

AI in North Macedonia:

Adoption Rates, Readiness, and Barriers

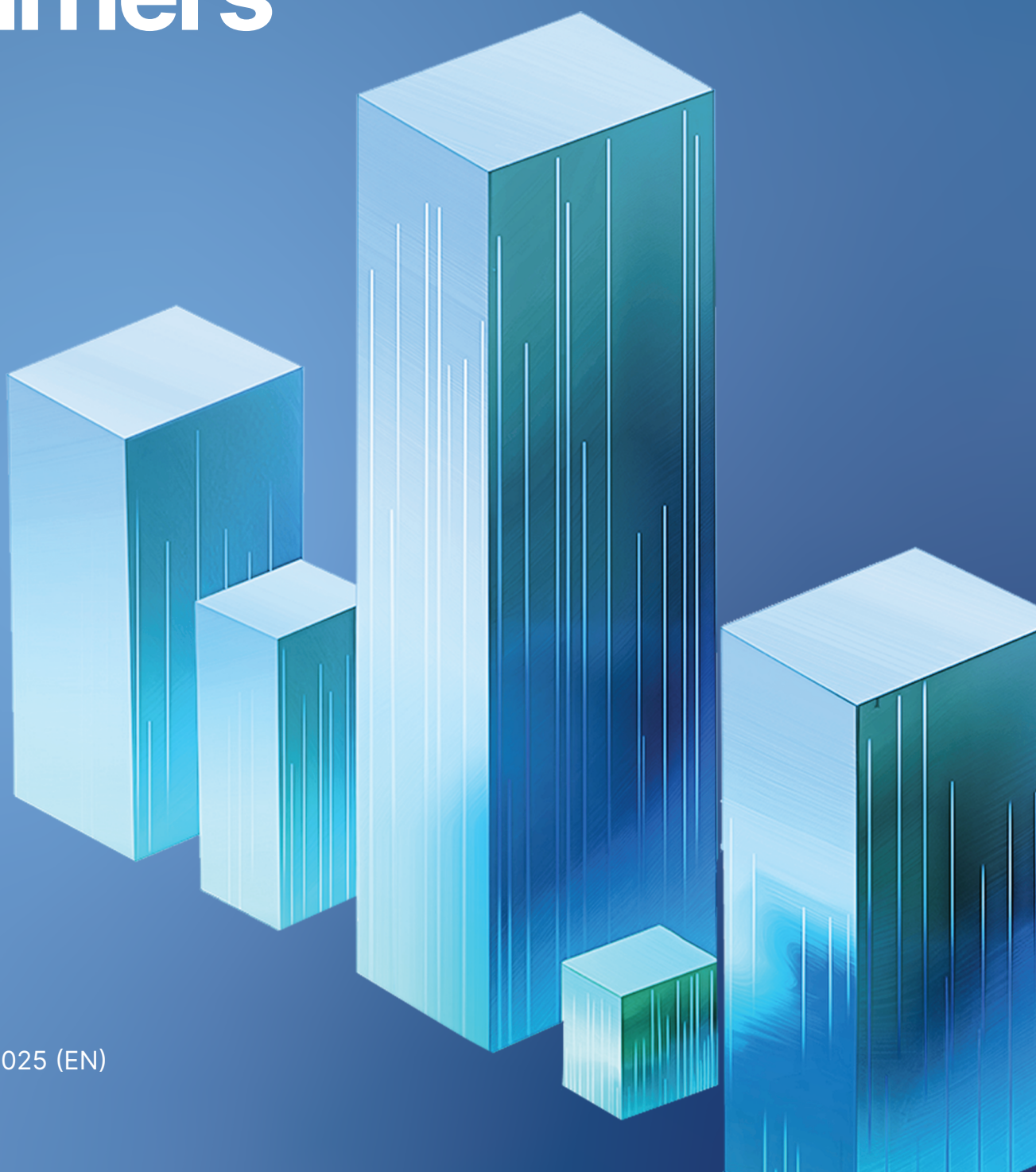




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AI in North Macedonia: Adoption Rates, Readiness, and Barriers

Executive Summary

AI is no longer a distant promise, but it is already shaping how teams in North Macedonia work, make decisions, and compete. This survey explores how AI is entering workplaces across North Macedonia, highlighting both the opportunities and the challenges facing teams in 2025.

