REGIONAL DIFFERENCES IN WORKFORCE AI TRUST AND TECHNOLOGY OPTIMISM: A DATA-DRIVEN ANALYSIS

Masudbek Muminov Mansurjon o'g'li

Qabul qilindi: 03.11.2025
Ko'rib chiqildi: 04.11.2025
Tasdiqlandi: 05.11.2025

ABSTRACT. Automation and AI systems are transforming workplaces, but the impact of these technologies varies across local contexts. Workers' willingness to trust and adopt AI plays a crucial role in how these changes materialize. Trust in AI differs among employees, and notably, these trust levels vary between regions. Drawing on a comprehensive 2024 worker survey across multiple countries and an extensive body of literature on technology, trust, and organizational change, this study explores the factors that influence workers' AI trust and technology optimism. It examines how these factors interact to shape workers' perceptions of automation and emerging technologies.

The research focuses on the interplay between the industrial and regulatory environments and workers' personal experiences with AI, particularly in the US and Europe. While external indicators of market innovation offer limited insight into technology optimism, individual exposure to and interaction with AI, organizational AI adoption, and industry of employment emerge as key determinants of AI trust. Moreover, the regulatory framework—including technology governance, social safety nets, and institutional trust—appears linked to workers' perspectives on the societal, economic, and occupational implications of new technologies. Individual propensity for interpersonal trust also influences AI trust formation, though its significance varies regionally.

By identifying the factors shaping workers' relationships with AI, this study provides evidence to help societies maximize the benefits of emerging technologies while enabling the workforce to adopt and thrive alongside them confidently.

Introduction. The impact of Artificial Intelligence (AI) on work differs widely across industries and regions due to a variety of contextual factors. In particular, successful workplace transformation through automation and AI depends heavily on workers' experience with the technology and their level of trust in it. Individual levels of AI optimism vary considerably: technology optimists highlight the societal benefits of AI, whereas skeptics focus on its

potential risks. With the rapid rise of AI, these perspectives have become increasingly polarized.

Optimists argue that AI can reliably handle many tasks, allowing humans to focus on more meaningful or engaging work. However, overreliance on automation can lead to misuse, often driven by automation bias—the tendency to trust automated decisions while ignoring contradictory evidence. Skeptics, on the other hand, are cautious because their trust in AI does not match their perception of its capabilities, leading them to avoid or "disuse" such technologies. The ideal scenario occurs when users calibrate their trust appropriately, accounting for the technology's maturity and reliability. While achieving this balance is challenging, it is a crucial focus for technology policy research. Understanding the factors shaping AI trust and optimism is therefore essential.

Recent studies reveal substantial regional differences in workers' perceptions of automation, and this research seeks to identify the key factors driving these variations. Workers' trust and attitudes toward technology are influenced by multiple interconnected elements, including cultural norms, media portrayals of AI, industry and market context, workplace interactions, and personal experiences with AI. Workers' perspectives are especially important, as they are at the forefront of adopting new technologies and unlocking their potential across industries and use cases.

For institutions, organizations, and governments, understanding what drives workers' AI optimism is vital to fostering constructive relationships with AI, accelerating adoption, and harnessing its transformative effects. Crucially, this should be achieved in a healthy, gradual manner, allowing workers to build familiarity and confidence. Encouraging equitable adoption of emerging technologies equips the workforce to meet future challenges, enhances inclusivity, and promotes opportunities for skill development and economic resilience.

Methodology

This thesis employs a multi-stage research design to examine how industrial, institutional, and individual-specific factors are associated with workers' trust in AI and their perceptions of the impact of new technologies on economic and societal outcomes. The methodology combines a literature review and hypothesis development with empirical evaluation using an international survey of approximately 9,000 workers.

The literature review provides the foundation for developing hypotheses about how cross-country differences influence workers' AI trust and their perceptions of automation's societal and economic effects. Recognizing that no single factor can fully explain regional variation, three categories of influencing factors are identified:

Industrial landscape hypotheses – Investigate whether the market and sector in which workers are employed are related to their trust in AI and their expectations about the future impact of new technologies on the economy and society.

