



headspring
executive development

ARTIFICIAL INTELLIGENCE ON THE HORIZON

How professionals in Europe and UAE understand
the imminent age of AI in the workplace | May 2019

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BUSINESS SCHOOL

The background of the cover is a faded, orange-tinted image of a city skyline. In the foreground, a person is visible, looking towards the camera. The overall aesthetic is professional and modern.

ARTIFICIAL INTELLIGENCE ON THE HORIZON

A REPORT ON HOW PROFESSIONALS IN
EUROPE AND UAE UNDERSTAND THE
IMMINENT AGE OF AI IN THE WORKPLACE.

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INTRODUCTION

Though it is already having a significant impact in numerous sectors, Artificial Intelligence, or AI, is in its infancy of influence. At this stage the global competition for leadership in AI technologies is accelerating. From government to business to schools, the appetite for growth and development of AI capability is expanding exponentially. Advocates imagine the financial, political and social gains to be great. Detractors believe the losses to be even greater. Regardless of view, an AI-driven world is on the horizon, and nobody truly knows how it will look.

Against this backdrop of expectation and uncertainty, Headspring, the executive development joint venture of the Financial Times and IE Business School, has commissioned research into current professional attitudes to AI in Europe and the UAE.

Carried in partnership with YouGov, the research compiles the results of over 4,500 interviews with office workers in seven countries. The interviews were held between March and April 2019 in the United Kingdom, Germany, France, Denmark, Sweden, Spain and United Arab Emirates.

CONTEXT

The field of 'artificial intelligence' dates back to 1956 and a workshop held on the campus of Dartmouth College. At the time, MIT cognitive scientist Marvin Minsky prophesied, "Within a generation [...] the problem of creating 'artificial intelligence' will substantially be solved."¹

The problem has proved more challenging to solve than Minsky predicted, but with unprecedented interest and investment, AI is now poised to become one of the most influential technologies of our time. Facilitated by the imminent spread of 5G and its associated effects, AI may soon realise science-fictional capabilities at scale.

Integrated networks of autonomous vehicles and remote real-time surgery may grab headlines and capture the imagination, but AI is set to touch the quotidian aspects of every industry. It is an exciting prospect for business leaders who hope to capitalise on AI's potential for reduced operational costs, increased efficiency, higher revenue and better customer experience.

However, leaders also have concerns. The recent 2018 Pulse Report - also produced by Headspring - revealed a leap in

the number of executives who see cybersecurity, big data and digital transformation as priorities in achieving their business goals.² AI is embedded in all three of these domains.

Competition for territory in AI is also spreading beyond China and the USA to Europe and the Middle East. In December 2018 the European Commission announced that member states and the commission were to work together to boost artificial intelligence "made in Europe"⁵. Additionally, every country polled in this study is actively pursuing national and private AI strategies.

GAPS IN PERCEPTION

There may, however, be a growing divide between how senior leaders and the rest of their organisations see AI. This gap is one of the findings to emerge from this Headspring poll of attitudes to AI in the workplace commissioned from YouGov plc, an international internet-based market research and data analytics company. The objective of the study was to understand the impact professionals believe AI will have on their jobs, and how businesses could ensure the most effective adoption of the technology.

1. "AI: The Tumultuous History of the Search for Artificial Intelligence" Daniel Crevier, Basic Books, 1994.

2. Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions - Coordinated Plan on Artificial Intelligence (COM(2018) 795 final); <https://ec.europa.eu/digital-single-market/en/news/coordinated-plan-artificial-intelligence>.

5. World Economic Forum Global Competitiveness Report 2018, Klaus Schwab, pages 9 and 26-28, <http://www3.weforum.org/docs/GCR2018/05FullReport/TheGlobalCompetitivenessReport2018.pdf>

INTRODUCTION

This white paper seeks to elucidate and connect the major themes to emerge from the international survey. These include:

- **Knowledge and Trust**

The relationship between understanding of AI and trust of AI. What role professionals believe AI will have in affecting diversity and positive change for them and their organisations.

- **The Implementation Gap**

How office workers see current and future readiness for AI implementation at a personal and organisational level, and what initiatives they believe need to be put in place to prepare for AI.

- **Perceived Benefits**

What value, if any, professional employees see for AI in their work, and what they believe needs to change in order to realise those benefits.

OBJECTIVES

Covering the UK and six more countries, this study helps readers achieve clarity on the current attitudinal landscape of AI in the workplace. It assists decision makers in identifying potential communication, learning and development gaps that may be hampering active uptake of AI in their organizations.

The key learnings in this paper invite business leaders to better align their teams and workforces in making AI initiatives more successful.

Headspring's review of professionals' attitudes to AI has revealed some clear distinctions between different segments of the workforce. It is essential that executives bear these disparities in mind when leading education and training initiatives in their organisations.

METHODOLOGY AND DEFINITION OF AI

This survey has been conducted using an online interview administered to members of the YouGov UK panel of 800,000+ individuals who have agreed to take part in

surveys. Figures are based on the responses of 4,515 respondents across multiple industries in seven countries: the United Kingdom (2,010 respondents), Sweden (251), Denmark (251), France (501), Germany (501), Spain (501) and the United Arab Emirates (501).

For this study, "Artificial Intelligence (AI)", is defined as:

'THE THEORY AND DEVELOPMENT OF COMPUTER SYSTEMS THAT ARE ABLE TO PERFORM TASKS WHICH NORMALLY REQUIRE HUMAN INTELLIGENCE, SUCH AS VISUAL PERCEPTION, SPEECH RECOGNITION, DECISION-MAKING, AND TRANSLATION BETWEEN LANGUAGES ETC.'

The definition of artificial intelligence used in this poll was necessarily broad, but AI can be thought of as narrow AI or general AI. Narrow AI describes machine learning and ways in which systems are taught to perform specific tasks without being explicitly programmed to do so. It is the form of artificial intelligence that is prevalent at the moment. It drives virtual assistants, connects drones and guides self-driving cars.

Artificial general intelligence (AGI) is very different. AGI is the adaptable intelligence possessed by humans that makes us capable of learning how to perform vastly different tasks. It does not yet exist in machines, but it is the image of AI that persists in popular culture. Any person confusing these two types of intelligence might have understandable doubts about AI's value to their career, or the company's ability to implement AI anytime soon.

EXECUTIVE SUMMARY

Artificial intelligence (AI) does not have likes, dislikes, hopes or fears. Humans certainly do. Particularly in response to the integration of AI and work. Our research reveals that attitudes

to AI in the workplace are in some ways surprisingly consistent, while in others they vary markedly according to region, age, gender and organisational seniority.

KEY FINDINGS

AI is well-known, though knowledge is mixed.

50% of professionals know a fair amount to a lot about AI, 48% say they have moderate to poor understanding. Only 2% have never heard of AI before.

Humans still trust humans more.

More than half of office workers would trust a decision made by a human more than a decision made by artificial intelligence. 27% would trust them the same. Less than one fifth would trust an AI decision over a person's. Trust in human decision-making is highest among C-level executives.

The robots are coming! But that's not bad.

Among professionals, the prevailing association with AI is that it creates systems and machines that will replace human jobs. However, the second most widely-held belief about AI is that it will help people make better decisions. Fear of AI-related job redundancy is rare (less than 10%).

AI is no better than humans at fostering diversity.

More professional office workers disagree with the suggestion that AI will help create a more diverse workforce. 40% believe it will contribute to greater diversity, but one in six don't know.

Employees see themselves as more prepared than their employers.

Overall, professionals feel unprepared for the arrival of AI. Only 43% already use AI or feel prepared to use it within the next 12 months. However, confidence in their company's AI-readiness is far lower. Almost two-thirds think that their employer is not prepared to adopt AI within the next year.

REGIONAL SUMMARIES

In the UK, attitudes to AI are relatively negative. 55% of survey participants acknowledge that they know little to nothing about AI; only 2% believe AI will help people's career prospects. Over half trust human decisions over AI decisions, with two-thirds of senior executives feeling this way. 100% of CEOs have greater trust in people than machines. AI is showing high penetration and confidence in the financial services sector, but low awareness and trust in the pharmaceutical and healthcare industries. Seniority and industry are the most influential factors in predicting a UK professional's attitude to AI.

Most professionals in **Denmark and Sweden** feel that they and their employers are unprepared to adopt AI within the next 12 months, but attitudes to AI are positive. Millennials are considerably more optimistic than most. Of all countries reviewed, Sweden shows the highest levels of existing AI knowledge. Danish attitudes to AI diverge significantly between genders, but men and women are aligned on questions of diversity, impact on work quality and AI's ability to do human jobs. In Sweden, seniority does not have a significant impact on employee attitudes to AI. In Denmark, more than half of professionals believe in AI's potential to foster diversity.

EXECUTIVE SUMMARY

In Germany, professionals have low regard for AI's potential to improve diversity in their workforces. Three-quarters of professional respondents don't use AI. Only 18% of these feel personally prepared to use AI within the next year. German CEOs are the least AI-engaged of European CEOs and the least enthusiastic about its potential impact. Only 8% of German office workers feel that AI might make their job roles redundant, though more than double that number of financial services workers believe so.

Almost two-thirds of **French** office workers know a lot or a fair amount about AI, with a notable discrepancy in gender (67% of men claim this level of knowledge, while only 53% of women feel the same). Unusually, the age group most likely to know about AI is 55 years or older.

This may correspond with the high levels of knowledge found in senior leadership. France has the highest proportion of CEOs who know a lot about artificial intelligence, and French CEOs are the most positive of all about their ability to work with AI. 84% currently use or feel prepared to use the technology within the next 12 months. Only 29% of general employees feel the same.

In Spain, the more senior a professional is, the more likely he or she is to feel enthusiastic, prepared or trusting about AI implementation. Of all European nations surveyed, Spaniards are the most concerned about AI's threat to their job security. However, Spanish professionals rank highest for the belief that AI will make their work more efficient and of better quality. Only 17% think these improvements will translate into improved job opportunities.

Professionals in the United Arab Emirates show high belief in the potential benefits of AI, though the country also has the highest number of workers who have never heard of AI, especially among women. Gender is also a primary determining factor in other survey outcomes. Chief execs in the UAE are unique among CEOs in seeing business development as the best potential benefit of AI. UAE is the only region in which the belief that AI leads to the replacement of human jobs is not the strongest, even though the expectation of AI-driven job redundancy is highest.



An aerial photograph of London, England, taken during the "blue hour" of sunset. The River Thames flows through the center of the frame, with the London Bridge and Tower Bridge visible. The city skyline is silhouetted against a sky of deep blues and oranges. The text "REGION 1: UNITED KINGDOM" is overlaid in a light blue, sans-serif font in the middle of the image.

REGION 1:
UNITED KINGDOM

REGION 1: UNITED KINGDOM

OVERVIEW

- Office workers in the UK have significantly more trust in humans than artificial intelligence, though more than half admit to knowing not very much to nothing at all about AI.
- Seniority within an organisation is one of the strongest predictors of an individual's familiarity with AI.
- UK professionals generally see their organisation and themselves as unprepared to adopt AI.

KNOWLEDGE AND TRUST

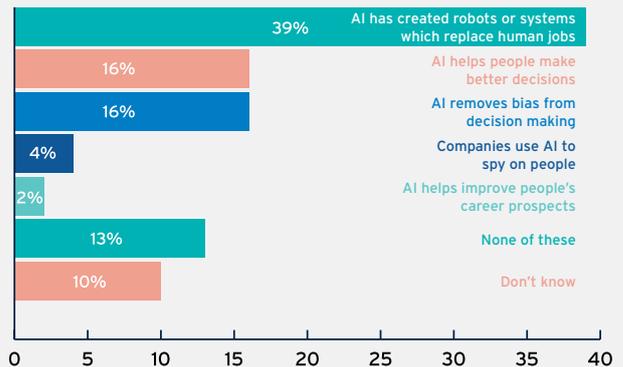
Artificial intelligence may have been a formal field of study since the 1950s, but the notion of autonomous machines has been a part of human consciousness since the early Greeks, at least. Mythic automatons like Talos saw humans projecting our living intelligence onto robots, a theme that has flourished in science fiction writing since the late 19th Century. One of the primary narratives has been a dystopian one: machines become sentient and enslave humanity.