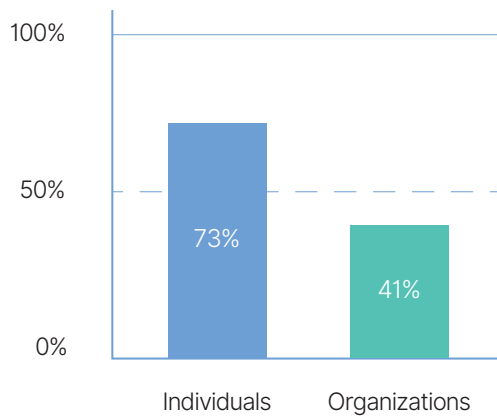
Conducted in July and August 2025 among professionals from startups, SMEs, large enterprises, NGOs, and the public sector, the survey captures a representative cross-section of the country's active workforce. The results show that while **73% of individuals use AI tools personally**, only **41% of organizations** are actively using or testing them. This 1.8× readiness gap represents untapped potential that could be leveraged with targeted strategies, training, and leadership commitment.

The strongest areas of current AI use are in **content creation (54%)** and **data analysis (31%)**, with early adoption also visible in software development, customer service, and marketing. Across sectors, **lack of knowledge or training (34%)** is the leading barrier, outweighing concerns about cost, while **misinformation (28%)** and **privacy (27%)** top the list of perceived risks.

Encouragingly, over **70% of respondents mostly or fully trust AI-generated outputs**, and more than half want practical training, clear AI strategies, and locally relevant case studies to guide adoption. The public sector and large organizations tend to be slower to act, while startups and SMEs lead in active deployment.

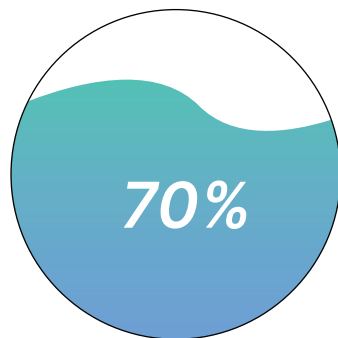
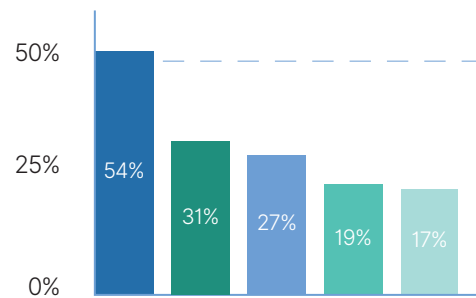
Looking ahead, **88% of respondents expect AI to play a significant role in their work within two years**, whether through automation, daily integration, or the creation of new tools. This optimism, paired with a call for structure, transparency, and safety, signals a pivotal moment for leaders, policymakers, and educators to accelerate responsible adoption.

The chapters that follow explore adoption patterns, skill levels, barriers, trust and safety perceptions, support needs, and future expectations, concluding with recommendations to close the readiness gap and position North Macedonia for a competitive AI-enabled future.



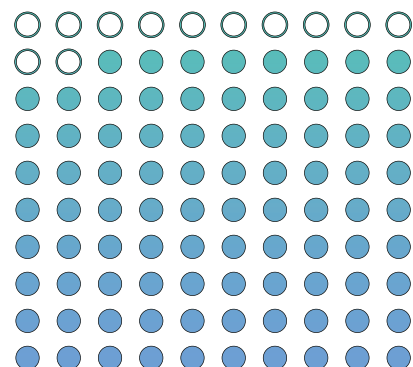
Graph 1. Personal vs. Organizational Adoption
Shows the 1.8× readiness gap: 73% of individuals already use AI personally, compared to just 41% of organizations formally using or testing it. This highlights untapped internal capacity.