Individual factors hypotheses – Examine how personal experiences with AI, including exposure and interaction, as well as interpersonal trust propensity, contribute to differences in AI trust and perceptions of technology's implications.

Institutions and regulatory landscape hypotheses – Explore the relationship between AI-related policies, labor laws, and workers' trust in AI, alongside their expectations of automation's impact on society and the economy.

To test these hypotheses, the study uses a large-scale survey conducted in January 2024 by the MIT Industrial Performance Center in collaboration with IPSOS, targeting over 9,000 workers across nine countries: Australia, France, Germany, Italy, Japan, Poland, Spain, the UK, and the US. The analysis focuses on the US and seven European countries. The survey collected detailed information on respondents' jobs, attitudes toward work, skills and tasks, and perceptions of technology's impact. It included over 200 questions covering five main themes: work environment, technology interaction, attitudes toward work and technology, perceived impact of technology on personal and colleagues' work, an embedded hypothetical technology experiment, and reactions to different technology designs. This approach captures regional and national variations in AI trust and perceptions.

Surveys are particularly suitable for this research, as they allow systematic collection of subjective perceptions, attitudes, and beliefs regarding AI and new technologies. Presenting the same questions to all respondents ensures consistency, enabling meaningful comparisons across demographics and industries. Moreover, since AI trust and perceptions of technological impact can vary in meaning across individuals, this approach illuminates the socially constructed nature of these concepts.

Dependent Variables

1.

Trust in AI – Measured via a Likert-scale survey question asking respondents the extent to which they agree with the statement: "Generally, I trust Artificial Intelligence." Respondents interpreted "trust" according to their own understanding, allowing the analysis to capture subjective and context-dependent perspectives.

Perceived impact of new technologies and automation – Measured through Likert-scale questions on expected societal and economic outcomes over

the next ten years. The survey assessed ten areas: worker productivity, job satisfaction, job security, health and safety, access to jobs, wages, autonomy, consumer outcomes, community impact, national economy, and the national job market. Respondents also rated the expected impact on their own jobs, including safety or comfort, productivity, pay, autonomy, skill development, career growth, and job security.

This methodology enables the study to systematically analyze how industrial, institutional, and individual factors shape workers' AI trust and technology optimism across regional contexts.

Developing Hypotheses

This thesis investigates how regionally varying characteristics influence workers' trust in AI and their perceptions of the broader future impact of new technologies and automation on the economy, society, and jobs. The analysis is conducted by formulating hypotheses that link specific independent variables to these outcomes. Some hypotheses are directly supported by existing literature—for example, the idea that a person's general propensity to trust others translates into trust in automation—while others are inspired by prior findings, such as the suggestion that stronger labor protections may shape workers' perceptions of job security amid technological change.

This chapter presents six hypotheses, which will later be assessed for acceptance, rejection, or further discussion using survey data in Chapter 3. The hypotheses are grouped into three categories based on the type of influencing factor: the industrial landscape, individual factors, and institutional/regulatory context.

Summary of Hypotheses:

H1.1: Workers in economies with a strong high-technology market are more likely to perceive new technologies positively.

H1.2: Trust in AI is higher in sectors with greater technology adoption.

H2.1: Workers with more interaction and familiarity with AI will exhibit higher trust in AI.

H2.2: Workers with a higher general propensity to trust will demonstrate greater trust in AI and view new technologies as beneficial.

H3.1: Workers in markets with clear AI regulations are more likely to trust AI systems.

H3.2: Workers in countries with robust labor and social safety nets are likely to be less concerned about the impact of new technologies on jobs.

The Role of the Industrial Landscape

The industrial environment in which a worker is employed can significantly influence their trust in AI and overall technology optimism. A central question is whether a worker's optimism about the impact of new technologies is higher when they operate in a market characterized by emerging innovative technology companies, steady investment flows, and dynamic entrepreneurial activity.