It is a powerful idea that continues to permeate the public discourse around artificial intelligence. For every prophet of Singularity hailing the dawn of AI and human integration, there is a sceptic warning of the perils of giving machines consciousness.

Headspring's UK survey results may not express this level of suspicion, but they do suggest that professionals feel some doubt over the value of AI.

39% of UK respondents believe AI will take away humans' jobs, while only 2% agree with the suggestion that AI helps improve people's career prospects. Over half (51%) say they would trust decisions made by a human over decisions made by AI, while only a quarter say they would trust human and AI decisions equally.

Which one, if any, of the following statements do you associate the most with Artificial Intelligence?



Every CEO interviewed was more likely to trust human-made decisions over those made by AI systems. Others holding senior positions emphatically support this sentiment. MD's (71%), Partners (68%) and other board level managers/directors (60%) agree that AI decisions are less trustworthy.

However, what initially looks like mistrust may be a misunderstanding (in the case of general respondents) or educated judgement (in the case of senior executives). 55% of survey participants acknowledge that they know little to nothing about AI. This is a vital statistic as it impacts how respondents interpret the term 'artificial intelligence' when building opinions about the technology.

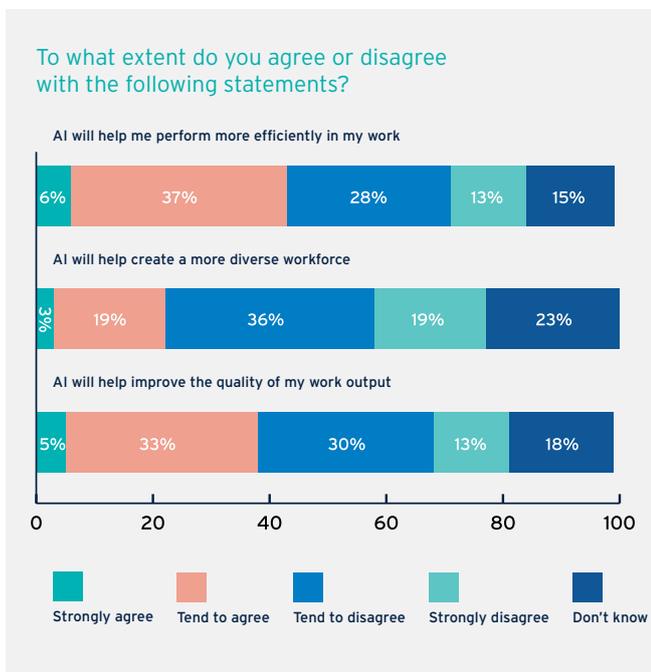
Chief executives seem to have the most knowledge on AI, with 100% saying they know a lot or a fair amount. Chairpersons follow closely behind - 75% agree. The other senior roles who admit to having good knowledge of AI include other board level managers/directors (52%), MD's (51%) and middle managers (46%).

REGION 1: UNITED KINGDOM

This level of understanding would enable the individual to discriminate between pop culture AI and real AI, which for now is sophisticated machine learning. Such a distinction may explain why senior execs are less trusting of AI's choices because they appreciate the potential failings of machine-learned decision-making.

Women seem to be more concerned about AI taking the job of a human, with 45% associating most strongly with the idea that AI has built systems to do just that. Only 35% of men agree. Men (20%) are more likely than women (10%) to think AI will help elevate people's decision making. Also, more men (45%) than women (40%) believe AI will help them perform more efficiently in their work.

50% of UK men say they know a fair amount to a lot about artificial intelligence. Among women, the number is closer to 32%.



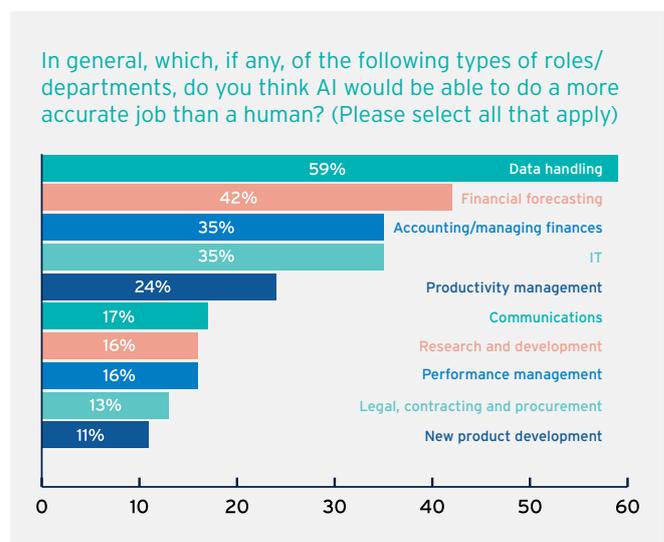
AI in job roles appears linked to age. The older the professional, the less likely he or she is to work with AI currently. The younger the candidate, the higher the

employee's feeling of preparedness for incorporating AI into his or her role. 29% of 18-24 year-olds feel ready to use AI within the next 12 months.

Chief executives and other senior role players tend to diverge sharply from the consensus. No CEOs, for example, agree with the quarter of respondents who think that implementing AI will reduce the number of people in their department. 71% of chief execs feel that AI will help them perform more efficiently at work - significantly more than the 44% agreement rate found amongst middle management. More than half non-executive directors believe AI systems can replace some human jobs.

Significant differences exist between industries too.

Overall, 42% of respondents believe that the job second-most-likely to be improved through AI is financial forecasting. Among financial sector workers, the sentiment is even stronger - 49% believing that AI will soon replace humans when it comes to financial forecasting. However, they are generally more positive about the integration of artificial intelligence: over half (56%) of finance sector workers think AI will help them perform their job more efficiently and 48% believe it will help them improve the quality of their work.



REGION 1: UNITED KINGDOM

Half do not feel prepared for the adoption of AI, which explains why 47% advocate better management of internal communications to ease any potential negativity.

The medical industry is one of the most vaunted sectors in anticipated AI development. Yet, 62% of UK workers in the medical and health services admit to not knowing about AI. 85% don't currently use any kind of AI in their role. 62% feel unprepared to use AI in the next 12 months, and 41% regard management of ethics as a top priority in any AI system.

One of the purported benefits of AI commonly named by champions of the technology is the removal of bias in decisions like recruitment. The belief is that artificial intelligence is neutral, though numerous recent cases have highlighted the potential for prejudice in AI operations.³

Headspring's poll of UK professionals suggests that organizations have much work to do in earning employee trust in this area. Only 16% of respondents are convinced that AI removes bias in decision-making. Only 16% believe AI leads to better decisions overall.

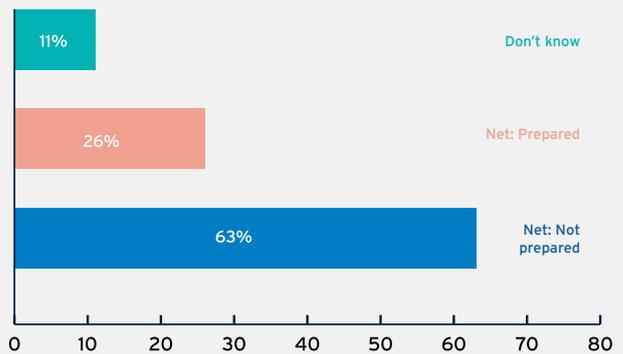
Bridging the AI knowledge gap and educating employees on the realities of artificial intelligence is a critical focus point for businesses wishing to increase uptake and support among staff.

THE IMPLEMENTATION GAP

Senior decision makers' interpretation of AI in the narrow sense may also account for the vast discrepancy in expectations around implementation.

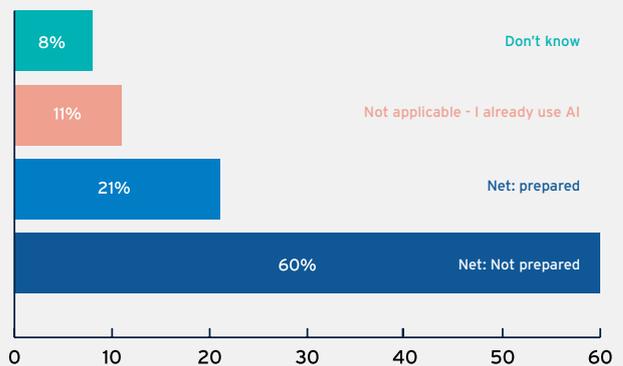
86% of UK CEOs interviewed believe that their organization will be ready to adopt AI systems within the next 12 months. In sharp contrast, 63% of UK professionals believe their company will not be prepared.

In general, how prepared, if at all, do you think your current employer would be to adopt AI systems in the next 12 months?



Though this could relate to a difference in understanding of the term 'AI', it also indicates a marked difference in confidence. At least 35% of UK professionals believe AI will require that their role adapts or changes, or that they acquire new skills. However, 60% do not feel personally prepared for AI's introduction into their role.

In general, how prepared, if at all, do you think you would be to use AI systems as part of your current role in the next 12 months?



REGION 1: UNITED KINGDOM

The Headspring poll offers leaders suggestions on how to tackle the implementation gap. To roll out AI in the next 12 months, these are the five things UK workers say their employer will have to do:

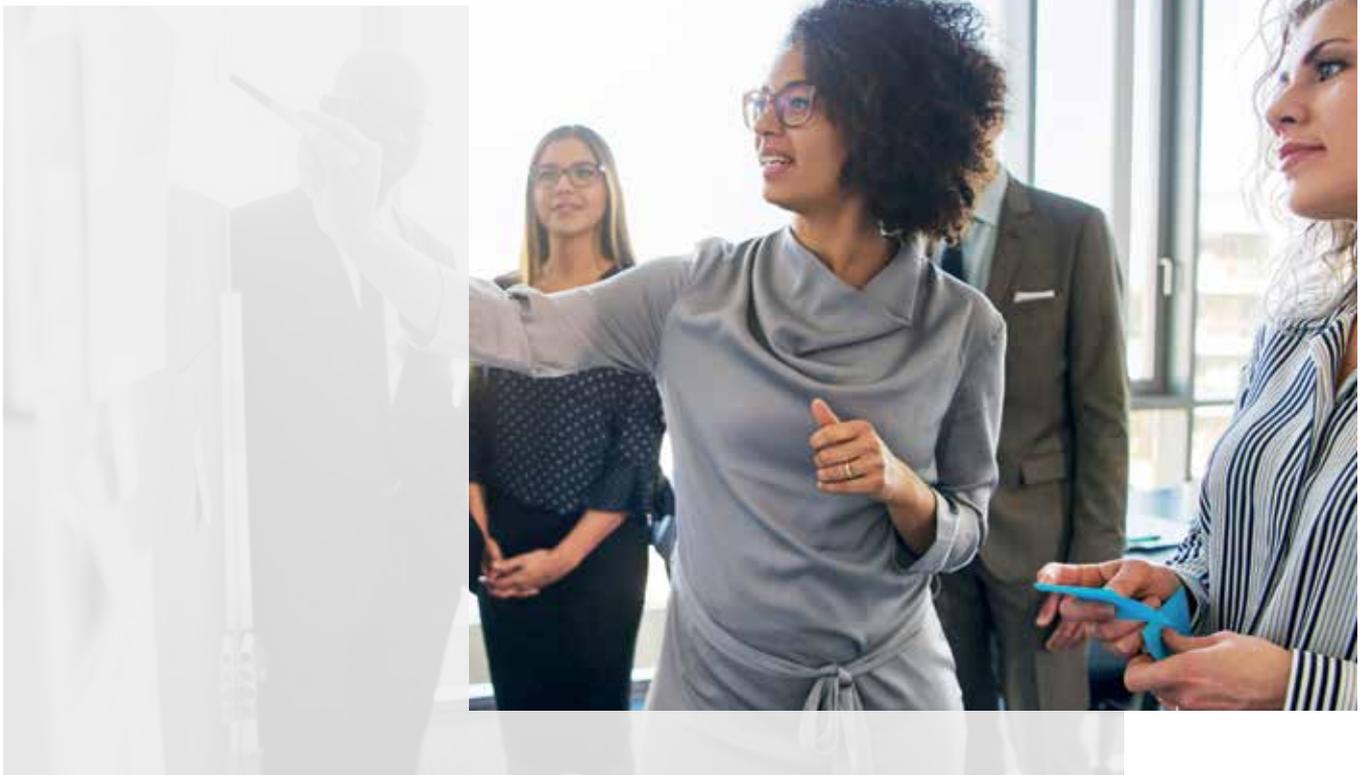
1. Invest in new technology and infrastructure
 2. Establish new processes to manage the ethics of AI
 3. Manage internal comms to ease any potential negative perceptions
 4. Create a new role to manage AI systems
 5. Invest in more people, development and training
6. After technological upgrades, the biggest needs are seen in ethics, communications, leadership, and training and development.

