Technology Trends 2023 and the
Future of Work

Puerto Rico Science Research and Technology Trust

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La adopción de tecnología seguirá siendo un motor clave de la transformación empresarial en los próximos cinco años.

- Una aplicación más amplia de los estándares ambientales, sociales y de gobierno corporativo (ESG) dentro de sus organizaciones también tendrá un impacto significativo.

- Los efectos más significativos de creación y destrucción de empleo provienen de las tendencias ambientales, tecnológicas y económicas.

- Dentro de la adopción de tecnología, big data, computación en la nube e inteligencia artificial tienen una gran probabilidad de adopción.

- El pensamiento analítico y el pensamiento creativo siguen siendo las habilidades más importantes para los trabajadores en 2023.

Top **15** New Technology Trends **2023**

AI and Automation
- AI in Healthcare
- Automation in Manufacturing
- AI in Customer Service
- AI and Cybersecurity

Blockchain
- Blockchain in Supply Chain Management
- Decentralized Finance (DeFi)
- NFTs and Digital Ownership

5G Networks
- Enhanced Mobile Broadband (eMBB)
- Massive Machine Type Communications (mMTC)
- Ultra-Reliable Low-Latency Communications (URLLC)

Quantum Computing
- Quantum Cryptography
- Quantum Machine Learning
- Quantum Simulation

Edge Computing
- Edge AI
- Edge Analytics
- Edge Security

Augmented Reality (AR)
- AR in Retail
- AR in Education
- AR in Gaming

Virtual Reality (VR)
- VR in Healthcare
- VR in Education
- VR in Gaming

The Metaverse
- Virtual Worlds
- Virtual Economies
- Social Metaverse

Space Technology
- Space Tourism
- Space Mining
- Space Debris Cleanup

Biometrics
- Facial Recognition
- Voice Recognition
- Fingerprint Recognition

Cybersecurity
- Zero Trust Security
- AI in Cybersecurity
- Cybersecurity Regulations

Cloud Computing
- Hybrid Cloud
- Edge Cloud
- Serverless Computing

Internet of Things (IoT)
- Smart Homes
- Smart Cities
- Industrial IoT

Extended Reality (XR)
- XR in Architecture and Design
- XR in Sports
- XR in Entertainment

Robotics
- Collaborative Robots (Cobots)
- Autonomous Robots
- Medical Robotics

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Through Strategic Goals

To clarify how these trends can drive value for you, start from the strategic objectives of your enterprise.

For example, Gartner research shows that 94% of CEOs want to maintain or accelerate pandemic-driven digital transformation. Consider, then, which technologies will be most relevant, while realizing that they don't all need to be implemented at once.

This view forms the beginnings of your strategic technology roadmapping process.

Technology Trends Likely on the Roadmap for Accelerating Digital

Sustainable Technology	AI TRiSM	Wireless-Value Realization	Industry Cloud Platforms	Digital Immune System	Platform Engineering	Superapps	Adaptive AI	Applied Observability	Metaverse
Now	0-1 year			1-2 years				2-3 years	
		●	●	●	●			●	

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Technologies Drive Much-Needed Business Outcomes

Optimize

Optimizing IT systems for greater reliability, improving data-driven decision making and maintaining value integrity of AI systems in production

Related Trends:

Digital Immune System

Applied Observability

AI TRiSM

Scale

Accelerating vertical offerings, increasing the pace of product delivery and enabling connectivity everywhere

Related Trends:

Industry Cloud Platforms

Platform Engineering

Wireless-Value Realization

Pioneer

Enabling business model change, reinventing engagement with employees and customers, and accelerating strategies to tap new virtual markets

Related Trends:

Superapps

Adaptive AI

Metaverse

Sustainable Technology

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Se espera que el impacto de la mayoría de las tecnologías en el empleo sea positivo en los próximos cinco años.

- La frontera hombre-máquina ha cambiado, con las empresas introduciendo la automatización en sus operaciones a un ritmo más lento de lo previsto anteriormente.

- Los roles de más rápido crecimiento en relación con su tamaño hoy en día están impulsados por la tecnología, la digitalización y la sostenibilidad.

- Los roles de más rápido declive en relación con su tamaño hoy en día están impulsados por la tecnología y la digitalización.

- Se espera un crecimiento del empleo a gran escala en la educación, la agricultura, el comercio digital y el comercio.

- Las pérdidas más significativas se esperan en los roles administrativos y tradicionales de seguridad, manufactura y comercio.

- El pensamiento analítico y el pensamiento creativo siguen siendo las habilidades más importantes para los trabajadores en 2023.