This study also considers how a worker's sector, and specifically the level of technology adoption within their organization, affects their relationship with AI. Analyzing AI trust from a sectoral perspective provides valuable insights, as trends in AI adoption and trust often differ across sectors.

In this subchapter, the industrial landscape is examined through the lens of US and European markets to develop two hypotheses regarding how these characteristics shape workers' trust in AI and their perceptions of the future economic and societal impacts of new technologies and automation.

AI Policy

The concept of "trustworthy" AI is widely cited in AI policy, often framed as a central goal of public and private governance initiatives. Trust between humans and AI depends on multiple factors. Tamò-Larrieux et al. identify sixteen factors grouped into four categories: characteristics of the AI system (trusted party), characteristics of the user (trusting party), attributes of the trusted act, and features of the surrounding environment.

Legal frameworks play an important role in shaping people's trust in technology, which in turn affects how they perceive AI's societal impact. Technology optimists often tend to overtrust AI. Tiles and Oberdiek argue that optimists view technology as value-neutral tools: any harm caused by misuse is attributed to human operators rather than the technology itself. Optimists therefore focus less on potential risks, often advancing deployment without sufficient safeguards. Properly designed and enforced technology policies can counteract overtrust by establishing accountability standards for development, deployment, and use. Regulatory rules can also serve an educational function, signaling the appropriate level of trust in technology. Conversely, the absence of clear regulations may foster optimism regarding AI's economic potential.

In contexts where trust is low, legislation can reassure users who are hesitant to rely on technology by providing mechanisms to control its impact. Although regulations reduce uncertainty and vulnerability in human-technology interactions, trust still depends on user judgment, since perfect enforcement of rules is rarely achievable. Obligatory or prohibitive regulations can build trust by defining clear boundaries and demonstrating government oversight. However, overly restrictive rules may stifle innovation, promote mere compliance rather than genuine trust, and impose disproportionately high costs on small and

medium enterprises. In contrast, monitoring and auditing policies can foster sustainable trust by encouraging transparency, accountability, and adaptability as technology evolves, though they require specialized expertise and may not fully prevent risks.

Regardless of approach—whether prescriptive or governance-focused—regulatory measures aim to cultivate trust in AI and its applications, effectively granting a "social license to operate." Survey evidence from Ipsos indicates that in highly developed democratic nations, public perceptions of AI can be less positive, possibly due to greater perceived stakes and reliance on institutional oversight. At the same time, strong regulatory frameworks, particularly those ensuring privacy, can enhance trust by providing institutional assurance.

Based on these insights, the following hypothesis is developed:

Workers in Markets with Clear AI Rules Are More Likely to Trust AI Systems

Regulatory frameworks play a crucial role in shaping workers' trust in AI. In 2022, the White House Office of Science and Technology Policy released the **AI Bill of Rights**, titled *Blueprint for an AI Bill of Rights: Making Automated Systems Work for the American People*. It outlines five core principles to guide the design, deployment, and use of automated systems, emphasizing safety, effectiveness, protection against algorithmic discrimination, data privacy, transparency, human alternatives, and fallback mechanisms.

Building on this, in 2023, the White House issued **Executive Order 14110**, *Safe, Secure, and Trustworthy Development and Use of AI*, directing 50 federal agencies to advance initiatives on safety and security, innovation, worker support, bias and civil rights considerations, consumer protection, privacy, federal AI use, and international leadership. In 2025, **Executive Order 14179**, *Removing Barriers to American Leadership in Artificial Intelligence*, further reinforced US AI leadership, prioritizing human well-being, economic competitiveness, and national security, and required a comprehensive AI plan within 180 days to achieve these goals.

At the state level, several policies address AI systems or specific use cases. Comprehensive regulations include the **Colorado AI Act** and **Virginia's High-Risk AI Developer & Deployer Act**, while other states focus on narrower applications, such as algorithmic decision-making in rental housing, with 19 states introducing relevant legislation.