PERCEIVED BENEFITS

Should UK employers take on these recommendations and employ a leader of AI systems, or focus on communications, learning and development, they would be advised to run campaigns designed to build employee motivation.

The nation's office workers appear divided on whether AI will help them be more efficient in their role - 43% say it will, and 41% believe it won't. However, fewer than a quarter believe that introducing AI will make their work more productive or more accurate. Only 12% think that artificial intelligence will create more opportunities for them.

With perceived benefits being low, employers will need to be creative in motivating staff to engage with the necessary changes that 38% believe they will need to make, even though purely negative sentiment towards AI is rare (5% or lower think AI will negatively impact their work or cost them their job).



A dark, monochromatic photograph of a cable-stayed bridge over water. The bridge features two prominent, A-frame pylons with multiple stay cables. The foreground shows a body of water with several birds, possibly seagulls, resting on the surface. The overall scene is dimly lit, creating a moody and atmospheric effect.

REGION 2:
DENMARK AND SWEDEN

REGION 2: DENMARK & SWEDEN

OVERVIEW

Denmark and Sweden are both actively pursuing national strategies for AI. Private sector interest also appears healthy. Due to sociocultural similarities, the strategic and economic parallels between the two countries may not be surprising. However, there are many stark differences. Some of these show up in the differing attitudes to artificial intelligence between professionals in Denmark and Sweden.

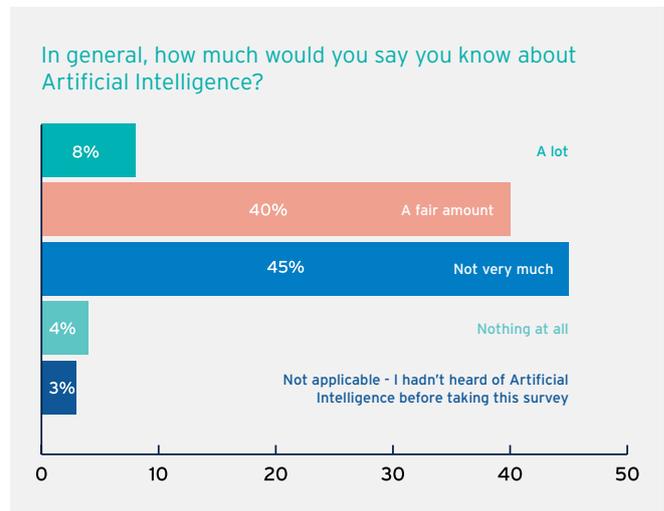
- Though most Danish professionals do not currently use AI, and half feel that their company is unprepared for AI integration, the attitude to AI is positive.
- Millennials are notably upbeat, expecting artificial intelligence to complement and improve their work; millennials also know more about AI than any other age group.
- Industries who are expected to be most impacted by AI are also those industries in which professionals feel most ready for change.

KNOWLEDGE AND TRUST

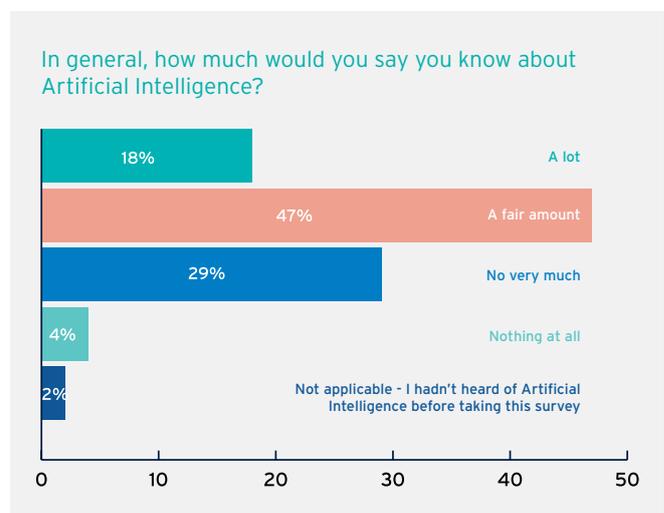
Slightly more than half of Danish professionals know 'not very much' or less about artificial intelligence. Age, gender and seniority strongly influence the 48% that know 'a fair amount' or more.

By contrast, of all countries surveyed in Headspring's analysis of workplace attitudes to artificial intelligence, Sweden showed the highest level of existing knowledge. Two-thirds of Swedish professionals say they know a fair amount or a lot about AI. This number rises to 80% when focusing on millennials (25-34 years old). Swedish millennials are also the most likely to know a lot about AI, with more than a quarter claiming this level of familiarity with the subject.

In Denmark, however, a younger age does not necessarily translate into greater familiarity with AI. Though every Danish office worker between the age of 18 and 24 interviewed for this study knew at least a fair amount about AI, 35-44 year-olds were the most likely to understand a lot about the subject. Millennials (aged 25-34) had strong opinions about the impact and value of AI but showed an almost even split in terms of knowledge. 47% knew a fair deal about AI while 49% admitted to having a weak grasp. A surprisingly high number (4%) had never heard of AI before the report.



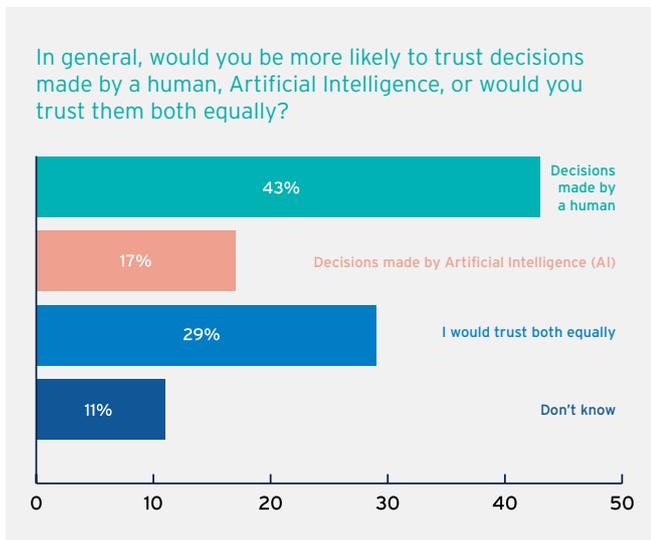
Unlike their Danish counterparts, men and women in Sweden show little gender-based difference in knowledge of AI. Equal numbers admit to knowing not very much about artificial intelligence, while only 8% more men claim to have robust to superior conversance in AI. The gender gap in Denmark is more pronounced: More Danish men than women claim to have a good understanding of artificial intelligence. 55% of men surveyed said they knew at least a fair amount about AI, while among women that number dropped to 36%. 7% of women had never heard of artificial intelligence before the survey, while among men that number was 1%.



REGION 2: DENMARK & SWEDEN

Despite this clear separation, male and female respondents in Denmark had similar responses to questions of diversity, impact on work quality and AI's ability to do human jobs. However, considerably more women associated AI with the potential loss of employment, and only 5% of them would trust decisions made by AI over decisions made by a human. Among men, 19% said they would be willing to trust an AI system's decisions over a person's.

Despite the generally high familiarity with artificial intelligence, only 17% of Swedes would be more likely to trust the decisions of an AI system over those made by a human. However, a quarter of business executives say they would accept AI decisions over decisions made by colleagues. This level of trust was not evident in Danish senior management, though. Four times more Danish executives, the majority of whom say they know at least a fair amount about artificial intelligence, would trust a human's decisions over those made by AI.

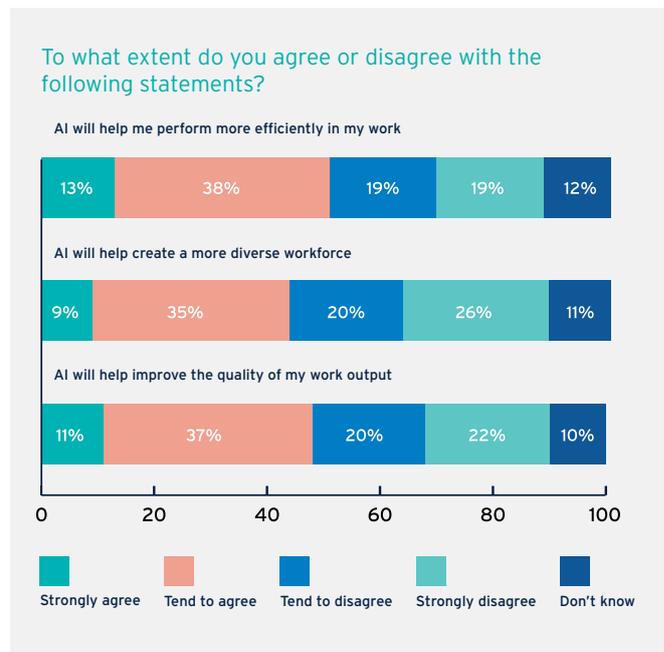


Seniority within the organisation does not appear to have a substantial impact on how much a Swedish office worker knows about AI. 68% of senior managers know at least a fair amount about the field. 70% of middle managers, 65% of junior managers and almost 60% of general staff feel the same way.

In Sweden, the industry is relevant, though. Approximately 45% of respondents in the Media and Marketing, Education, and Transport and Distribution sectors admit to not knowing very much about AI. This is in contrast, for example, with the IT and telecoms industry, in which 88% of professional feel they have a strong understanding. Three-quarters of those in financial services or Real Estate feel the same way.

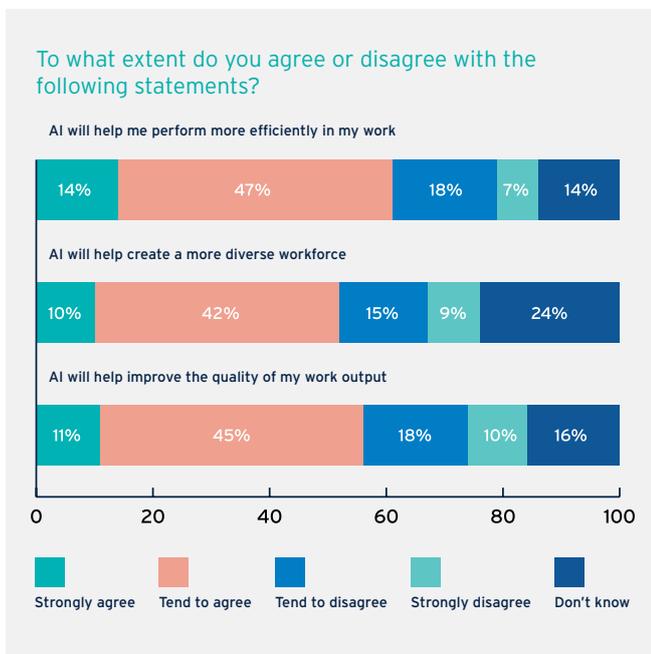
Though more than 70% of those in the Danish IT sector also report having a solid knowledge of AI, fewer than half financial services professionals believe they know at least a fair amount about artificial intelligence.

Higher understanding of AI seems to support a more positive view of its potential. Half of those in the Swedish IT sector believe that AI can do a more accurate job than a human in their profession. Similarly, more than half of financial services professionals think IT could outperform humans in economic forecasting. Likewise, among Danish IT and telecoms professionals, 53% believe AI could do a more accurate job than humans.



REGION 2: DENMARK & SWEDEN

Danish trust in AI's potential contribution to a fairer workforce stands in stark contrast to countries like the UK. 51% of office working Danes expect AI to help create a more diverse workforce, even though only a tenth feel that AI removes bias from decision making. In Sweden, views on AI's potential impact on diversity are almost perfectly split: 46% agree that it will contribute to a more diverse workforce, 43% don't.

