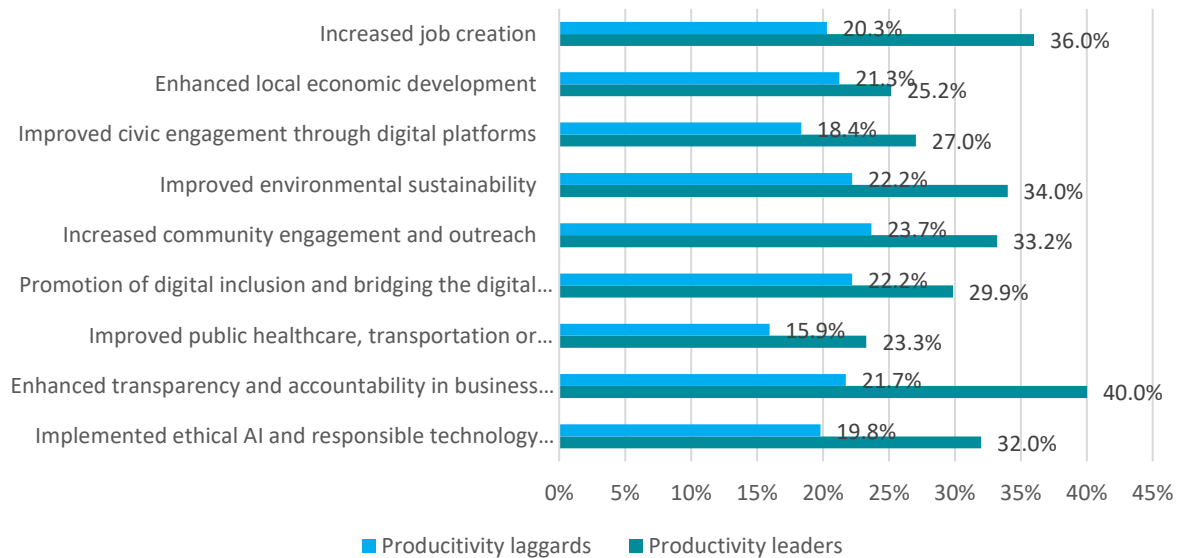
Figure 28: Proportion of organisations tracking the following metrics, broken down by productivity leaders and productivity laggards



Source: Opinium Research, Cebr analysis

Figure 29 below shows further evidence that aligns with the notion that increased productivity driven by digital adoption can yield significant social benefits beyond economic gains. It strongly suggests that organisations leading in productivity are not only focusing on operational efficiency but are also more engaged in tracking their impact on broader societal issues, from job creation to environmental sustainability and responsible technology use.

Figure 29: Proportion of organisations tracking the following metrics, broken down by productivity leaders and productivity laggards



Source: Opinium Research, Cebr analysis

Similarly, as shown in Figure 30, organisations that experienced productivity gains also saw improvements in employee and customer satisfaction levels, even though, somewhat unintuitively, these were accompanied by higher employee turnover rates and increased average sick leave days.

Figure 30: Changes to employee wellbeing metrics from 2021-2023, broken down by productivity leaders and productivity laggards

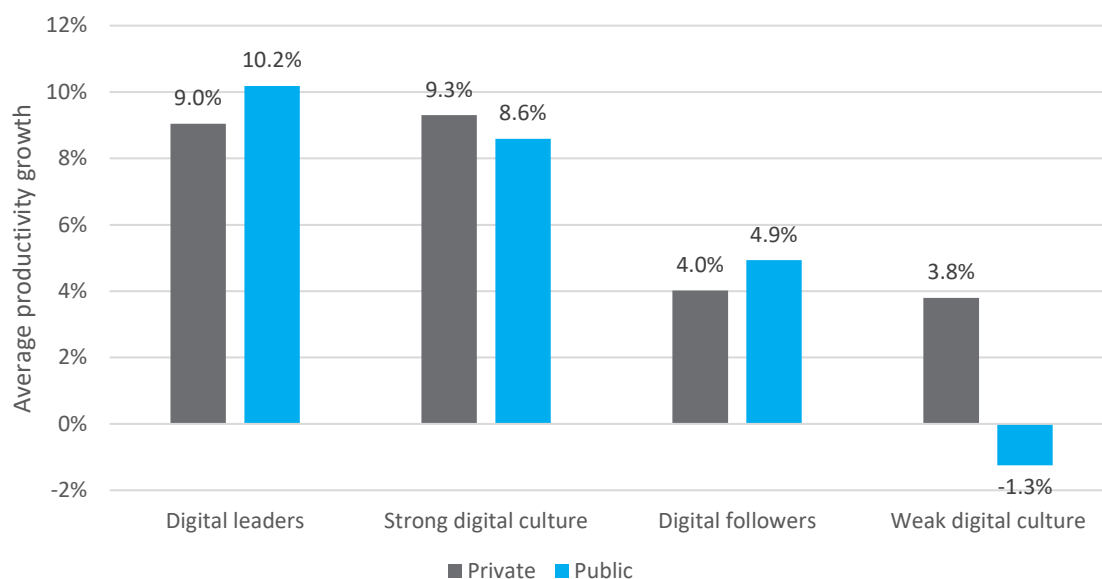


Source: Opinium Research, Cebr analysis

### 6.4.2 Trends in productivity within our survey sample

More generally, we looked also at whether organisations report increases in their productivity levels, finding a clear correlation between an organisation’s rate of digital technology adoption and their productivity growth, as shown in Figure 31.