Graph 2. Where AI Is Used Today
Content creation leads to AI adoption (54%), followed by data analysis (31%), marketing/social media (27%), software development (19%), and customer service (17%).



Graph 3. Trust in AI Outputs
Over 70% of respondents mostly or fully trust AI-generated outputs. This indicates cautious optimism, AI is seen as valuable but still requires validation.

Graph 4. 2-Year Outlook for AI
88% of respondents expect AI to play a significant role in their work within two years.





Introduction

Artificial Intelligence has moved from a niche technology to a core driver of innovation and efficiency worldwide and North Macedonia is no exception. In recent years, global advances in AI tools and automation have created both opportunities and challenges for organizations of all sizes. Locally, conversations around AI are shifting from “if” to “how,” as businesses, public institutions, and individuals explore its potential.

This report was developed to provide a clear, data-backed view of where North Macedonia stands in 2025. It examines how AI is being used, where adoption is strongest, what barriers remain, and how prepared the workforce is for the changes ahead. The goal is not only to measure current adoption, but also to inform leaders, policymakers, and educators about the practical steps needed to accelerate safe and impactful AI integration.

The findings are based on a nationwide survey conducted in July and August 2025, reaching professionals from startups, SMEs, large enterprises, NGOs, and the public sector. The survey was available in both Macedonian and English to ensure accessibility, and respondents represented a diverse mix of roles from executives and managers to specialists, consultants, and public sector employees.

Methodologically, the sample size provides a 95% confidence margin of error of approximately ± 8 percentage points for proportions near 50%, with margins increasing for smaller subgroups. While not a fully randomized national sample, the diversity of responses and the consistency of patterns across sectors provide a reliable directional view of the country's AI adoption landscape. Detailed methodology, including statistical notes, is provided in the Technical Appendix.¹

This report combines survey findings with practical insights, showing not just the current state of adoption but also the pathways forward. Together, they provide a foundation for shaping policies, strategies, and initiatives that can help North Macedonia fully harness AI's potential.

¹ See Technical Appendix, p. 29, for full details on methodology and statistical confidence calculations.

The Adoption Picture



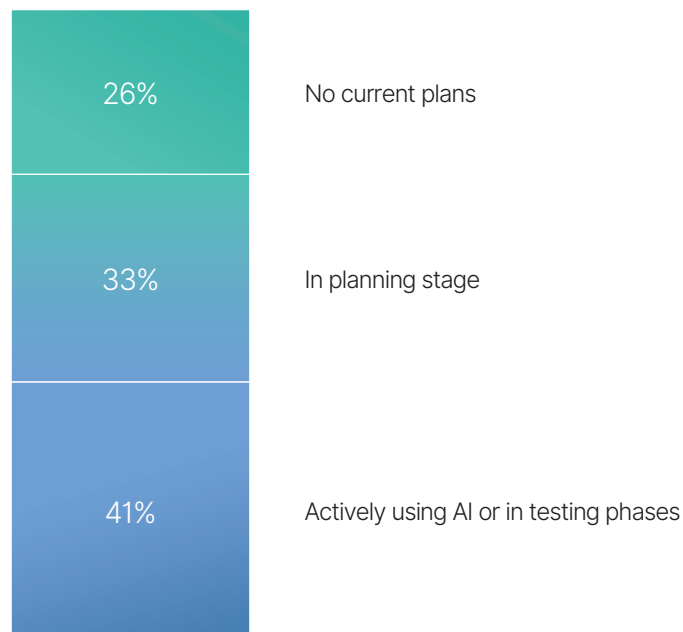
How Far Organizations Have Come with AI

AI adoption is steadily advancing in North Macedonia, but not yet universal. The survey shows that **41% of organizations are either actively using AI or in testing phases**, while another **33% are in the planning stage**. This leaves roughly a quarter of organizations with no current plans or uncertainty about where to begin.