Industry self-regulation also plays an important role, with technology companies setting standards for AI governance. Moreover, risks associated with AI can be mitigated through pre-existing legal frameworks, including consumer protection, anti-discrimination, and liability laws. Collectively, these measures provide a structured environment that can increase worker confidence and trust

in AI systems.

Data Analysis and Results

The hypotheses in this study aim to explore the factors shaping workers' perceptions of the societal and economic impact of new technologies, as well as their trust in AI. The analysis does not assume a single underlying cause for these perceptions. Rather, it recognizes that opinions are influenced by a complex interplay of multiple factors, which this chapter seeks to illuminate using statistical evidence.

A combination of comparative statistical analyses and multivariate logistic regression models is employed to provide detailed insights into the mechanisms driving workers' views on AI and technological change. This approach allows for a nuanced understanding of how different variables interact, emphasizing broader dynamics in the societal and economic context of technological adoption. By considering these interrelated factors, the analysis aims to capture the complexity of workers' trust in AI and their perceptions of its potential impact.

In Table 3.1, we focus on the perceived net positive impact on the labor market. Notably, while higher percentages undeniably signal optimism, lower percentages should not necessarily be interpreted as pessimistic views. They may simply indicate countries with well-established social safety nets or already satisfactory or relatively high levels of labor market metrics.

Table 3.1: Countries' innovation indicators, and % of workers who believe new technologies and automation will have a net positive societal impact on various aspects of society and the economy

Country	Innovation indicators [59]			Perceived net positive impact on				
	AI Private investment (2013-24 in $B)	New AI companies (2013-24)	Industrial robots installed (2023 in K)	National Economy	Access to Jobs	Job Market	Job Security	Consumers
US	470.9	6956	37.6	52.1%	37%	36.5%	25.5%	62.8%
UK	28.2	885	3.8	52.5%	40.7%	38.3%	32.3%	59.9%
FRA	11.1	468	6.4	44.9%	38.7%	37.2%	37%	43.1%
GER	13.3	394	28.4	40.4%	35.1%	33.3%	33.3%	43.4%
IT	1.4	85	10.4	51.7%	46.6%	52.4%	52.6%	58.3%
POL	0.4	48	N/A	56%	45.8%	47.6%	63.4%	60.8%
SPA	2.7	117	5.1	55.4%	46.8%	46.8%	48.4%	59.4%

Sector-Level Technology and AI Adoption

The hypothesis that workers' trust in AI is higher in sectors with extensive technology and AI adoption is supported by the data. However, increased AI adoption by employers does not automatically lead to greater optimism about new technologies among workers, suggesting that AI trust and technology optimism develop through different processes.

Figure 3.1 highlights that the sectors with the highest reported rates of technology adoption by employers include **Technology**, **Consumer Packaged Goods**, **Manufacturing**, **Automotive**, **Mining and Extraction**, and **Media, Publishing, Telecommunications, and Data Processing**. While the technology and media-related sectors are expected to actively champion technological adoption, the physical industries—such as manufacturing, automotive, and mining—have likely integrated automation technologies, including robotics and industrial machinery, over several years. Workers in these sectors also show proportionally higher levels of AI trust, indicating a positive correlation between employer technology adoption and employee trust in AI.

Similarly, survey results indicate that **Technology**, **Media, Publishing, Telecommunications, and Data Processing**, **Consumer Packaged Goods**, **Financial Services**, **Automotive**, and **Manufacturing** are the sectors with the highest reported AI adoption by employers, ranging from 57% to 75% of employees within the sector. These industries are typically digitally native or have a high concentration of technologists and engineers, meaning their workforce is often well-trained and experienced in adopting and integrating new technologies. This likely contributes to both higher AI adoption rates and elevated trust in AI among workers.