FIGURE B1.2 | Fastest growing job postings on LinkedIn 2018-2022

1. Talent Acquisition Associate — +53%
2. Sustainability Analyst — +45%
3. Sales Development Representative — +45%
4. Customer Success Analyst — +43%
5. Sustainability Specialist — +42%
6. Customer Success Associate — +42%
7. Growth Marketing Manager — +42%
8. Talent Acquisition Partner — +41%
9. Sustainability Manager — +40%
10. Workplace Coordinator — +39%

Annual average % growth

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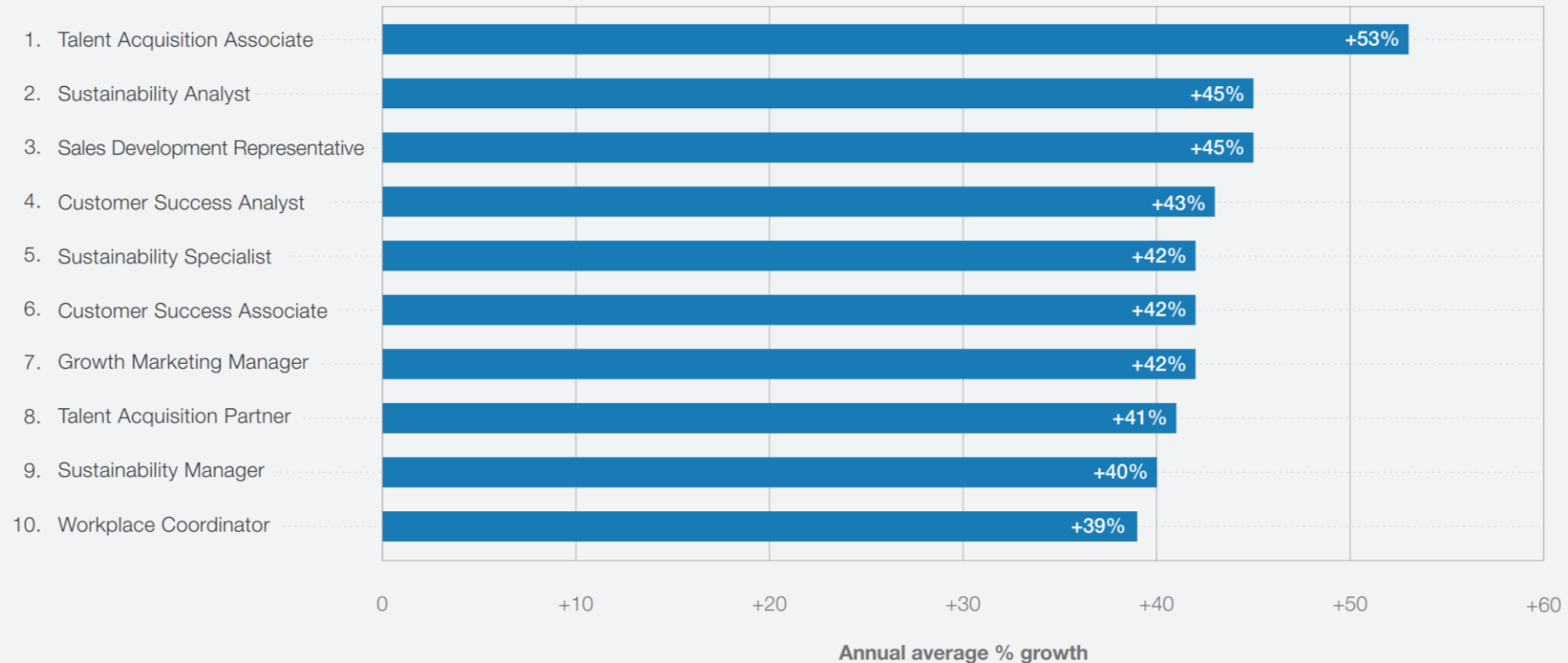& Research Trust

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FIGURE 2.1 | **Macrotrends driving business transformation**