Sector differences are clear. **Startups and SMEs** lead the way, driven by agility, smaller decision-making chains, and competitive pressure. **Public sector adoption** remains at an early stage, though interest and planning are notable. Larger enterprises often face more complex integration challenges, slowing their pace despite greater resources.

Key takeaway: AI has moved beyond the experimental phase for many organizations, but consistent adoption across all sectors will require leadership commitment and clearer roadmaps.

Organizational AI status



Graph 5. Organizational AI status in North Macedonia (2025) - Share of organizations that are actively using or testing AI (41%), in the planning stage (33%), or with no current plans (26%).



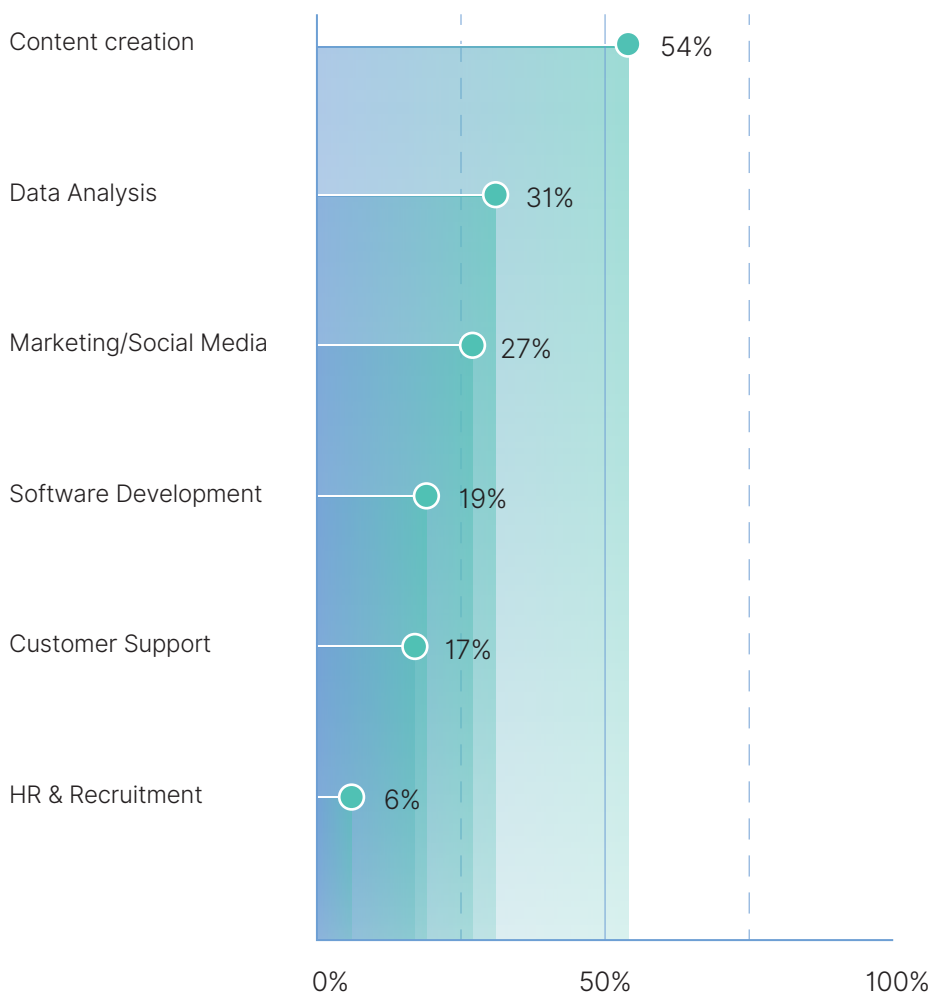
Where AI Is Making the Biggest Impact

Current adoption is concentrated in areas where AI can deliver fast, visible results. Content creation is the top use case (54%), covering everything from marketing copy to visual design. This is followed by data analysis and dashboards (31%) and marketing/social media management (27%).