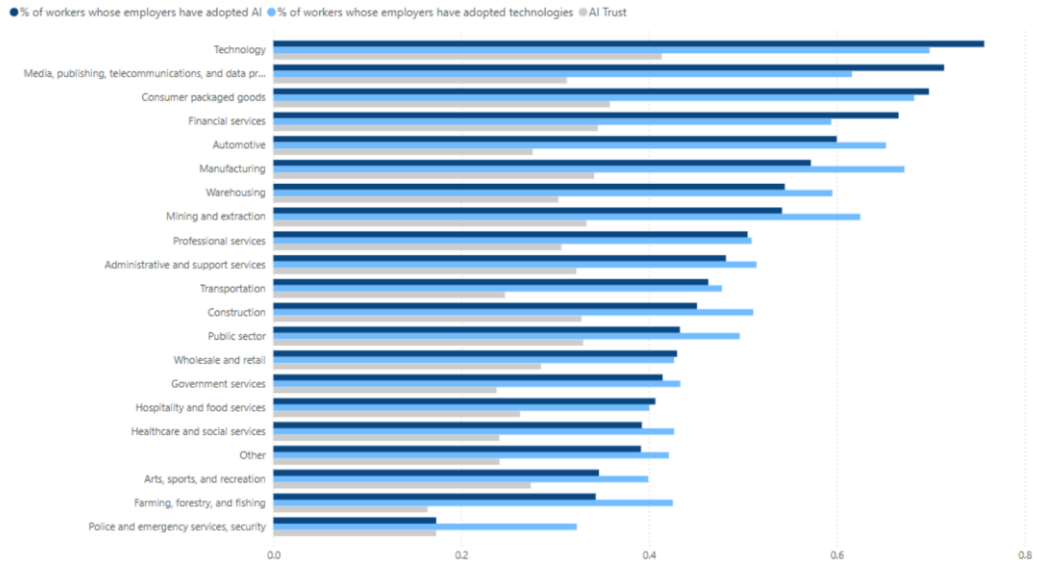


Figure 3.1: % of workers who declare their employers have adopted various technologies (Cloud computing, Software automation, AI, GenAI, Industrial machinery and equipment, Robotics), % of workers who declare their employers have adopted AI, % of workers who trust AI, by Industry

AI Trust and Sector-Level Correlations

Workers' reports of AI adoption by their employers are significantly correlated with their level of trust in AI, as shown in the multivariate logistic regression model (3.2). Figure 3.1 further illustrates that AI trust rates generally correspond with the proportion of employees reporting AI adoption in sectors with the highest and lowest adoption rates, while sectors with intermediate adoption levels show roughly similar levels of AI trust.

No single sector demonstrates strong significance across both regression models of AI trust in Figure 3.2. In model (2), which considers only industry variables, four sectors show a significant correlation with AI trust. However, when additional independent variables are included in model (1), the relative importance of the sector variable diminishes. The technology sector consistently shows a significant positive correlation with AI trust in model (2), as expected. Similar patterns are observed in models 3.3 and 3.4, which examine workers' perceptions of the positive impact of new technologies on their own jobs and on broader societal and economic outcomes.

The correlation between sector-level AI adoption and workers' AI trust suggests that targeted interventions are needed to strengthen confidence in AI for industry-specific applications. Across all examined sectors, the proportion of workers expressing trust in AI remains lower than the proportion reporting employer AI adoption. This gap highlights the need for alignment between organizational AI practices and employees' comfort levels, which could be addressed through targeted training and educational initiatives to facilitate effective AI integration in the workplace.