Trends ranked by share of organizations surveyed that identified this trend as likely or increasingly likely to drive transformation in their organization.
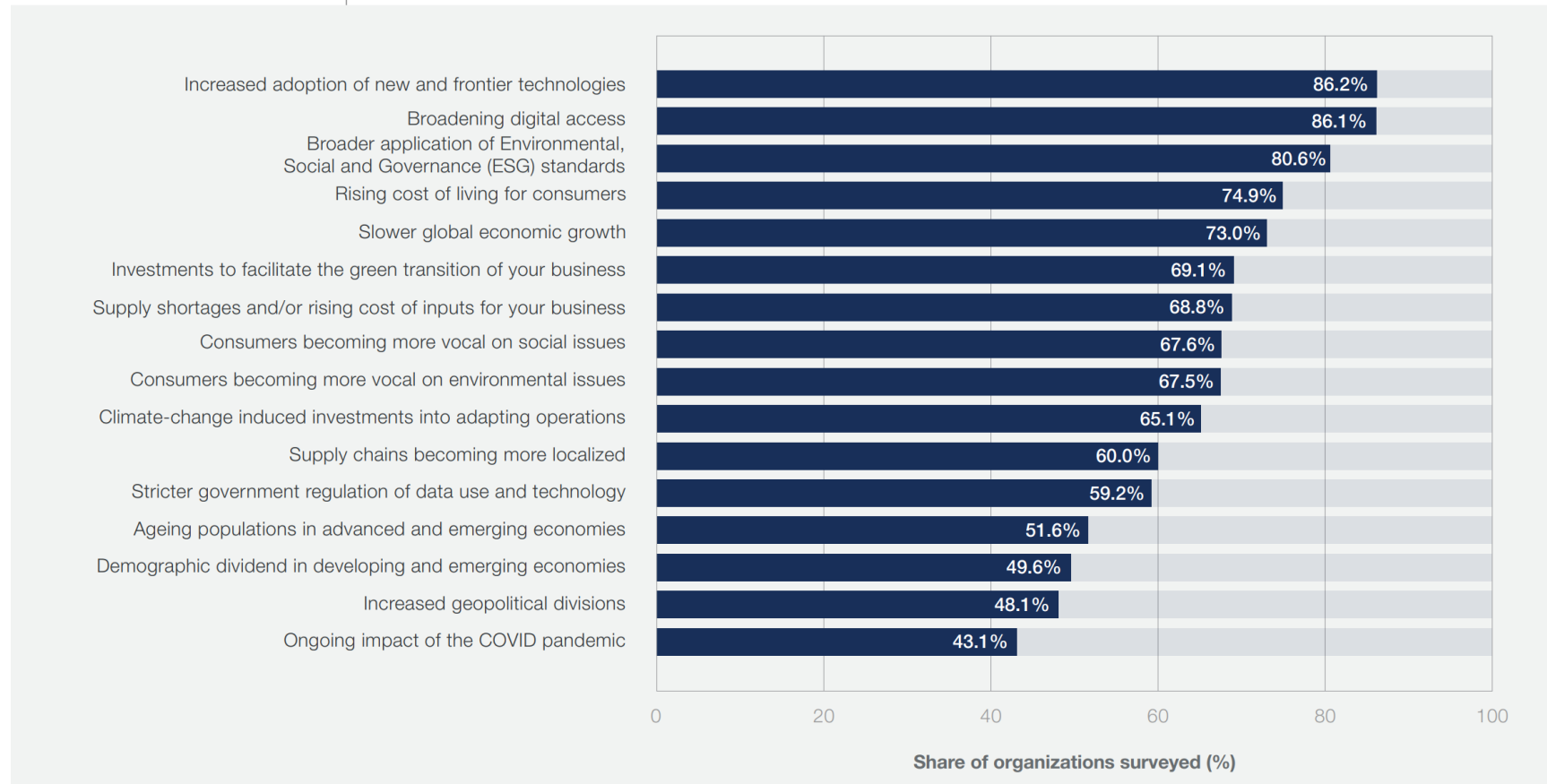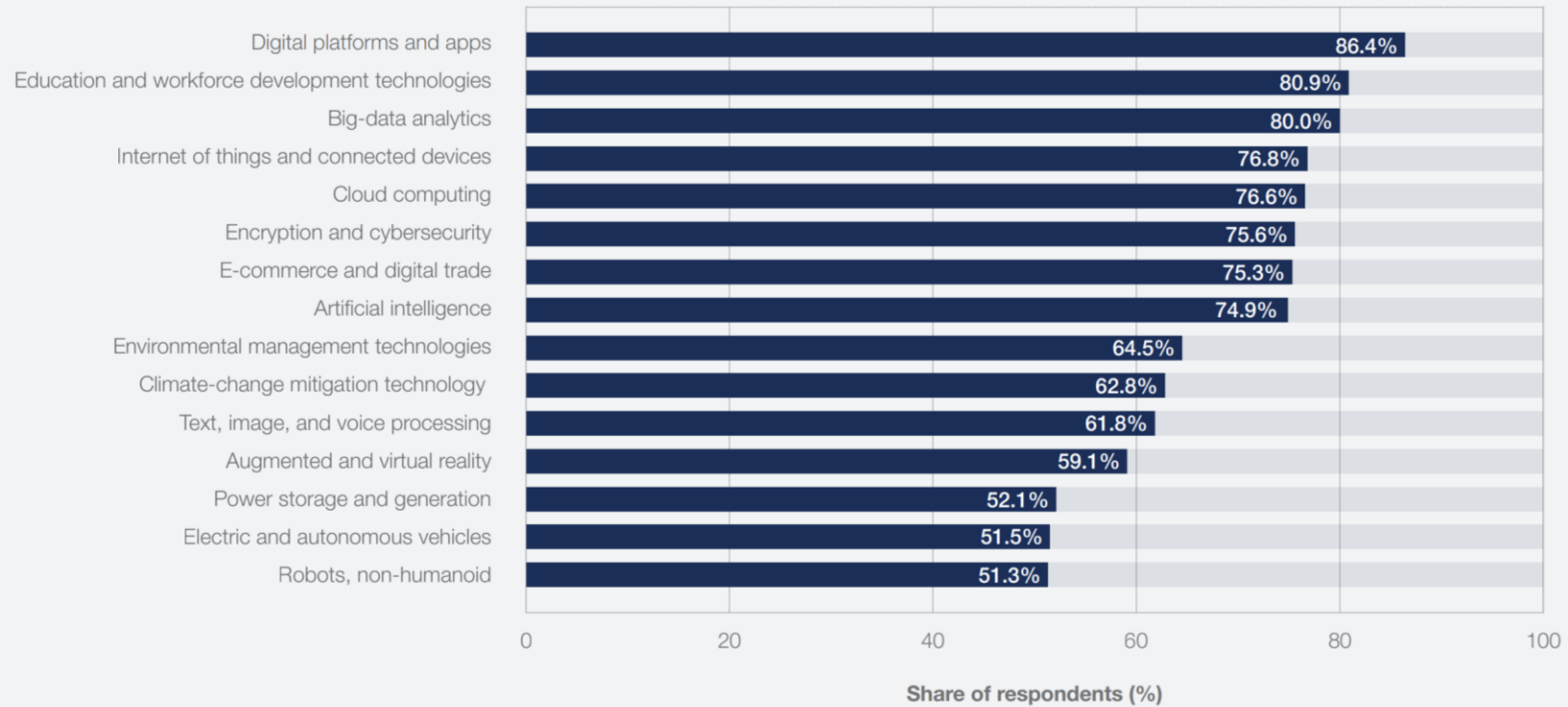
Trend	Share of organizations surveyed (%)
Increased adoption of new and frontier technologies	86.2%
Broadening digital access	86.1%
Broader application of Environmental, Social and Governance (ESG) standards	80.6%
Rising cost of living for consumers	74.9%
Slower global economic growth	73.0%
Investments to facilitate the green transition of your business	69.1%
Supply shortages and/or rising cost of inputs for your business	68.8%
Consumers becoming more vocal on social issues	67.6%
Consumers becoming more vocal on environmental issues	67.5%
Climate-change induced investments into adapting operations	65.1%
Supply chains becoming more localized	60.0%
Stricter government regulation of data use and technology	59.2%
Ageing populations in advanced and emerging economies	51.6%
Demographic dividend in developing and emerging economies	49.6%
Increased geopolitical divisions	48.1%
Ongoing impact of the COVID pandemic	43.1%