More technical applications, such as **software development** (19%) and **customer support/chatbots** (17%), are gaining traction but remain secondary. Meanwhile, functions like **HR and recruitment** (6%) are still niche, a sign that some areas have yet to explore AI's potential fully.

Key takeaway: AI is strongest in creative and analytical roles today, with technical and operational uses emerging as the next wave of adoption.

Application areas



Graph 6. Application areas of AI in North Macedonia (2025) - Share of respondents reporting current use of AI across different functions. Content creation leads (54%), followed by data analysis (31%) and marketing/social media (27%), while technical and HR-related uses remain more limited.



Why Employees Are Ahead of Their Organizations

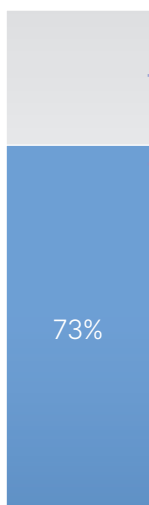
A striking finding is the gap between personal use and formal workplace integration. While **73% of individuals** report using AI tools personally at least occasionally, only **41% of organizations** are actively using or testing them.

This suggests that a significant pool of AI-ready employees exists, a resource that many organizations are not yet tapping. Turning personal experimentation into structured workplace adoption could deliver quick wins with minimal training effort.

*“Employees are **1.8x more** likely to use AI personally than their organizations are to deploy it formally.”*

Key takeaway: Employees are ahead of their organizations in AI use, representing an untapped driver for faster, smoother adoption.

Personal Use



Organizational Use



Graph 7. Personal vs. organizational AI use in North Macedonia (2025) - While 73% of individuals report using AI tools personally at least occasionally, only 41% of organizations are actively using or testing them, highlighting a 1.8× readiness gap.



Skills, Familiarity & Confidence



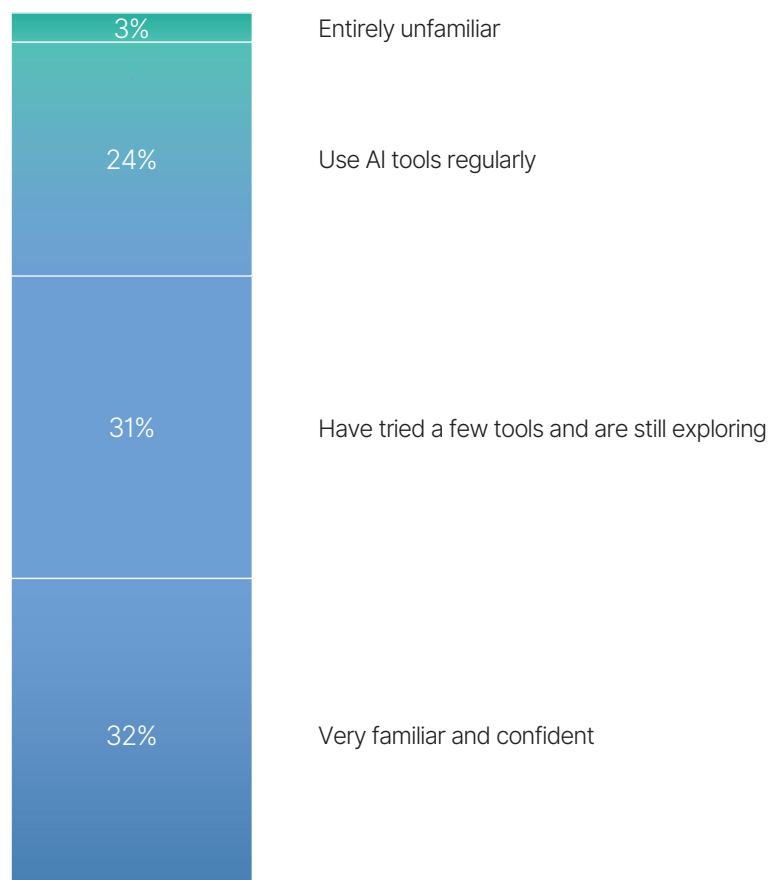
How Comfortable Are People with AI?