Table 3.2: Predictors of AI Trust

AI Trust	Model (1)	Model (2)
Intercept	-2.79 (0.17)***	-0.23 (0.05)***
Administrative and Support services	-0.11 (0.13)	-0.01 (0.12)
Arts, Sports, and Recreation	0.40 (0.24)*	0.27 (0.22)
Automotive	-0.38 (0.27)	0.12 (0.24)
Construction	0.03 (0.15)	0.07 (0.13)
Consumer Packaged Goods	0.22 (0.35)	0.40 (0.32)
Farming, Forestry, and Fishing	-0.80 (0.32)**	-0.8 (0.29)***
Financial services	-0.39 (0.14)***	0.12 (0.13)
Government Services	-0.34 (0.16)**	-0.46 (0.14)***
Healthcare and Social Services	-0.13 (0.12)	-0.2 (0.11)*
Hospitality and Food services	-0.17 (0.16)	-0.15 (0.15)
Manufacturing	-0.05 (0.14)	0.22 (0.12)*
Media, Publishing, Telco, Data processing	-0.83 (0.26)***	-0.27 (0.24)
Mining and Extraction	0.82 (0.58)	0.71 (0.53)
Police and Emergency services, Security	-0.48 (0.29)*	-0.77 (0.26)***
Professional services	-0.27 (0.14)**	-0.11 (0.12)
Public sector	-0.02 (0.16)	0.1 (0.15)
Technology	-0.11 (0.13)	0.57 (0.12)***
Transportation	0.08 (0.18)	-0.04 (0.16)
Warehousing	-0.27 (0.24)	-0.04 (0.22)
Wholesale	-0.01 (0.13)	0.04 (0.12)
Tech Implementation Oversight: Government	-0.56 (0.08)***	
Tech Implementation Oversight: Industry	-0.26 (0.07)***	
Tech Implementation Oversight: Workers	-0.94 (0.08)***	
Tech Implementation Oversight: None of the above/Other	-1.03 (0.11)***	
Employer has Adopted AI	0.33 (0.05)***	
AI Familiarity	0.30 (0.04)***	
Regular AI Interaction	0.32 (0.04)***	
Invested Employer	0.10 (0.05)*	
Job Satisfaction	-0.04 (0.05)	
Interpersonal Trust Propensity	0.31 (0.04)***	
Log-Likelihood	-2147	-2493.30
Observations	3702	3702

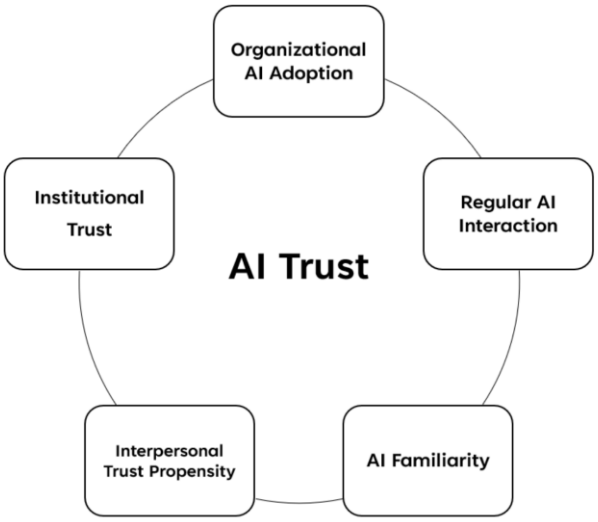
Observations are 3702, as the model does not utilize the Australian and Japanese workers samples, excludes records with skipped responses, and only utilizes the workers' responses who replied either 1-2 or 4-5 on the Likert scale in the following prompt: "Generally, I trust Artificial Intelligence."
Model (1) includes all the above independent variables
Model (2) includes only the industries as independent variables
Standard errors in parentheses.
* p<.1, ** p<.05, ***p<.01

Interpersonal Trust Propensity

Workers who generally tend to trust others also tend to place higher trust in AI and feel more optimistic about the impact of new technologies and automation on the economy, society, and their own jobs. However, AI trust emerges from a complex interplay of factors beyond general trust tendencies.