Figure 31: Average productivity growth by reported strength of digital culture and digital leaders and followers



Source: Opinium Research, Cebr analysis

For the purpose of comparing the two characteristics, we present digital leaders and followers on the same graph as organisations with strong and weak digital cultures, although it is important to acknowledge that these are not distinct groups. The most pertinent finding from this figure is that when public-sector organisations do invest in digital technology to the same extent as private businesses, they enjoy comparable productivity gains. Public-sector digital leaders saw average productivity growth of 10.2%, while digital leaders in the private sector saw 9.0% productivity growth. This indicates the possibility that productivity differences between the public and private sectors may partially be determined by level of digital investment, confirming our findings in section 5 about the positive association between financial performance and degree of digitalisation.

**On average, having a strong digital culture or being a digital leader, was associated with over twice the productivity growth compared to digital followers or organisations with weak digital cultures.** Notably, public-sector organisations who reported weak digital cultures experienced negative productivity growth, of -1.3%. This means that employees in such organisations were producing less output in 2023, on average, than they had been in 2021. The fact that public digital leaders averaged higher productivity growth than public organisations with strong digital cultures corroborates our earlier finding that many organisations overstate their digital capabilities.

We return here to a running theme throughout the data, which is that many organisations who perform poorly on digital, financial and social metrics report that they have a strong digital culture. Now more than ever, digital technology is a rapidly changing area, and it is clear that many of our respondents, and thus many organisations throughout the UK, may be poorly equipped to take advantage of the many benefits such technology can bring.

Note that the time period which these productivity changes concern is 2021 to 2023. In 2021, the output of certain public sector organisations was particularly hard hit by the need to focus on addressing the Covid-19 pandemic. If a public sector organisation's digital capabilities

enabled its output to recover more quickly from the disruption of the pandemic, then this could explain why digital leaders and organisations with strong digital cultures saw greater productivity changes than digital followers and organisations with weak digital cultures. Indeed, quality-adjusted public service productivity grew by 6.5% in 2021, after the 14.5% decline seen in 2020.<sup>27</sup> Despite this large single-year increase, productivity did not return to pre-pandemic levels in 2021 or 2022, remaining 0.3% lower than pre-pandemic levels.<sup>28</sup> Clearly, therefore, there is significant potential for digital technologies to improve public-sector productivity.

Rising productivity in the private sector is easy to understand; each worker can produce more goods or sell more services. However, in the public sector, the impacts of rising productivity are less immediately obvious. In healthcare, for instance, the adoption of digital technologies to boost productivity has transformative effects. Shorter patient backlogs, enabled by more efficient scheduling systems, automation of administrative tasks, and streamlined communications, can reduce the time patients wait for essential treatments. Faster access to care improves health outcomes, potentially lowering long-term healthcare costs as early interventions reduce the burden of chronic illness. The cumulative effect is a healthier population, which contributes to overall economic productivity. Improved public health can also reduce the strain on social services and the workforce, creating a virtuous cycle of positive outcomes that extends far beyond the healthcare system.

*Mark Blakeman, Improvement Director, NHS England*

*“You can provide higher quality, more consistent care, more cost effectively if you do it using digital capabilities.”*

In education, productivity gains don't necessarily mean more teaching hours but a shift in how educators allocate their time. Digital tools can minimise non-teaching tasks such as administrative record-keeping, grading, and student monitoring. This allows educators to devote more time and energy to improving lesson quality and providing personalised support to students. The result is a better-educated population with skills that align more closely with the needs of a modern economy. A well-educated workforce boosts national productivity by fostering innovation and increasing the efficiency of labour markets. As educational standards rise, so do social outcomes, such as income levels and overall standards of living.

In the justice sector, rising productivity through digital technologies can improve the efficiency of the criminal justice system, particularly in managing prison populations. By optimizing case management and streamlining the judicial process, courts can process cases faster, which may reduce overcrowding in prisons and improve conditions for rehabilitation. Efficient rehabilitation programs, made possible by better data tracking and case management systems, can lower recidivism rates. This not only reduces the financial burden on the justice system but also reintegrates individuals into the workforce, further boosting economic productivity and social stability. In all these areas, the ripple effects of rising productivity ultimately create a

<sup>27</sup> [Public service productivity: total, UK, 2021](#), Office for National Statistics (ONS), 26 March 2024.

<sup>28</sup> [Public service productivity, UK: 1997 to 2022](#), Office for National Statistics (ONS), 17 November 2023.

virtuous cycle of improved public services, higher standards of living, and long-term societal benefits.

*Matthew Coley, Head of IT, Ministry of Justice:*

*“A lot of the [public] sector has replicated the paper world in the electronic form... rather than looking at how we can innovate, they replicate historical ways of working.”*



## 7. Appendix

### Survey sample summary statistics

Variable		N (base: 1000)
Size	Small	124
	Medium	286
	Large	589
Sector	Private sector	789
	Public sector	183
	Charitable / voluntary sector	28
	Net Private/Charitable	817
Industry	Accommodation & food services	16
	Agriculture, forestry & fishing	4
	Arts, entertainment, recreation & other services	12
	Automotive/Motor trades	16
	Business administration & support services	25
	Construction	51
	Education	44
	Financial & insurance	229
	Information & communication	218
	Health	43
	Manufacturing	84
	Mining, quarrying & utilities	7
	Professional, scientific & technical activities	71
	Property	14
	Public administration & defence	9
	Retail	69
	Transport & storage (incl. postal)	27
	Wholesale	3
	Other	58
Region	North East	36
	North West	107
	Yorkshire & Humberside	77
	East Midlands	45
	West Midlands	94
	East of England	51
	London	338
	South East	112
	South West	45
	Wales	32
	Scotland	42
	Northern Ireland	21
Urban	Rural	69
	Suburban	328

	Urban	600
Years in business	Less than 3 years	19
	3-10 years	446
	11-20 years	249
	21+ years	274