Familiarity with AI tools is already widespread among professionals in North Macedonia. **One-third of respondents (32%) describe themselves as very familiar and confident**, while another **24% use AI tools regularly** as part of their work or personal routines. **Around 31% have tried a few tools and are still exploring**, and only **3% say they are entirely unfamiliar**.

This means that most of the workforce has already crossed the first barrier: basic exposure to AI. The challenge ahead is not about introducing people to the technology, but about **helping them embed AI into their daily workflows with purpose and efficiency**.

Key takeaway: The skills foundation is solid and now it's about turning individual familiarity into consistent organizational capability.

Familiarity levels



Graph 8. Familiarity with AI tools in North Macedonia (2025) – Around one-third of respondents (32%) describe themselves as very familiar and confident, 24% use AI tools regularly, 31% are still exploring, and only 3% say they are entirely unfamiliar.



Barriers to Adoption



Why AI Isn't Moving Faster in Organizations

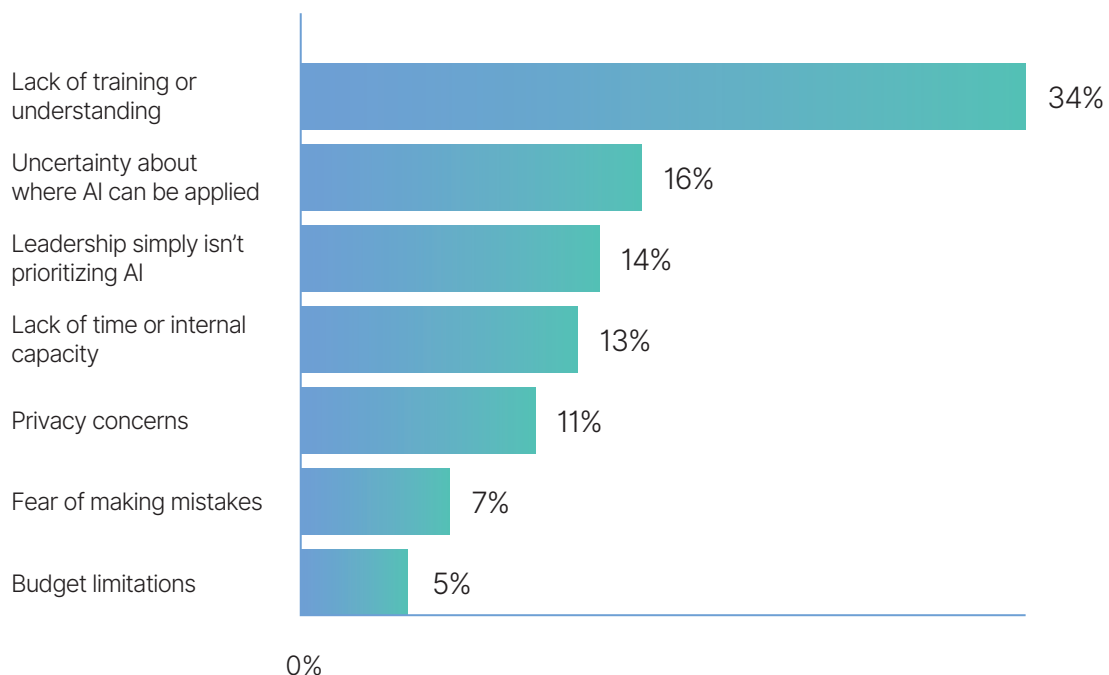
While enthusiasm for AI is growing, **the biggest roadblock is knowledge**. The survey shows that **lack of training or understanding (34%)** is the top barrier to adoption, followed by **uncertainty about where AI can be applied (16%)**.

Organizational priorities also play a role: **14% say leadership simply isn't prioritizing AI**, while **13% point to a lack of time or internal capacity** to explore new tools. Privacy concerns (11%) and fear of making mistakes (7%) are present but less dominant, and **budget limitations (5%) rank last** among the reasons holding teams back.