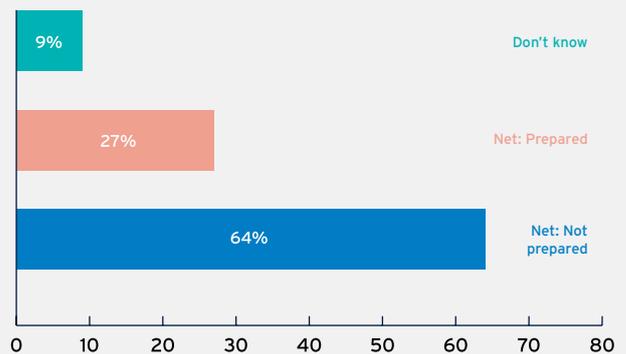


THE IMPLEMENTATION GAP

On average, 70% of office workers in Sweden and Denmark do not currently use artificial intelligence as part of their work. However, employee perception of AI-readiness varies significantly between the two countries.

In Sweden, almost two-thirds of office workers believe their employer is not prepared to implement artificial intelligence in the workplace.

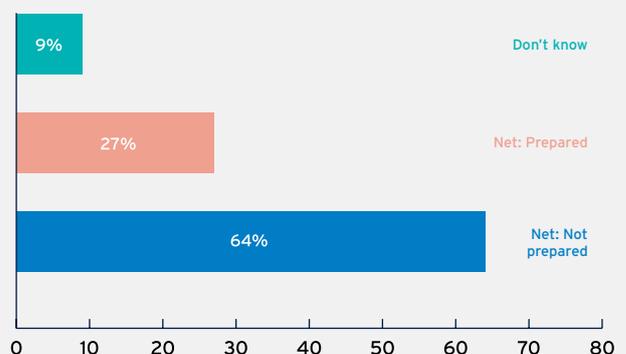
In general, how prepared, if at all, do you think your current employer would be to adopt AI systems in the next 12 months?



Danes are more optimistic: precisely 50% of Danish respondents think of their organisation as unprepared for AI. The younger generations in Denmark are mainly positive. 78% of Generation Z (18-24) respondents believe their company is ready for AI, while among millennials the numbers are also more in favour of prepared vs unprepared.

44% of Danes are already using AI or feel personally prepared to use an AI system sometime in the next year. Among Swedes that statistic drops slightly to 40%.

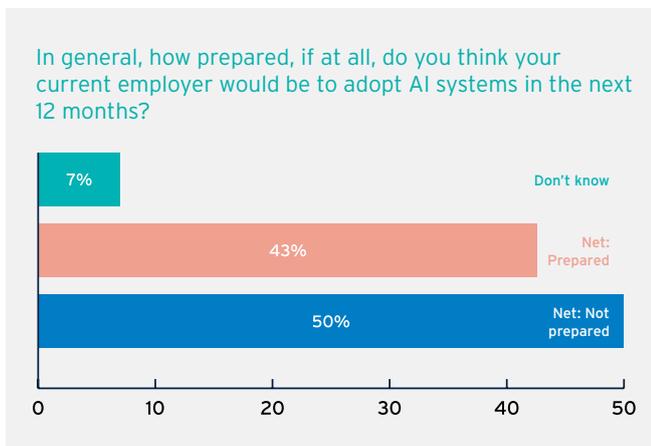
In general, how prepared, if at all, do you think you would be to use AI systems as part of your current role in the next 12 month?



REGION 2: DENMARK & SWEDEN

The Danish figures suggest that some industries may be far better placed to adopt AI than others. 74% of legal sector respondents regard themselves to have a fair to detailed understanding of AI. From that base their projections are bullish. 71% again believe their company to be ready to implement artificial intelligence within the next 12 months, with 43% already using AI in the workplace. More AI integration may not be a good thing, though. Two-fifths of Danish legal professionals surveyed think that AI might limit their opportunities for progression.

Other industries that share the Legal fraternity's positive view of implementation potential include financial services, IT & telecoms, accountancy and Transport & Distribution. Other sectors are not as confident. Between 55% and 70% of people in the Construction, Medical & Healthcare, Education and Retail industries believe their company will not be ready for AI within the next 12 months.



The Legal sector is also the most positive in Sweden, though only 50% of participants believed that their company was ready for AI implementation. More than 70% of workers in industries like Retail, accountancy and Education see their companies unprepared, but sentiment regarding AI-readiness in Swedish businesses is generally low.

Diminished confidence may be understandable in a professional population showing the highest knowledge of artificial intelligence. The more one knows about AI, the

more one understands what successful implementation of AI requires.

Company size has a role to play in both countries - the larger the organisation, the more prepared employees feel. In Danish businesses of less than 50 employees, 31% believe their company is ready to implement AI; in businesses of 1000 or more, 62% think so. A similar trend exists in Sweden but off a lower base.

How to close the gap? On this question, Danes and Swedes agree. In both countries, the most important ways of achieving AI-readiness are believed to be an investment in new technology and infrastructure, creation of a new AI process management role, and establishment of new AI-specific ethics and procedures. Just as telling, perhaps, is the declaration by a quarter of Danish and Swedish professionals that they don't know what needs to be done for their company to ready itself for the integration of artificial intelligence.

PERCEIVED BENEFITS

Danish and Swedish professionals share the belief that AI has net positive potential for their careers. 23% believe that AI will create more opportunities for them while only 5% feel it will restrict their opportunities for progression. Even fewer (4%) fear that their job will become redundant with the arrival of AI. More than a quarter predict that AI will make them more productive.

More than half think AI will do a better job than a human in data handling. Both nations also expect AI to outshine humans in productivity management, IT and financial forecasting.

48% of Swedes think that AI will improve the quality of their work while more than half expect it will increase their efficiency. Danes have even higher hopes - 56% expect improved quality and 61% expect more efficiency. 26% of all Danish and Swedish respondents agree with the statement that artificial intelligence helps people make better decisions.

REGION 2: DENMARK & SWEDEN

These are potent benefits, and most respondents seem to appreciate what is needed to access them. Two-fifths of Danish and 29% of Swedish professionals expect that working with AI will require that they learn new skills, while a quarter believes that their job role will need to adapt or change.

The positive sentiment is unusually high among millennials. Three-quarters of professionals aged 25-34 agree that artificial intelligence will make them perform more efficiently in their work. More than 70% believe that AI will improve the quality of their work output. Senior management has the same outlook. 71% of company executives in Denmark believe AI can help them work more efficiently; 61% think it will improve their work quality.





REGION 3:
GERMANY

REGION 3: GERMANY

OVERVIEW

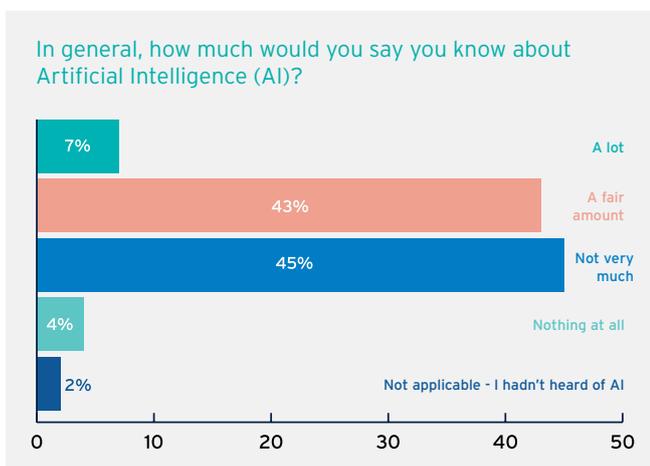
- German professionals have low regard for AI's potential to improve diversity in their workforces.
- Three-quarters of professional respondents don't use AI. Only 18% of these feel personally prepared to use AI within the next year.
- German CEOs are the least AI-engaged of European CEOs and the least enthusiastic about its potential impact.

KNOWLEDGE AND TRUST

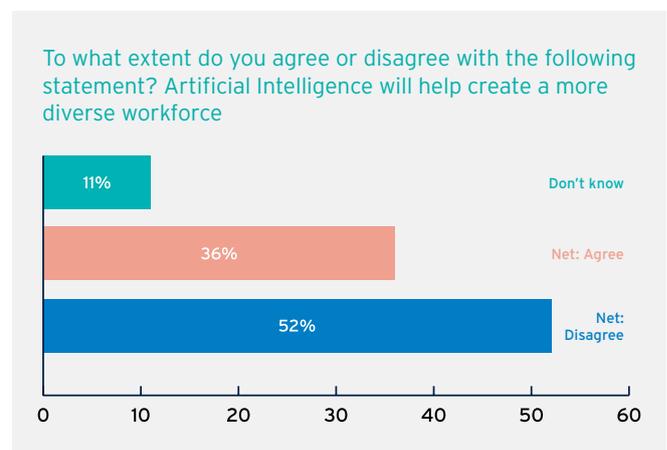
The World Economic Forum has rated Germany as the world's most innovative economy ⁴, and the German government has committed to spending €3 billion on AI development before 2025. The conversation about AI at a macro level may be active, but Headspring's research suggests that there is a lag of knowledge and trust among professionals.

Germany's office workforce is quite evenly split on AI knowledge. Exactly half say that they know a lot or a fair amount about the subject, with 10% more men than women feeling this way. Age is a pertinent marker of expected familiarity with artificial intelligence. Understanding of AI generally declines with age, with respondents in Generation Z (Gen Z) knowing the most (two-thirds feel confident in their knowledge).

Only 46% of German CEOs claim to know a fair amount to a lot about AI; the same number say they don't know very much. An unusually high 8% saying they had never heard of AI before the survey. Among general staff the lack of familiarity increases to 59%.



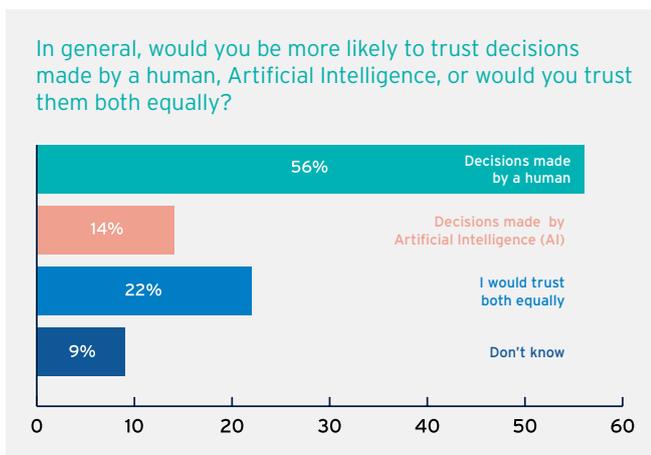
Overall, German professionals are also sceptical about AI's contribution to diversity. 52% disagree that AI will help create a more diverse workforce. This belief is correlated strongly with the size of business for which the professional works. The larger the company, the more likely an office worker is to believe that AI can improve diversity - 21% feel this way in businesses of 50 or less, rising to 43% in companies of 1000 or more. However, only 15% say it removes bias from decision making.



As in the UK, it seems that German trust in AI is relatively low. A third of professionals say AI's most significant contribution is to create machines or systems that replace human jobs. Only 14% would trust an AI system's decision over that of a human, though 22% would trust them equally. As with knowledge of AI, trust declines with age. Gen Z is most likely to trust AI decisions (25%) but only 12% of those 55 years old or older would trust AI over a person.

REGION 3: GERMANY

Seniority and industry have an impact. More than two-thirds of German CEOs and 69% of business owners would trust humans over AI. Two-fifths of those in the accountancy sector trust humans and AI equally, while 45% of those in Education would do the same.



Though only 8% of all German professionals surveyed feel that AI will limit their opportunities for career progression, 19% of non-managerial employees believe AI will make their jobs redundant.