Share of organizations surveyed (%)

FIGURE 2.4 | Technology adoption, 2023-2027

Technologies ranked by the share of organizations surveyed who are likely or highly likely to adopt this technology over the next 5 years

Technology	Share of respondents (%)
Digital platforms and apps	86.4%
Education and workforce development technologies	80.9%
Big-data analytics	80.0%
Internet of things and connected devices	76.8%
Cloud computing	76.6%
Encryption and cybersecurity	75.6%
E-commerce and digital trade	75.3%
Artificial intelligence	74.9%
Environmental management technologies	64.5%
Climate-change mitigation technology	62.8%
Text, image, and voice processing	61.8%
Augmented and virtual reality	59.1%
Power storage and generation	52.1%
Electric and autonomous vehicles	51.5%
Robots, non-humanoid	51.3%

Source

World Economic Forum, Future of Jobs Survey 2023.

FIGURE 3.3 — New jobs and lost jobs, 2023-2027

Projected job creation (blue) and displacement (purple) between 2023 and 2027, as a fraction of current employment, for the global employee data set studied in this report. The projected net growth or decline for each occupation in the next five years (diamonds) calculated by subtracting the two fractions. The projected structural labour-market churn for each occupation in the next five years is the sum of the two fractions, and is indicated by the full width of the bars. Averaged across occupations, structural labour-market churn represents 23% of current employment.
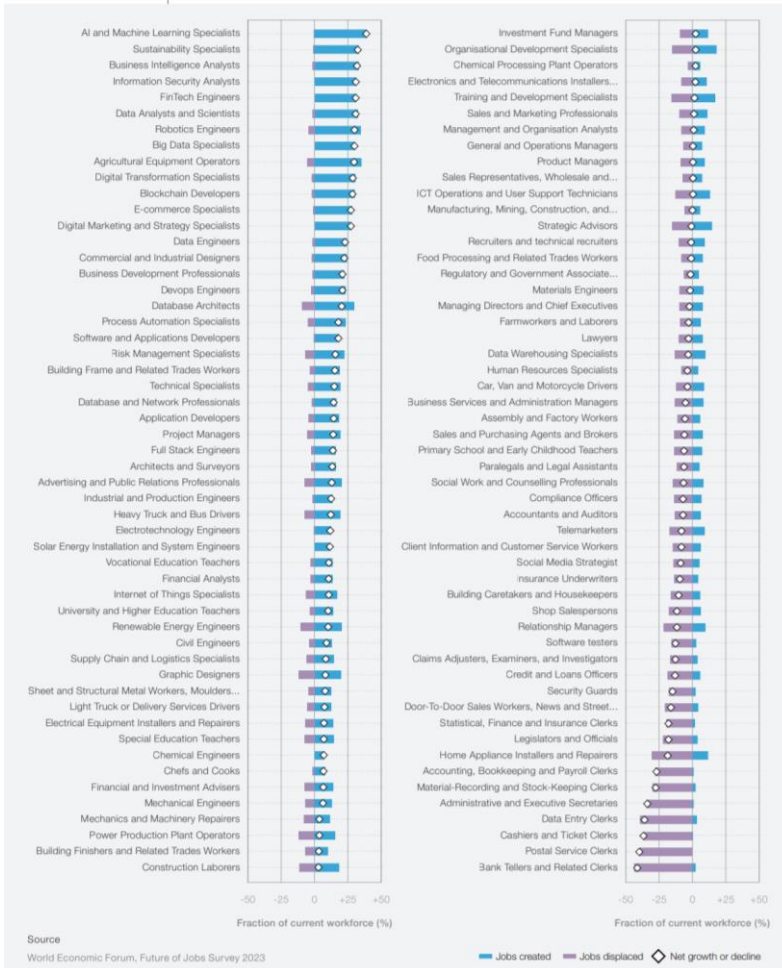
Source: World Economic Forum, Future of Jobs Survey 2023

FIGURE 3.4 | **Largest job growth, millions**

Top roles ordered by largest net job growth, calculated based on ILO Occupation Employment statistics and growth reported by organizations surveyed

Source

World Economic Forum, Future of Jobs Survey 2023.
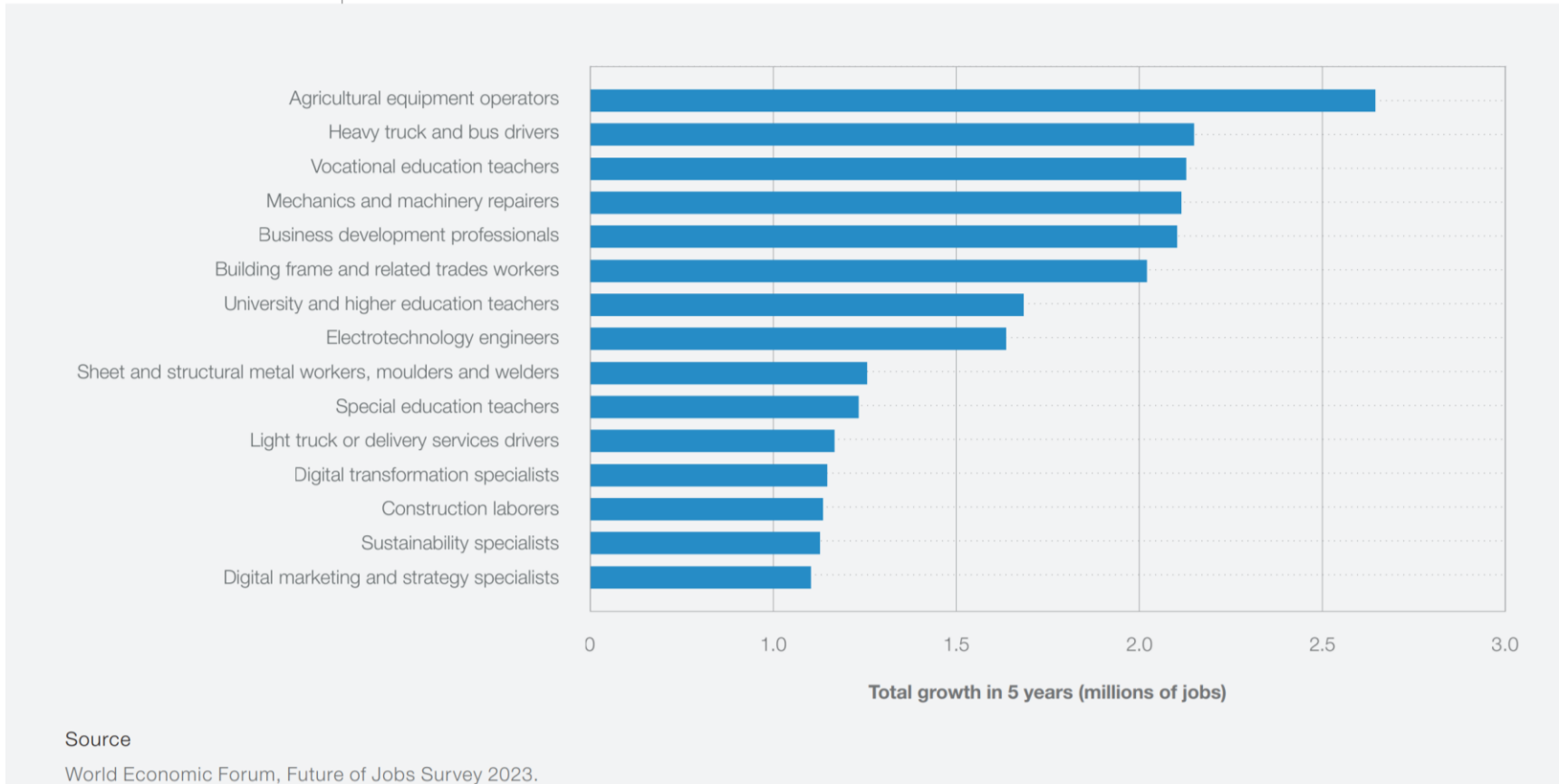
FIGURE 3.5 | **Largest job decline, millions**