Key takeaway: This is a capability gap, not a cost gap. Even organizations with smaller budgets could see rapid progress by **focusing on targeted training and identifying practical, high-impact use cases**.

“Cost is not the main barrier, capability and clarity are.”

Barriers, sorted by %



Graph 9. Barriers to AI adoption in North Macedonia (2025) - Lack of training or understanding is the leading barrier (34%), followed by uncertainty about where AI can be applied (16%), limited leadership prioritization (14%), and lack of time or capacity (13%). Privacy concerns (11%), fear of mistakes (7%), and budget limitations (5%) are less significant.

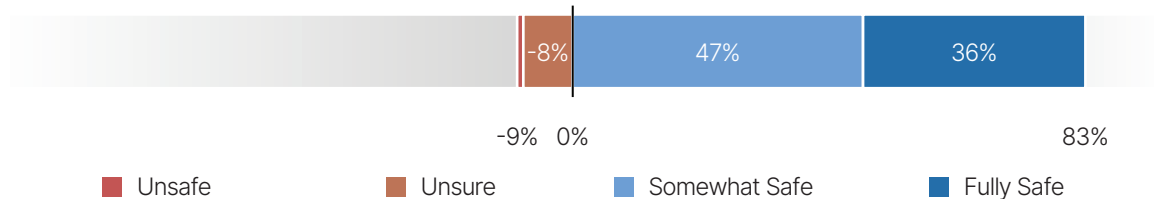
Trust, Safety & Risk Perception



How Safe Do People Feel Using AI?

Perceptions of safety around AI in North Macedonia are largely positive, though not without caution. **Over one-third of respondents (36%) feel fully safe using AI**, while nearly half (47%) feel “somewhat” safe. Only a small minority (9%) report feeling unsafe, with 8% unsure about how secure AI tools really are.

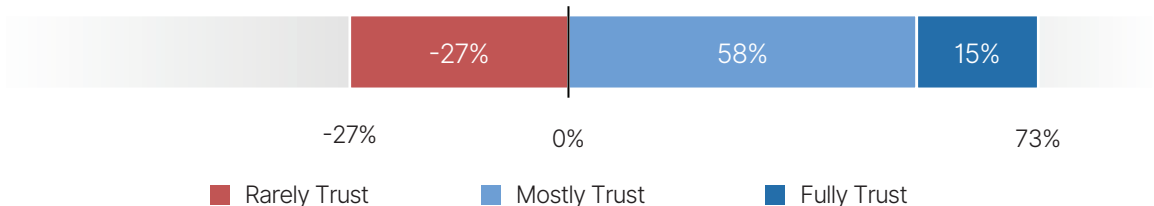
Safety sentiment



Graph 10. Perceptions of safety when using AI in North Macedonia (2025) - 36% of respondents feel fully safe using AI, 47% feel somewhat safe, while 9% report feeling unsafe and 8% are unsure.

When it comes to **trusting AI-generated outputs**, confidence remains relatively high. **Nearly three-quarters (73%) mostly or fully trust** the answers produced by AI at work. However, only **15% express complete trust**, indicating that while AI is widely accepted as a useful tool, many still prefer to verify its results before acting. This balance suggests healthy caution rather than outright skepticism.

Trust levels



Graph 11. Trust in AI-generated outputs at work (2025) - Nearly three-quarters of respondents mostly or fully trust AI outputs (58% mostly, 15% fully), while 27% remain cautious and rarely trust them.

In terms of **perceived risks**, two issues stand out above all others: **misinformation or inaccuracy (28%)** and **privacy/data protection (27%)**. These are closely followed by concerns about **losing control over decisions (22%)**. Interestingly, **23% of respondents report having no concerns at all** and this a group that could serve as early adopters for new AI initiatives and pilot projects.



Biggest worry



Graph 12. Trust in AI-generated outputs at work (2025) - Nearly three-quarters of respondents mostly or fully trust AI outputs (58% mostly, 15% fully), while 27% remain cautious and rarely trust them.