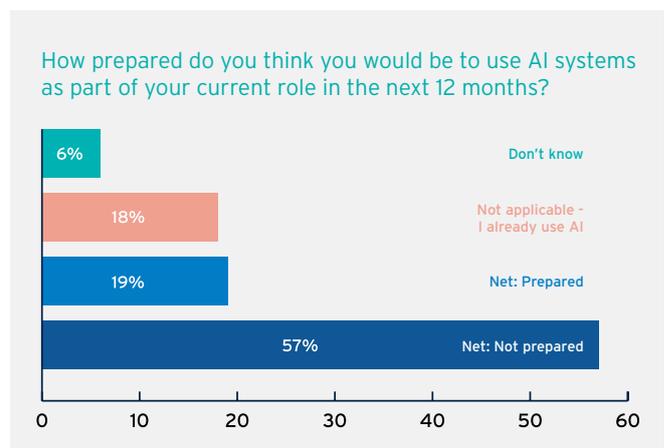
THE IMPLEMENTATION GAP

Current AI integration in Germany appears low, as is the general sense of individual readiness to adopt AI. Three-quarters of professional respondents don't use AI. Only 18% of these feel personally prepared to use AI within the next year.

Twice as many professionals in larger companies (500+) currently use AI as those in smaller businesses. A broad gap also exists in seniority - 35% of senior leaders now use AI while only 6% of general employees do.

Low exposure may partly explain why only 28% say their company is prepared for AI. German CEOs, who report more moderate knowledge of AI than their counterparts in other surveyed countries, are even more uncertain. Only 23% of CEOs agree that their company will be ready for AI.

Professionals in the Education and Real Estate sectors (82%) feel the least prepared for imminent AI integration. Following a trend in the research, financial services and IT/telecoms workers feel most prepared. More than half of



those in IT/telecoms think AI will do a more accurate job than humans in their industry.

The top three recommendations from German professionals for effective integration of AI are an investment in infrastructure and technology, creation of a new role to oversee AI implementation, and more investment in people, development and training.

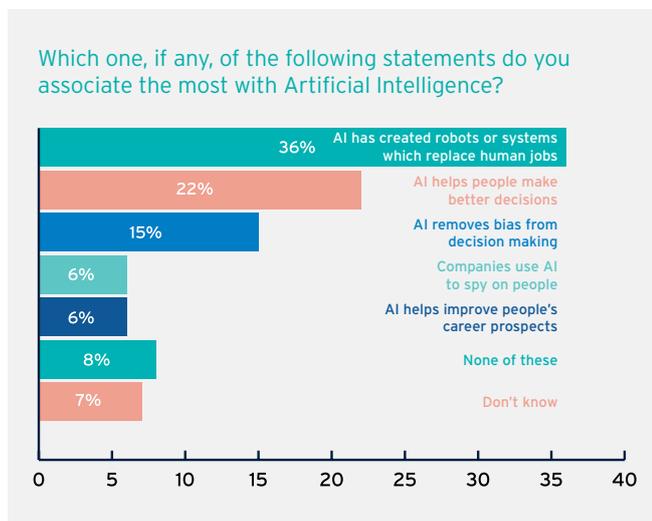
PERCEIVED BENEFITS

German CEOs also have a low estimation of AI's potential impact on their productivity - only 15% think it will make them more productive. By comparison, a quarter of all German professionals feel AI can help them produce more. A quarter also thinks that AI will make their work more accurate. Accountants are exceptionally enthusiastic, 70% believing that AI will improve the accuracy of their work.

Only 8% of German office workers feel that AI might make their job roles redundant, though more than double that number of financial services workers believe so. A quarter of all German professionals think AI will give them more opportunities, but only 6% think it will improve their career prospects.

REGION 3: GERMANY

As in many of the other countries surveyed, most of the respondents in Germany still associate AI with jobs being replaced by robots or automated systems. This brings a challenge to businesses: there is a clear demand for education about AI in the workplace, specifically about its benefits.





REGION 4:
FRANCE

REGION 4: FRANCE

OVERVIEW

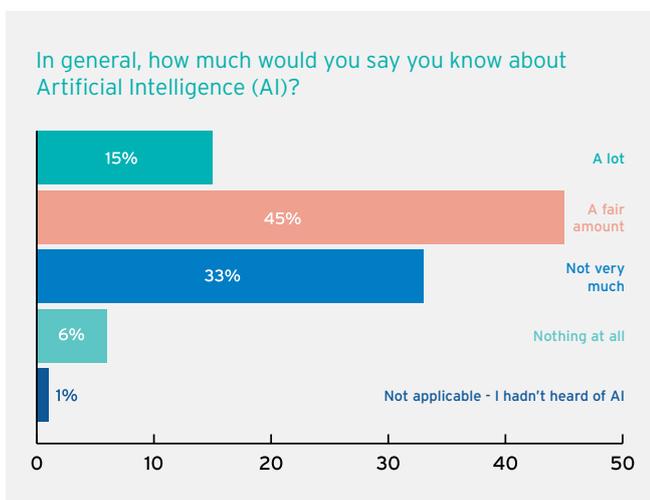
- France has the highest proportion of CEOs who know a lot about artificial intelligence, and French CEOs are the most positive of all about their ability to work with AI.
- Leadership's belief in the power of AI to make a difference in diversity is high, as is confidence in better career prospects.
- Overall, French professionals share a positive view of job security with AI.

KNOWLEDGE AND TRUST

France will invest €1.5 billion in AI research and development by 2022, and Headspring's poll data suggest that the attitudes of French professionals, especially those in leadership, mirror this positive approach.

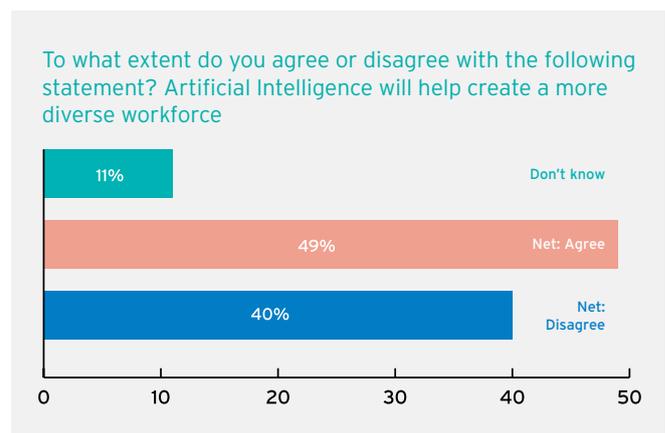
Almost two-thirds of French office workers know a lot or a fair amount about AI, with a notable discrepancy in gender. 67% of men claim this level of knowledge, while only 53% of women feel the same. Breaking a survey trend, the most knowledgeable age group is those 55 years or older.

Seniority in French organisations appears to be a critical determinant in awareness and appreciation of AI. While 34% of non-managerial employees have a solid understanding of AI, that number leaps in senior ranks. 47% of CEOs - the most of all countries polled - say they know a lot about artificial intelligence; 89% say they know a fair amount to a lot. 88% of managing directors express the same confidence.



French professionals are divided on AI's potential to create a more diverse workforce, but attitude is generally favourable. 49% agree that this is likely, while 40% disagree. The larger the business the professional works in, the more likely he or she is to believe in AI's diversity value. Compared to companies of 50 employees or less, more than double the office workers in businesses of 1000 people or over agree that AI can help shape a more diverse workforce.

Reaffirming the strong support for artificial intelligence among French business leaders, 84% of CEOs believe AI has a role to play in making the workforce more diverse.



This sentiment is also strong among those aged 18-24. Two-thirds believe AI increases diversity. When asked to connect AI with themes like job replacement, decision making, corporate surveillance and career impacts, the most favoured association was with the suggestion that AI removes bias from decision making.

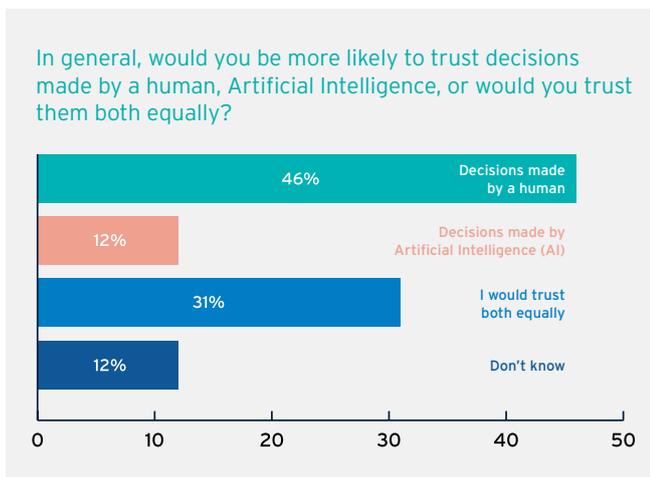
Among all French respondents, the most passionate belief about AI is that it creates systems which replace human jobs (27%), followed closely by the hope that it will help people make better decisions (23%). Among CEOs, the most AI-associated potential is that it will help improve people's career prospects.

However, only 16% of CEOs believe AI will create new opportunities for them - below the average of 21% but above the non-managerial employee rate of 11%.

REGION 4: FRANCE

Though trust in human decision making is higher than trust in AI, a third of office workers say they would trust them equally. Gen Z is most likely to trust AI more. Those over 55 years old are least likely to trust an AI device more than a human, but they are also more likely than any other age group to trust man and machine the same.

Organisational trust in the ability of humans to make better decisions is universal, regardless of seniority. Non-managerial staff, though, are the least trusting, with only 3% willing to trust an AI system's judgment over a human's.



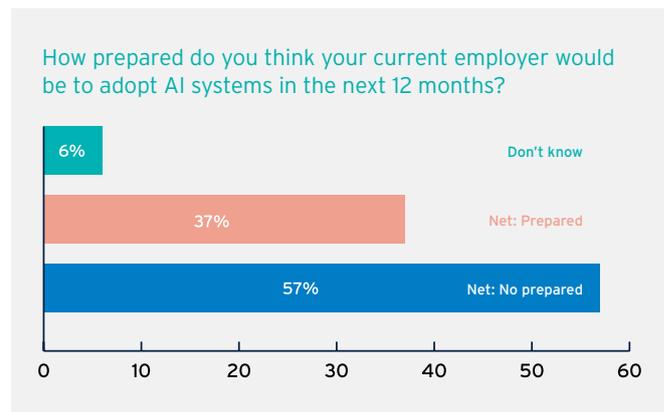
Overall, confidence in job safety is high. Only 5% of professionals believe their job will be replaced by AI, though this doubles in the Transportation and Distribution sector. One-fifth of middle managers think AI will limit their progression

THE IMPLEMENTATION GAP

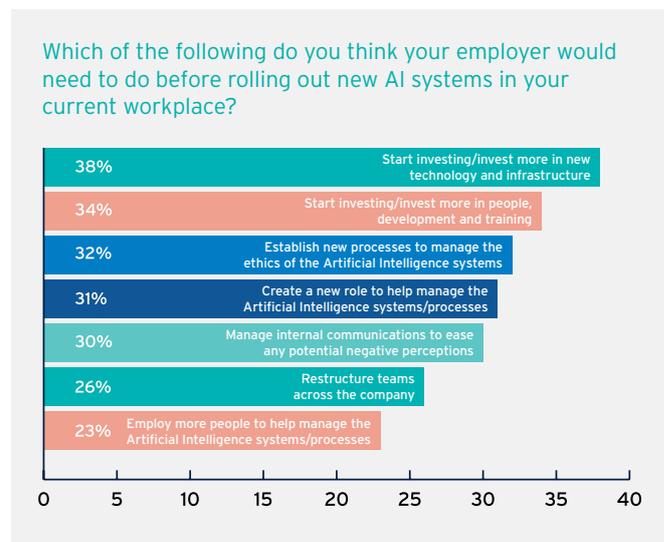
Senior management also guides French opinions on the level of preparedness for the integration of AI in their work. 60% of CEOs already use artificial intelligence in their work, compared to 11% among non-managerial staff. 68% of CEOs also believe that their companies are ready for AI, 42% saying 'very prepared'.

This confidence may, however, be a factor of business type and size. Among proprietors and business owners, 69% feel that their business is unprepared; 37% feel 'not at all prepared'. French CEOs are also the most upbeat of all their

international counterparts about their personal ability to engage with AI - 84% currently use or feel prepared to use the technology within the next 12 months. Only 29% of general employees feel the same.