Top roles ordered by the largest net jobs reduction, calculated based on ILO Occupation Employment statistics and growth reported by organizations surveyed

Data entry clerks
Administrative and executive secretaries
Accounting, bookkeeping and payroll clerks
Security guards
Building caretakers and housekeepers
Cashiers and ticket clerks
Material-recording and stock-keeping clerks
Assembly and factory workers
Postal service clerks
Bank tellers and related clerks
Shop salespersons
Telemarketers
Client information and customer service workers
Business services and administration managers
Door-to-door sales workers, news and street vendors, and related workers

-10.0   -7.5   -5.0   -2.5   0

Total decline in 5 years (millions of jobs)

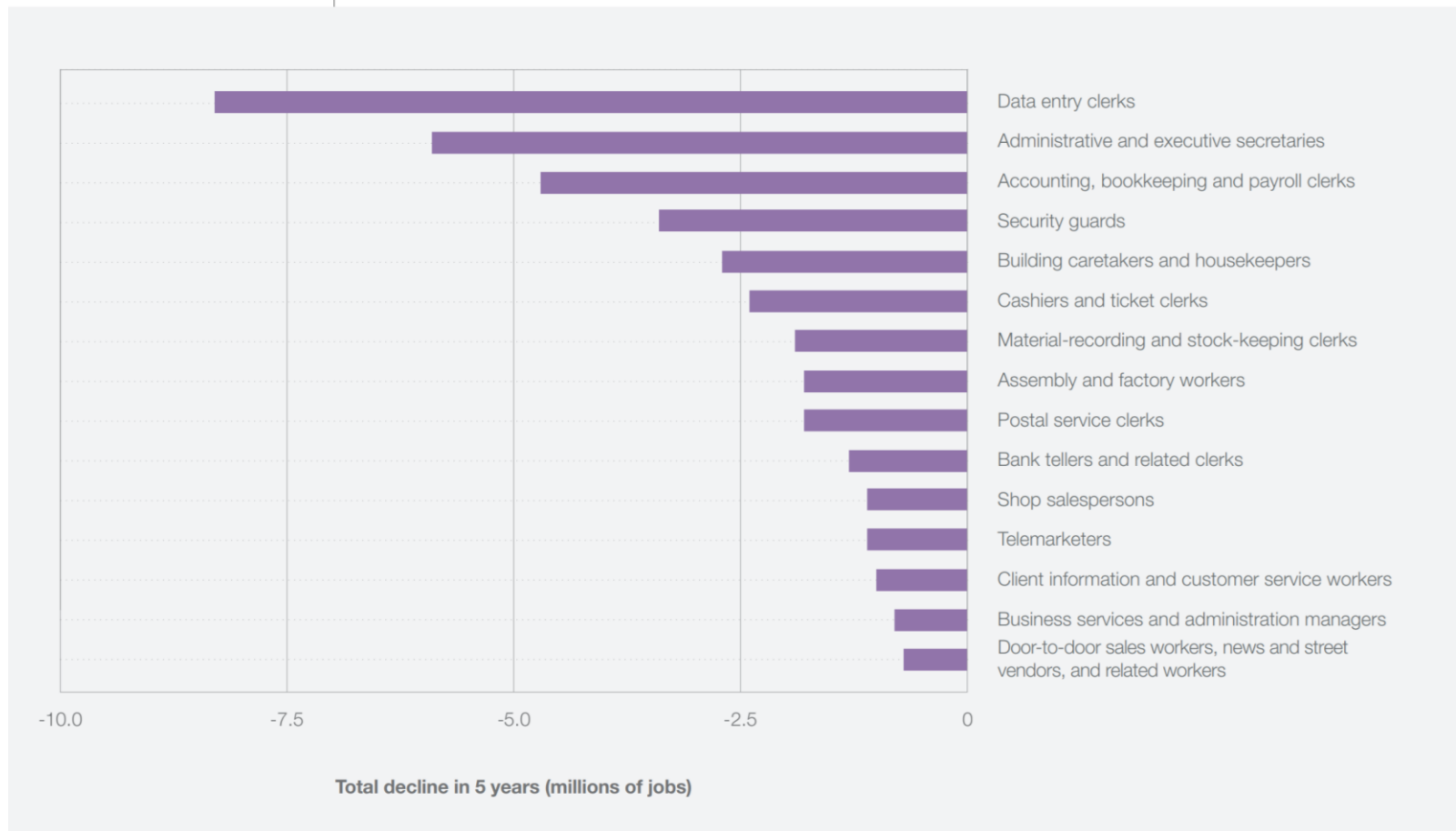FIGURE 4.1 | **Disruptions to skills**

Evolution in the shares of workers' core skills which will change and which will remain the same in the next five years

Share of worker skill sets (%)

2016: 35% / 65%
2018: 42% / 58%
2020: 57% / 43%
2023: 44% / 56%

Survey year

■ Core skills which will change in the next five years   ■ Core skills which will remain the same in the next five years
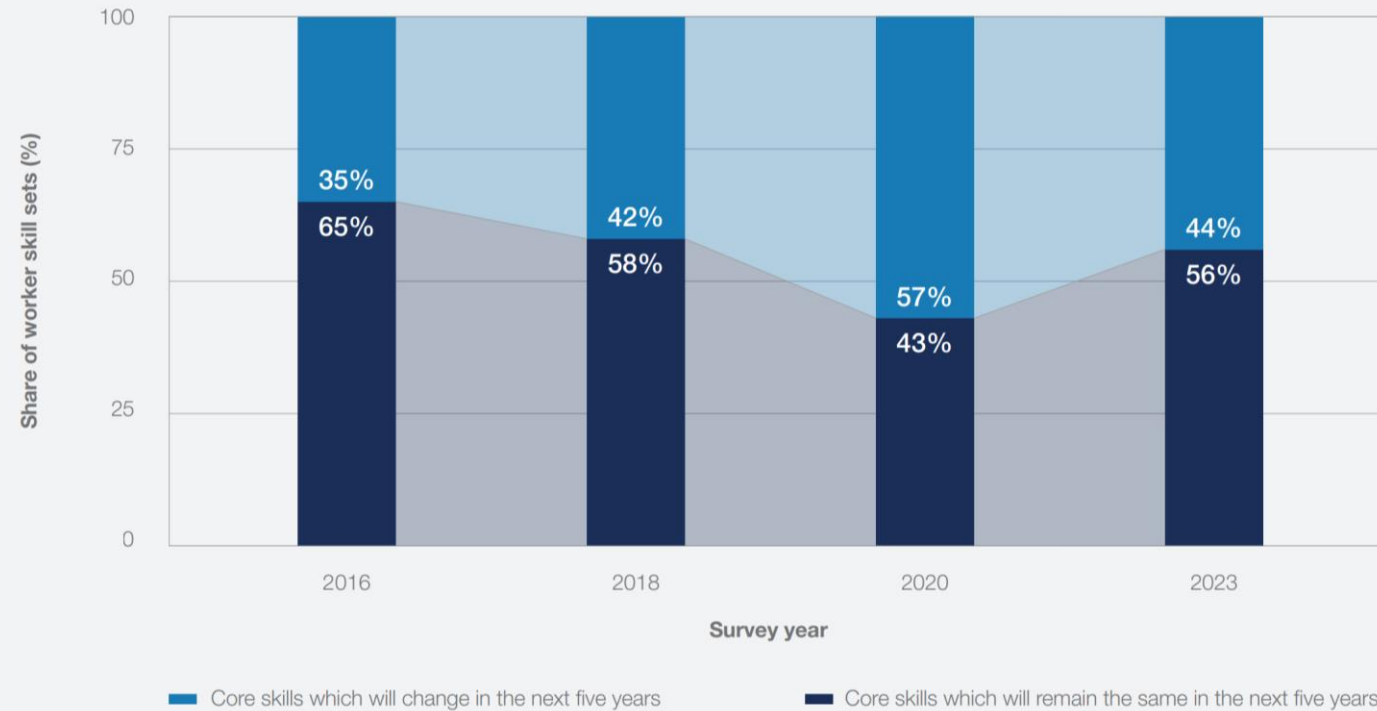
Source
World Economic Forum, Future of Jobs Surveys 2016, 2018, 2020 and 2023.

Note
Values reported are the mean skill stability percentages estimated by organizations surveyed in each edition of the survey.