The AI trust logistic regression model (3.2) identifies interpersonal trust propensity as one of the most significant predictors of AI trust, with a positive coefficient of 0.31 and a highly significant correlation. Similarly, model 3.4 shows that workers with higher interpersonal trust propensity are, on average, more likely to believe that new technologies and automation will have a net positive effect on various societal and economic dimensions, with a significant positive coefficient of 0.24. Model 3.3 further illustrates that workers with a strong tendency to trust others are also more likely to anticipate positive impacts of new technologies on their own jobs, indicated by a highly significant coefficient of 0.19.

Despite these correlations, interpersonal trust propensity does not reliably predict AI trust at the country level, suggesting that national factors play a substantial role in shaping the alignment between general trust and AI trust. While some countries exhibit similar proportions of workers with high interpersonal trust and high AI trust, others do not. In the sample, country-level interpersonal trust ranges from 42% to 59%, but differences in AI trust across countries vary more widely, reinforcing that AI trust is a multifaceted phenomenon influenced by multiple contextual factors. This result may reflect specific characteristics of the sample, or it may indicate that the relationship between interpersonal trust and AI trust does not uniformly translate across national contexts, as illustrated in Figure 3.4.



Conclusion. This thesis has explored the complex factors shaping workers' trust in Artificial Intelligence (AI) and their optimism regarding the societal and economic impacts of new technologies and automation. Drawing on a large-scale international survey of over 9,000 workers across the US and Europe, the study highlights how industrial, individual, and institutional contexts collectively influence perceptions of AI.

Key findings indicate that sector-level technology and AI adoption strongly correlate with workers' AI trust, although adoption alone does not fully determine optimism about new technologies. Interpersonal trust propensity emerges as a critical individual-level predictor, positively associated with both AI trust and expectations of technological benefits for workers' jobs and society. However, the influence of interpersonal trust varies across national contexts, reflecting the importance of broader cultural and institutional factors.

References

1. T. Ueno, Y. Sawa, Y. Kim, J. Urakami, H. Oura, and K. Seaborn. "Trust in Human-AI Interaction: Scoping Out Models, Measures, and Methods". In: Extended Abstracts of the 2022 CHI Conference on Human Factors in Computing Systems. CHI EA '22. New Orleans, LA, USA: Association for Computing Machinery, 2022. isbn: 9781450391566. doi: 10.1145/3491101.3519772. url: https://doi.org/10.1145/3491101.3519772.

2. Y. Li, B. Wu, Y. Huang, and S. Luan. "Developing trustworthy artificial intelligence: insights from research on interpersonal, human-automation, and human-AI trust". In: Frontiers in Psychology Volume 15 - 2024 (2024). issn: 1664-1078. doi: 10.3389/fpsyg. 2024.1382693. url: https://www.frontiersin.org/journals/psychology/articles/10.3389/ fpsyg.2024.1382693.

3. B. Armstrong, V. K. Chen, A. Cuellar, A. Forsey-Smerek, and J. A. Shah. Automation from the Worker's Perspective. 2024. arXiv: 2409.20387 [cs.HC]. url: https://arxiv. org/abs/2409.20387.

4. D. Mahn, C. Wang, D. Kent, and C. Heaton. "The optimism effect on country productivity and innovation activities". In: Journal of Innovation Knowledge 9.4 (2024), p. 100565. issn: 2444-569X. doi: https://doi.org/10.1016/j.jik.2024.100565. url: https://www.sciencedirect.com/science/article/pii/S2444569X24001045.

5.E. Baranski, K. Sweeny, G. Gardiner, I. S. Project, and D. C. Funder. "International optimism: Correlates and consequences of dispositional optimism across 61 countries". In: Journal of personality 89.2 (2021), pp. 288–304. doi: 10.1111/jopy.12582. url: https://onlinelibrary.wiley.com/doi/10.1111/jopy.12582.

6.N. Gillespie, S. Lockey, C. Curtis, J. Pool, and Ali Akbari. Trust in Artificial Intelligence: A global study. Brisbane, Australia: The University of Queensland; KPMG Australia, Feb. 22, 2023. doi: 10.14264/00d3c94. url: https://espace.library.uq.edu.au/view/UQ: 00d3c94.