In line with popular opinion among most countries, the AI implementation priority among French professionals is increased investment in technology and infrastructure. A close second, though, is the need to invest in people and employee training. Other essential requirements include the establishment of new processes to manage AI ethics, establishment of a new leadership role to oversee AI, and better internal communication around AI's benefits.



REGION 4: FRANCE

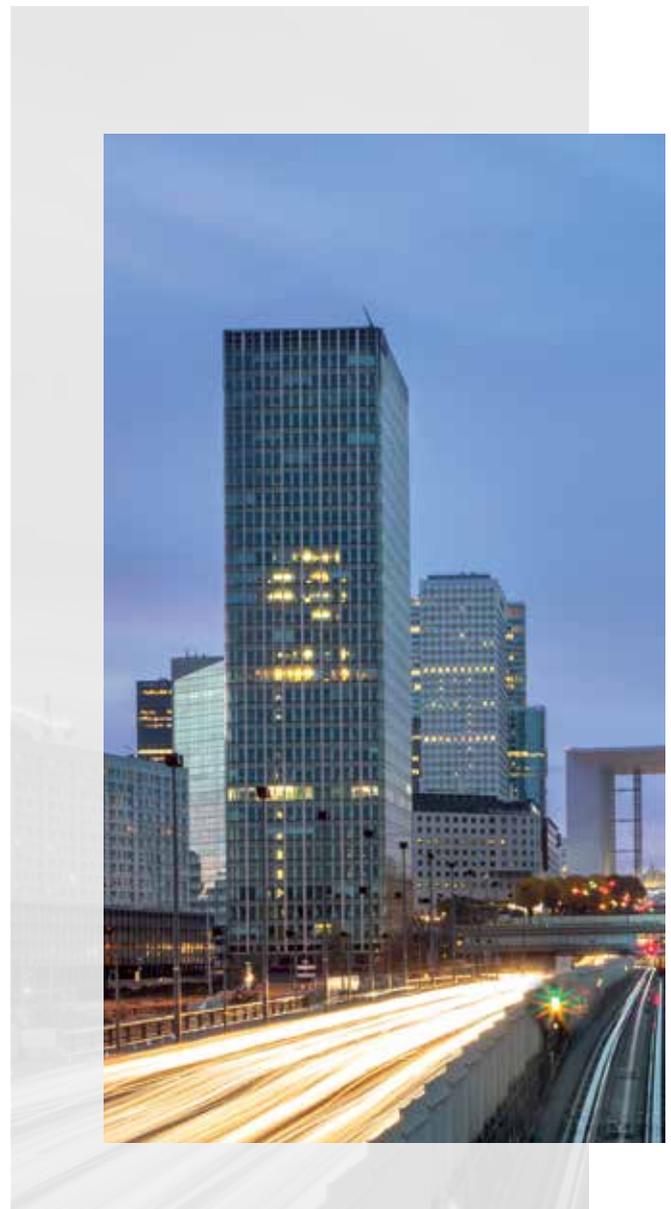
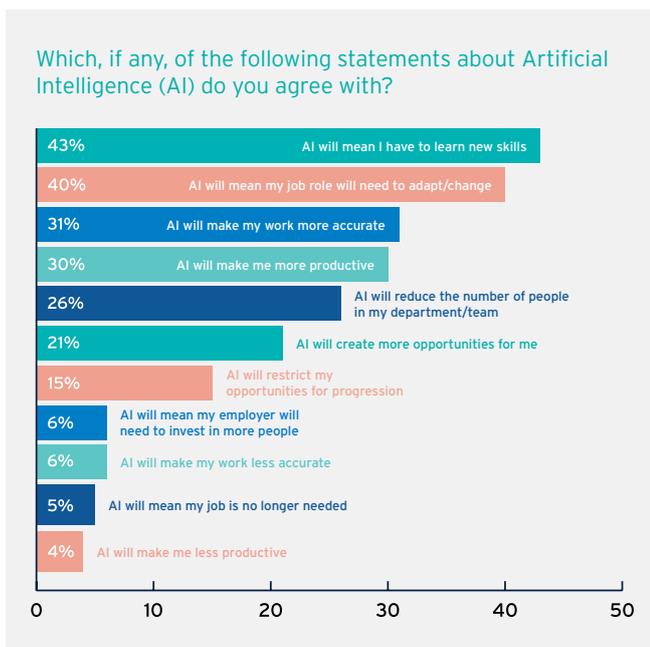
PERCEIVED BENEFITS

Professional workers in France have positive attitudes to the potential value of AI and appreciate that change is necessary for AI to take effect. 43% believe they will have to learn new skills and 40% believe their job role will have to adapt or change.

However, belief in the potential benefits is substantial. A third anticipate that artificial intelligence will make them more productive or more accurate, or both. Two-thirds think AI will help them perform more efficiently in their work, with positive sentiment elevated again among business leaders. More than three-quarters of managing directors, chief executives and other board-level managers support this notion.

Relatively high compared to other nations, a fifth of French professionals believe AI will create opportunities for them.

61% think it will do so by improving the quality of their work output, with almost 80% of CEOs feeling the same. By contrast, however, 42% of non-managerial employees disagree with this sentiment.



An aerial photograph of a winding asphalt road through a dark, forested landscape. A small white car is visible on the road, moving towards the top left. The terrain is rugged and appears to be a mountainous or hilly region. The overall color palette is dark, with shades of blue, green, and brown.

REGION 5:
SPAIN

REGION 5: SPAIN

OVERVIEW

- Organisational seniority is a clear discriminator in predicting how enthusiastic, prepared and trusting Spanish professionals feel about AI implementation.
- Of all European nations surveyed, Spaniards have the highest sensitivity to job security with AI.
- Spanish professionals rank highest for the belief that AI will make their work more efficient and of better quality.

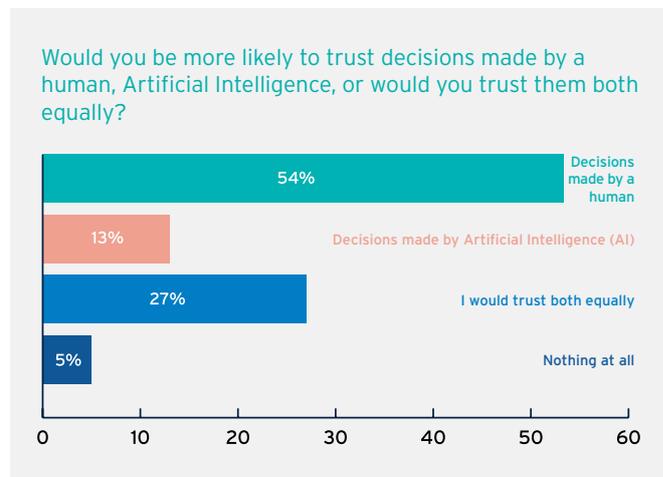
KNOWLEDGE AND TRUST

Spain has begun developing a national AI strategy for publication before the end of 2019. Numbers suggest that understanding of, and attitude to, artificial intelligence are as positive among professionals as they are in national government.

More than half of Spanish office workers suggest they know at least a fair amount about AI, but with a significant gender gap - men are almost 20% more likely to know about AI than women. Gen Z is the most connected age group with 60% feeling knowledgeable about AI. A substantial seniority effect is also at play in Spanish organisations. While two-fifths of general employees feel they have a solid knowledge of AI, this figure doubles to almost 80% among CEOs.

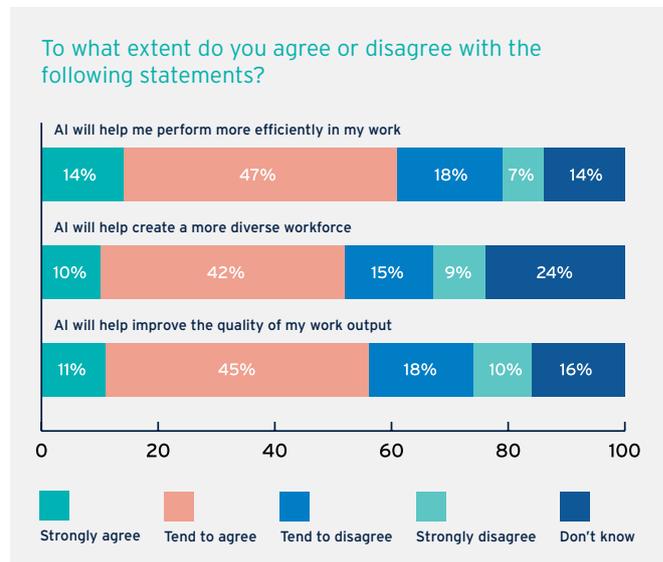
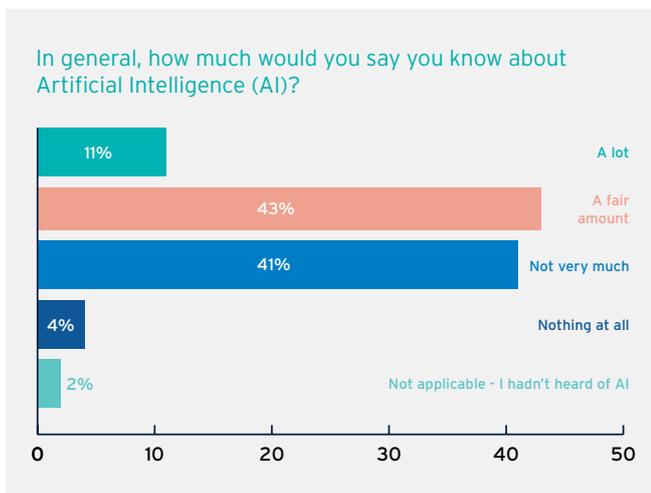
The most knowledgeable industry is IT/telecoms, in which 70% of office workers feel that they have a good grasp of the subject.

Trust in AI is mixed. On par with other nations, just over half of respondents would trust a person's decision over an AI decision, and 27% would trust them the same. Perhaps surprisingly, more than a third of over-55-year-olds trust humans and AI equally.



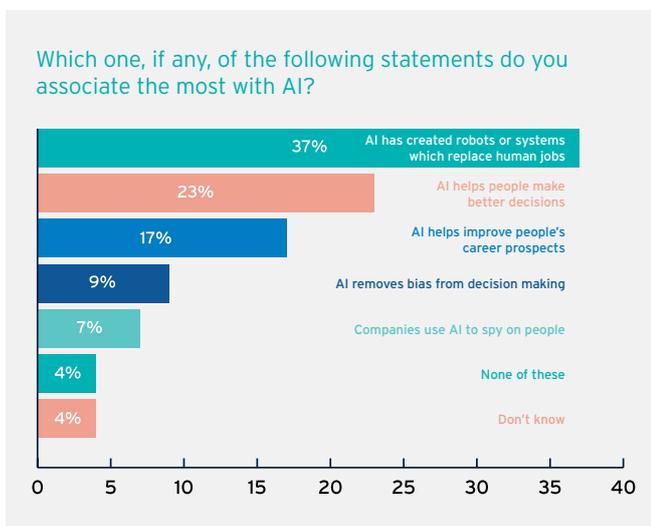
Two-thirds of professionals in Spain agree that AI will create a more diverse workforce - the highest number in Europe.

The most consistent association with AI is that it will create mechanisms to claim human jobs, with a particularly strong resonance in industries like Retail, Hospitality, accountancy, Media and marketing Education and Real Estate. The second most popular belief is that AI will help people make better decisions, and the third is that AI will open up better job opportunities.



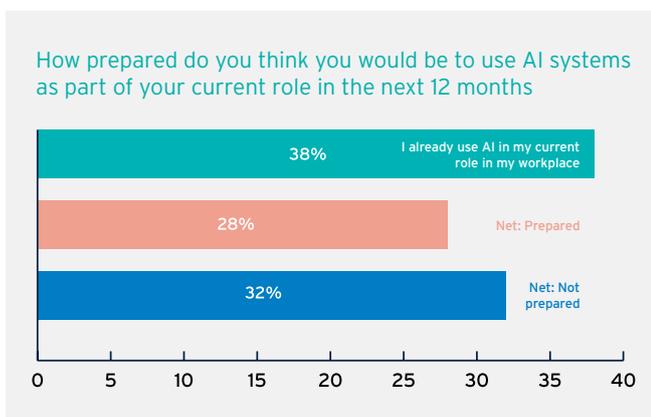
REGION 5: SPAIN

Of all European nations surveyed, Spaniards have the highest sensitivity to job security around AI. 12% think their job will no longer be needed - more than double the UK and triple Denmark and Sweden. Also, 33% believe it will reduce the number of people in their team/department. A relatively high 15% think it will restrict opportunities for career progression.