FIGURE 4.3 | **Skills on the rise**

Share of organizations surveyed which consider skills to be increasing or decreasing in importance, ordered by the net difference.
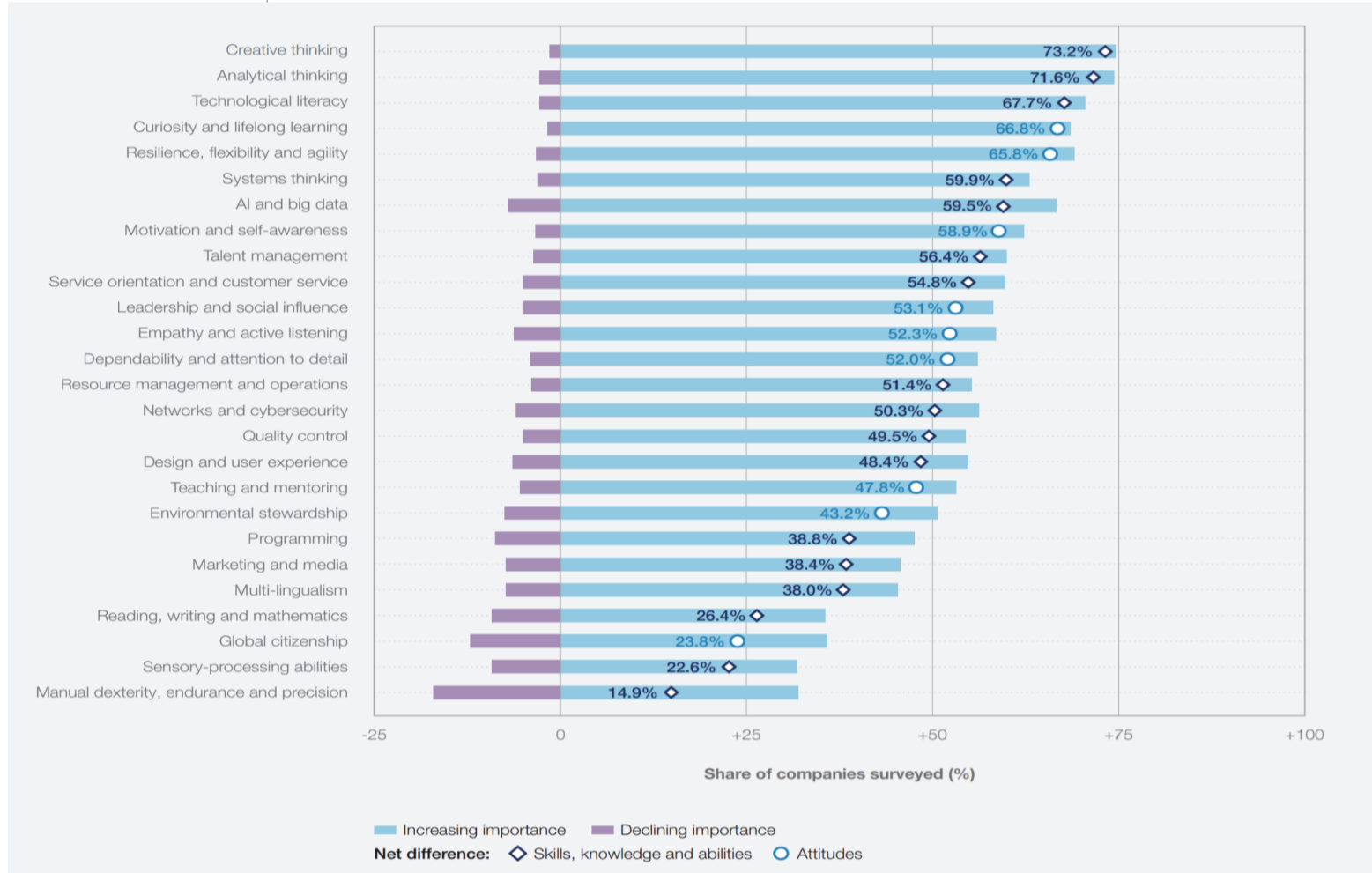
Skill	Value
Creative thinking	73.2%
Analytical thinking	71.6%
Technological literacy	67.7%
Curiosity and lifelong learning	66.8%
Resilience, flexibility and agility	65.8%
Systems thinking	59.9%
AI and big data	59.5%
Motivation and self-awareness	58.9%
Talent management	56.4%
Service orientation and customer service	54.8%
Leadership and social influence	53.1%
Empathy and active listening	52.3%
Dependability and attention to detail	52.0%
Resource management and operations	51.4%
Networks and cybersecurity	50.3%
Quality control	49.5%
Design and user experience	48.4%
Teaching and mentoring	47.8%
Environmental stewardship	43.2%
Programming	38.8%
Marketing and media	38.4%
Multi-lingualism	38.0%
Reading, writing and mathematics	26.4%
Global citizenship	23.8%
Sensory-processing abilities	22.6%
Manual dexterity, endurance and precision	14.9%

Share of companies surveyed (%)

Increasing importance   Declining importance

Net difference: ◇ Skills, knowledge and abilities   ○ Attitudes

Questions & Answers