THE IMPLEMENTATION GAP

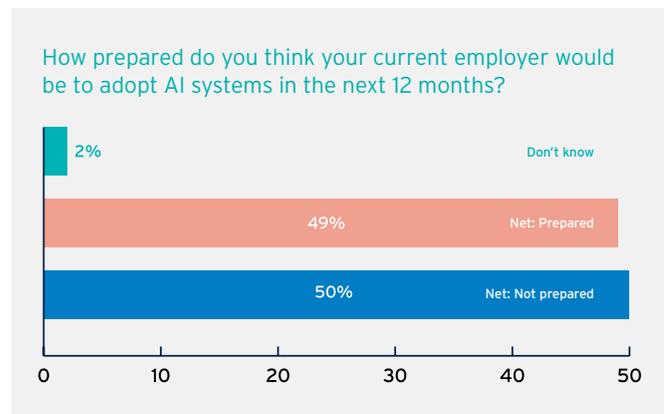
Though only 38% of Spanish professionals currently use AI, another 28% feel prepared to adopt AI within the next 12 months: a total of 66% AI-ready employees. Highlighting the seniority gap regarding AI in Spanish firms, 77% of CEOs and 82% of MD's identify as ready for AI, while only 55% of general staff feel the same way.



Organisational tiers are even more divided on the topic of company readiness. Overall, opinion is split: 49% believe their employer is prepared to implement AI within the next 12 months, 50% think not. However, 62% of CEOs, 64% of MD's and 75% of other board level directors believe their companies are prepared for AI. Only 39% of non-managerial staff agree.

Similar to their French neighbours, about two-fifths of Spanish professionals believe they will need to acquire new skills to work with AI, while a third believe their role will have to adapt or change. This is especially true of those in Construction, Retail, Legal and accountancy.

Office workers in Spain are most aligned with the need to invest in new technology and infrastructure to support AI, restructure teams across the organisation, build leadership in the AI space, and invest more in people and training.



PERCEIVED BENEFITS

With large numbers expecting to need new job skills or role adaptations, it appears that most Spanish professionals believe the change will be worthwhile.

79% agree that AI will help them perform more efficiently - the highest of all countries in this study. They also rank highest for the belief that AI will improve the quality of their output, with 86% of Spanish professionals in agreement. Unlike other areas of investigation, these values are consistent across all levels of organisational seniority.

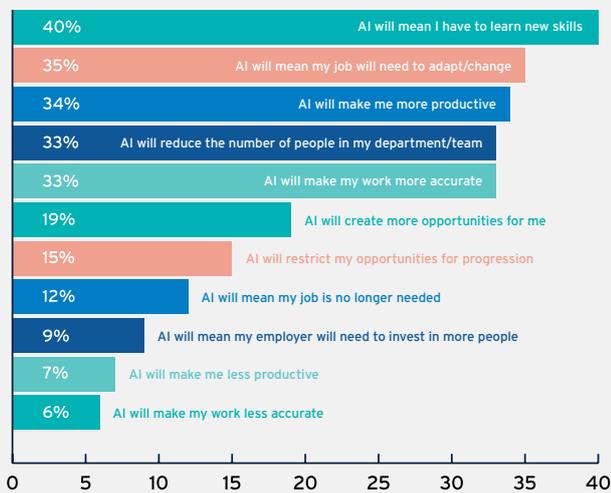
REGION 5: SPAIN

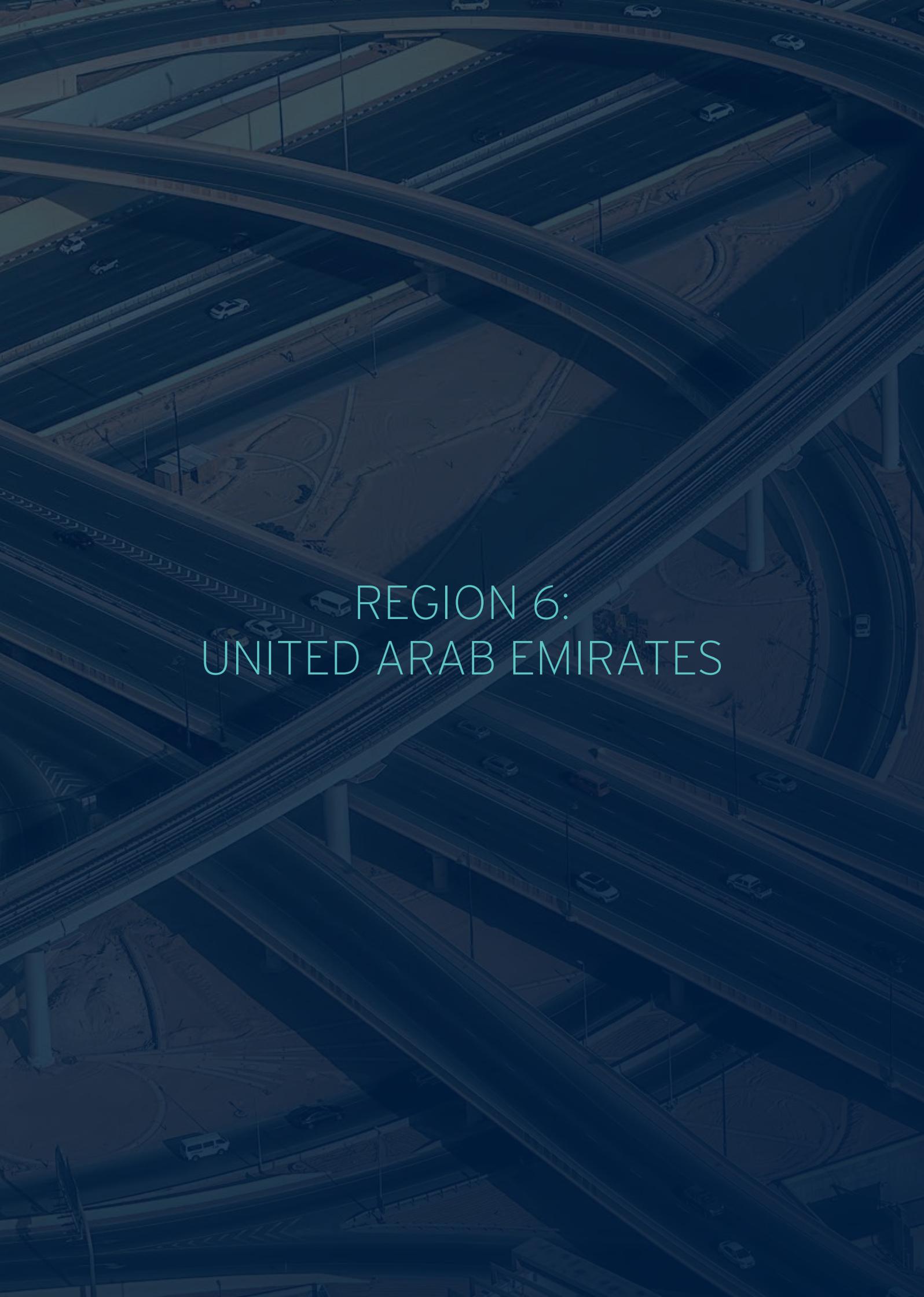
With substantial differences between men and women, a third of professionals say AI will make them more productive or more accurate. Among men, this confidence is at 42%, among women it is 26%.

Only 17% think these improvements will translate into greater job opportunities, though 30%-47% of MD's, non-exec directors and other senior managers believe their careers will benefit.

The areas where AI is expected to have the most significant impact are data handling, accountancy/finance, productivity management, financial forecasting and communications. Spain is the only country in which IT does not make the top five, even though 54% of IT professionals think AI can do a more accurate job than a human in their industry.

Which, if any, of the following statements about Artificial Intelligence (AI) do you agree with?





REGION 6:
UNITED ARAB EMIRATES

REGION 6: UNITED ARAB EMIRATES

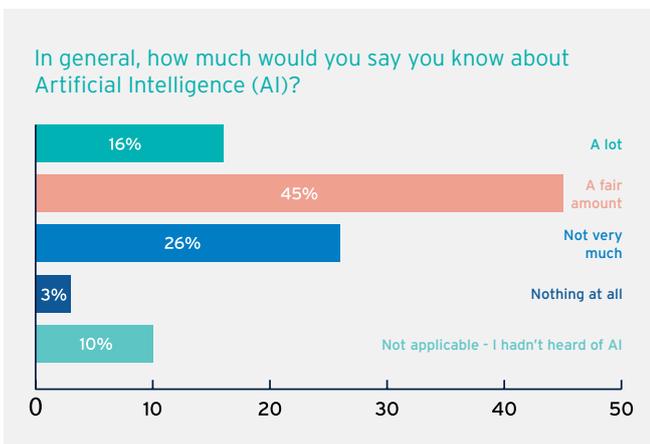
OVERVIEW

- Professionals in the United Arab Emirates show high belief in the potential benefits of AI, though the country also has the highest number of workers who had never heard of AI.
- Chief execs in the UAE are unique among CEOs in seeing business development as the best potential win for AI.
- UAE is the only region in which the belief that AI leads to the replacement of human jobs is not the strongest, even though the expectation of AI-driven job redundancy is highest.

KNOWLEDGE AND TRUST

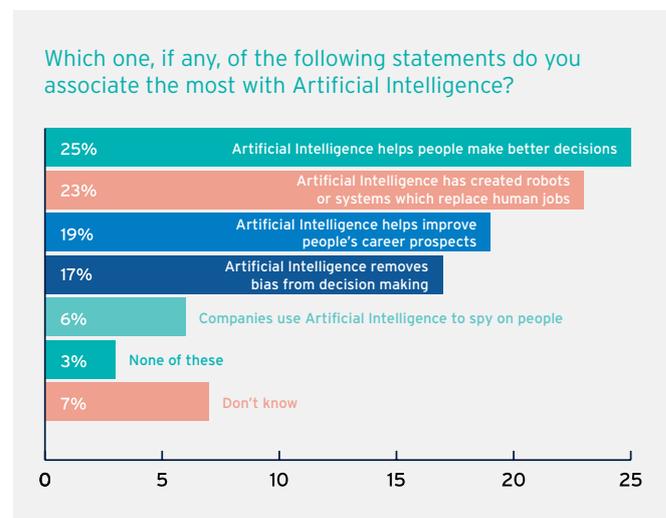
UAE leadership is promoting AI heavily through its UAE AI 2031 strategy. It is understandable, then, that research figures show high engagement with AI. Wide disparities, however, exist in gender and seniority.

A significant proportion (61%) of UAE professionals know a fair amount or more about artificial intelligence with only 3% knowing nothing at all. One-tenth of all UAE office workers had never heard of AI before this study, the highest of all countries in this report. However, this lack of awareness is driven by the most significant gender gap of all seven countries: 19% of women were unfamiliar with AI, compared to 6% of men. Specific industries also showed the most prominent knowledge gap in the study: 25% in Medical and Healthcare, 19% in Education, 17% in Transport and Distribution had never heard of AI before. 18-24 year-olds in the UAE are the most likely to know about AI. Every chief Exec and 72% of Senior execs have substantial knowledge, but only 42% of non-managerial staff claim the same.



Though only 17% of respondents believe AI removes bias from decision making, the number of UAE office workers who believe AI can have an impact on diversity far supersedes the results of any other country. Three quarters believe artificial intelligence will encourage the creation of a more diverse workforce. This statistic rises to 92% and upwards for CEOs, Chairpersons and Business Owners, though the positive opinion is quite even across all organisational ranks.

This high trust in AI's ability to manifest positive change is also reflected in primary associations. The UAE is the only region in which the belief that AI leads to the replacement of people's jobs is not the strongest. More professionals (25%) think AI helps them make better decisions than people (23%) who think it has created robots or systems that replace human jobs.



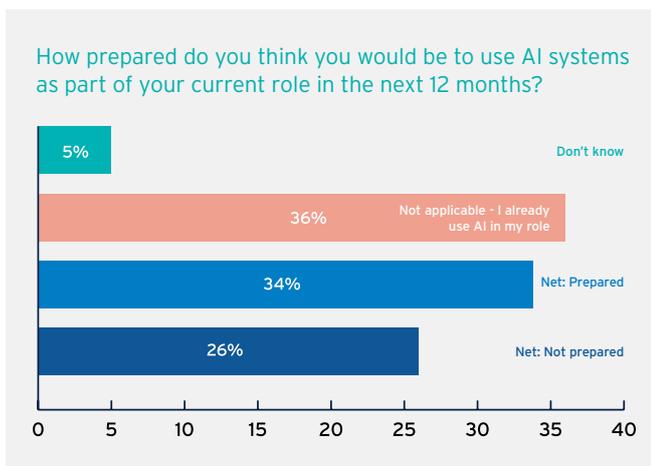
However, more than one in ten (13%) believe that AI will make their job role redundant. This statistic is the highest of all seven nations surveyed.

REGION 6: UNITED ARAB EMIRATES

THE IMPLEMENTATION GAP

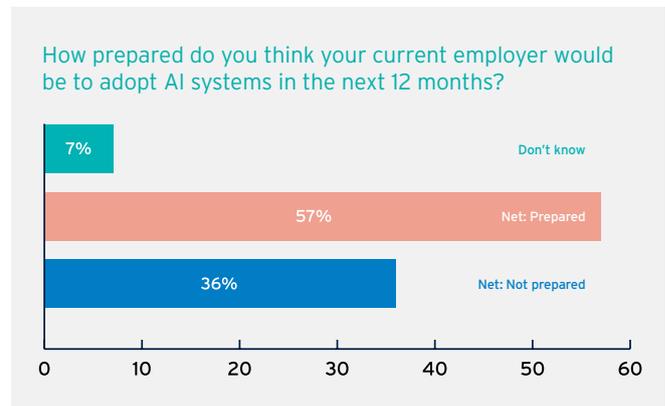
Current AI utilization in the UAE is comparatively low. 36% of all professionals use artificial intelligence in their work. Among senior role players, where usage in other countries is generally higher, that figure is still below half (42%). The only industries that show high current adoption are accountancy, IT and Transport and Distribution.

Despite this, 70% of UAE office workers are currently using, or feel prepared to use, AI. Among CEOs that number is 92%, and among Non-Executive Directors it is 90%. Only 34% of general employees feel this way. Professionals in the IT and Medical industries feel most personally prepared for AI implementation. Hospitality and Construction feel the least.



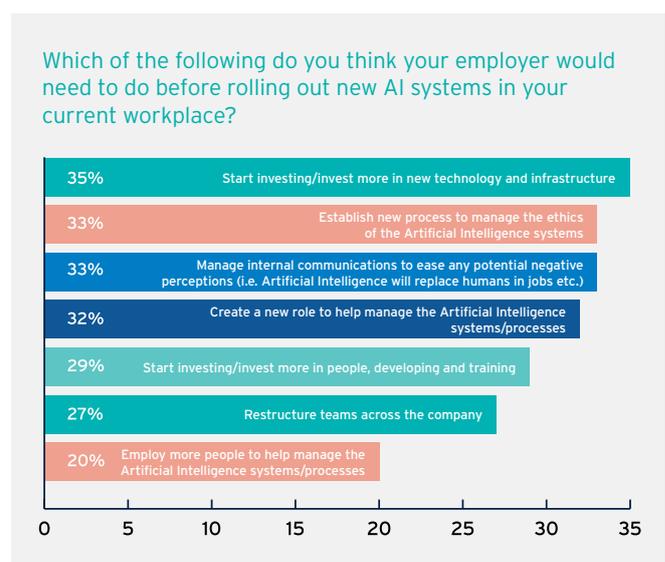
Confidence in employers is generally higher, with 57% of participants believing that their employer is prepared to integrate AI by April 2020.

Generation Z (63%) agree particularly strongly, while differences in seniority do not much impact this view - less than 10% separates senior staff from general employees.



One-quarter of UAE professionals believe their job role will need to adapt, while one third feel they will need new skills to cope. The most popular ways to achieve AI-readiness at an organisational level are through elevated investment in technology and infrastructure, better internal communications, a focus on AI ethics and increased investment in people and training.

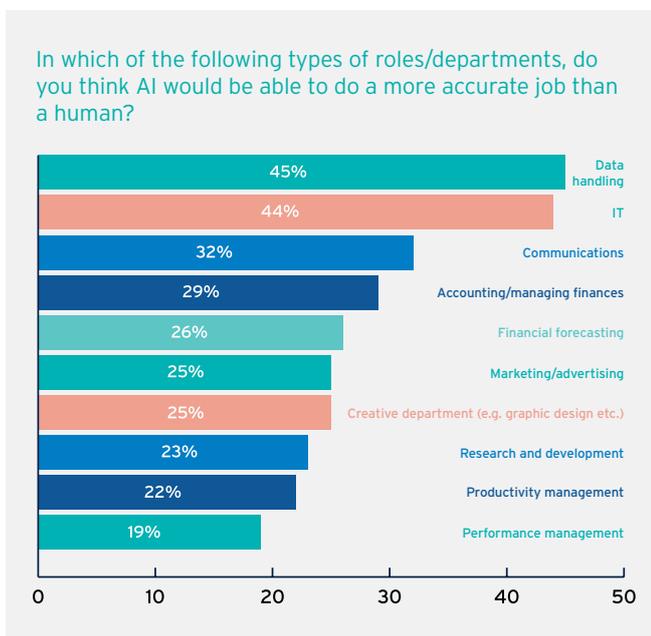
In contrast with the high numbers of UAE office workers who fear that AI will make their jobs redundant, the AI change intervention favoured most by CEOs is the employment of more people to manage the new technology and infrastructure.



REGION 6: UNITED ARAB EMIRATES

PERCEIVED BENEFITS

UAE respondents see artificial intelligence as having the potential to do a better job than humans in data handling, IT (68% of IT professionals agree), communications, and accounting/finance (though only 37% of financial services professionals agree).



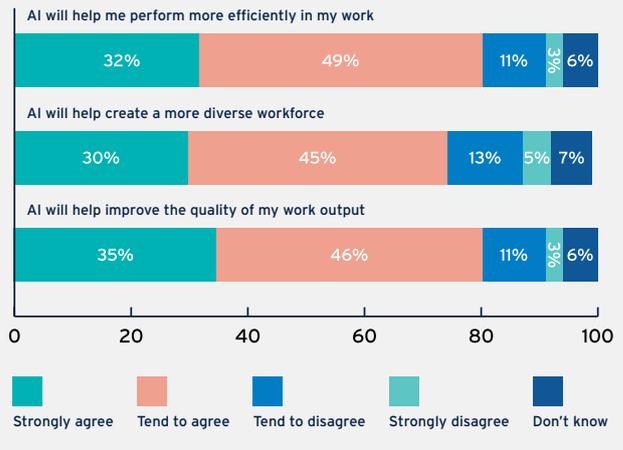
Uniquely, UAE chief execs see business development as the most likely potential win for AI.

As with diversity, the perceived benefits of AI in the UAE are substantial. 81% of professionals say AI will help them work more efficiently, with that number rising to 92% among CEOs, 93% among MD's, and 100% of business owners. 91% of IT and telecoms workers and 86% of financial services employees feel the same.

81% of UAE professionals say AI will lead to better quality work output. This is higher among non-managerial employees than in any other nation, and peaks among chief execs and business owners, 100% of whom agree with the sentiment.

91% of IT and Transport and Distribution, 94% of accountancy, and 93% of education professionals agree.

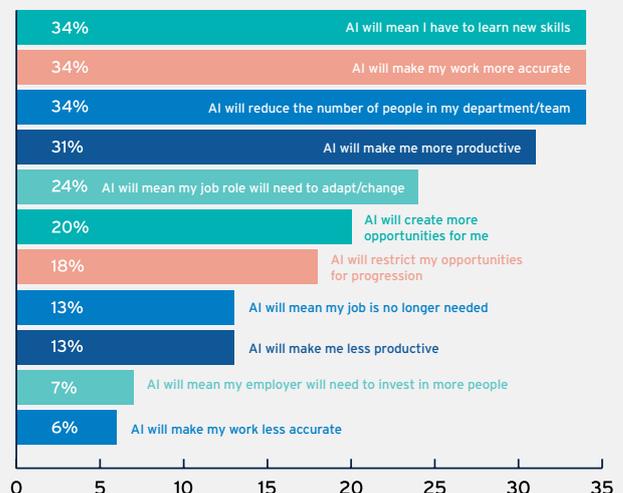
To what extent do you agree or disagree with the following statements?



19% of UAE professionals, regardless of seniority, believe that AI can improve their career prospects - the highest of all nations surveyed. 18% say AI will restrict their progression, but only 7% CEOs agree, perhaps corroborating their strong stance on meeting the challenges of AI implementation by employing more people.

34% think they will need new skills, and 34% think the size of their team will reduce, but a third think AI will make them more productive or more accurate in their work.

Which of the following statements about Artificial Intelligence (AI) do you agree with?



CONCLUSIONS

The results of this research do not suggest an international workforce enthusiastically campaigning for the adoption of AI, which is understandable. AI is still, for most, an unfamiliar technology tainted by a legacy of pop culture suspicion. However, the appetite for learning and engaging appears high. Fear of job redundancy is low (under 10%) and much less than the expectation of new opportunities and upskilling. Stereotypical concerns about companies using AI for secret employee surveillance are also extremely rare.

Leaders wishing to take the necessary and inevitable steps towards adoption of AI in their organisations would do well to listen to professionals' views and recommendations. Overall, there is a significant gap in AI knowledge and attitude between senior roles and the rest of the organisation. Women, especially, tend to share more

'HARD AND SOFT SKILLS DEVELOPMENT REQUIRES ATTENTION. THE CLEAR PRIORITY FOR AI-READINESS IS AN INVESTMENT IN NEW TECHNOLOGY AND INFRASTRUCTURE, WHICH WILL REQUIRE BOLSTERING OF TECHNICAL KNOW-HOW AND UPSKILLING IN 'HARD' AREAS OF APTITUDE'.

concerns about AI's potential to negatively impact the workforce. Leaders need to meet one of the key themes emerging from this report: employees feel a need for enhanced internal communication to manage potential negative perceptions.

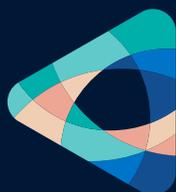
Hard and soft skills development requires attention. The clear priority for AI-readiness is an investment in new technology and infrastructure, which will require bolstering of technical know-how and upskilling in 'hard' areas of aptitude. However, it is in the softer areas of resource management that leaders may need to pay the most

attention. In addition to internal communication, the need for upgraded investment in people and training is a major outcome from this study. The implementation of processes to manage ethics around AI also emerged as a priority.

Not only do employees need to feel safe and understand more about AI so that they can maintain higher motivation and morale, they also need to feel confident in engaging with this new technology. This is true at all levels of the organisation.

Industry-specific results suggest that companies' exposure to AI-related volatility will be a deciding factor in effective change management. Industries like IT, financial services and accountancy are predictably regarded as disruptable, but professionals in these areas generally seem well-prepared for the adjustment. More critical for leaders in all sectors is the need to pay attention to what professionals regard as the most AI-ready areas of business: data handling, IT, productivity management, financial forecasting and accounting. However, as these are generally accepted as ripe for AI adaptation, decision makers are also well-advised to increase communication of how AI might affect services less often associated with AI.

Artificial Intelligence represents an exciting opportunity for businesses across all regions and industries. However, success in implementation will depend on the management of employee expectations and confidence in the value of transition. One of the most desired interventions among professionals in Headspring's study was the establishment of a new business role that oversees AI integration. In times of uncertainty, as AI will unavoidably create, people need leadership. The deciding factor for most organisations, then, will be how their leaders respond.



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All figures, unless otherwise stated, are from YouGov Plc. Total sample size was 4,515 office workers in selected European countries and UAE. Fieldwork was undertaken between 8th to 22nd April 2019.

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