“Over 70% of respondents already trust AI outputs most of the time.”

Key takeaway: Most professionals in North Macedonia are open to working with AI, but their confidence hinges on accuracy, data protection, and maintaining control. For organizations, addressing these specific concerns will be critical to building trust and unlocking broader adoption.

The Support Blueprint

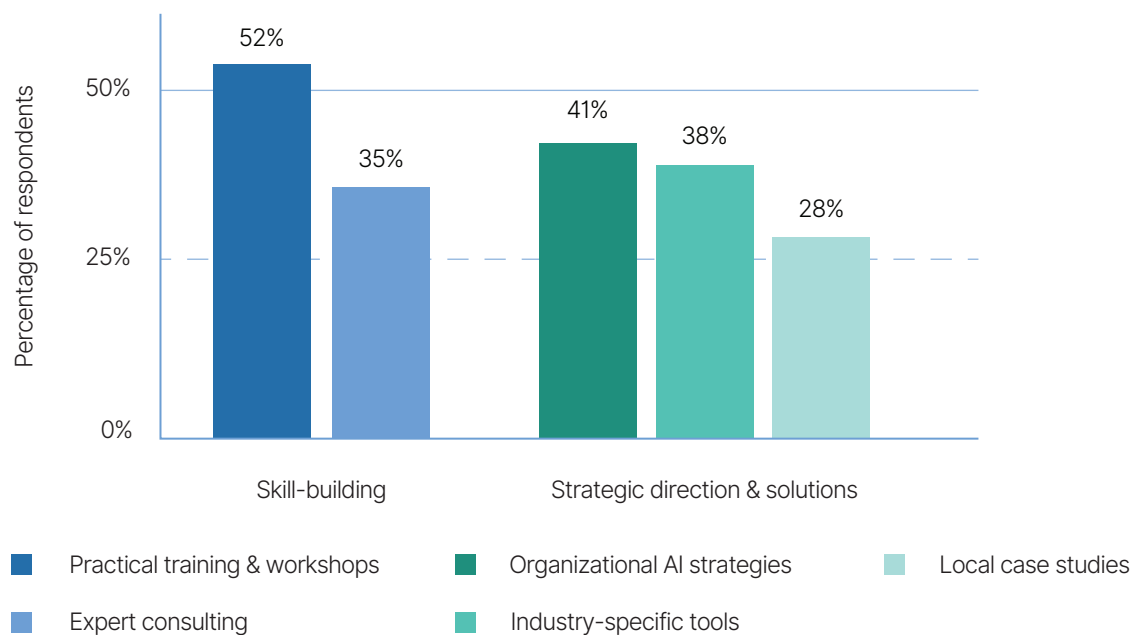


The Support Blueprint

As AI adoption grows, the message from teams across North Macedonia is clear: **they want more than just tools, they want real guidance**. The single most requested form of support is **practical training and workshops (52%)**, showing that professionals are eager to build hands-on skills they can immediately apply.

This is followed by calls for **clear organizational AI strategies (41%)** and **industry-specific tools (38%)**, which highlight the need for structured direction and solutions tailored to sector realities. **Expert consulting (35%)** ranks close behind, reflecting demand for targeted expertise to guide implementation. Meanwhile, **local case studies (28%)** round out the top five.

Support requests



Graph 13. Types of support professionals want for AI adoption in North Macedonia (2025) - The top request is practical training and workshops (52%), followed by clear organizational AI strategies (41%), industry-specific tools (38%), expert consulting (35%), and local case studies (28%).

Hidden finding: Success stories from abroad aren't enough. Organizations want proof that AI works in North Macedonia's own business and public sector context. This shows that local success stories could play a decisive role in accelerating adoption.



“Localized case studies are in high demand and global success stories aren’t enough.”

Key takeaway: The readiness to adopt AI is already present among professionals, but without structured training, tailored tools, and locally relevant examples, adoption will remain uneven. Organizations that invest in these support pillars can bridge the gap between potential and practice.

The Future Outlook



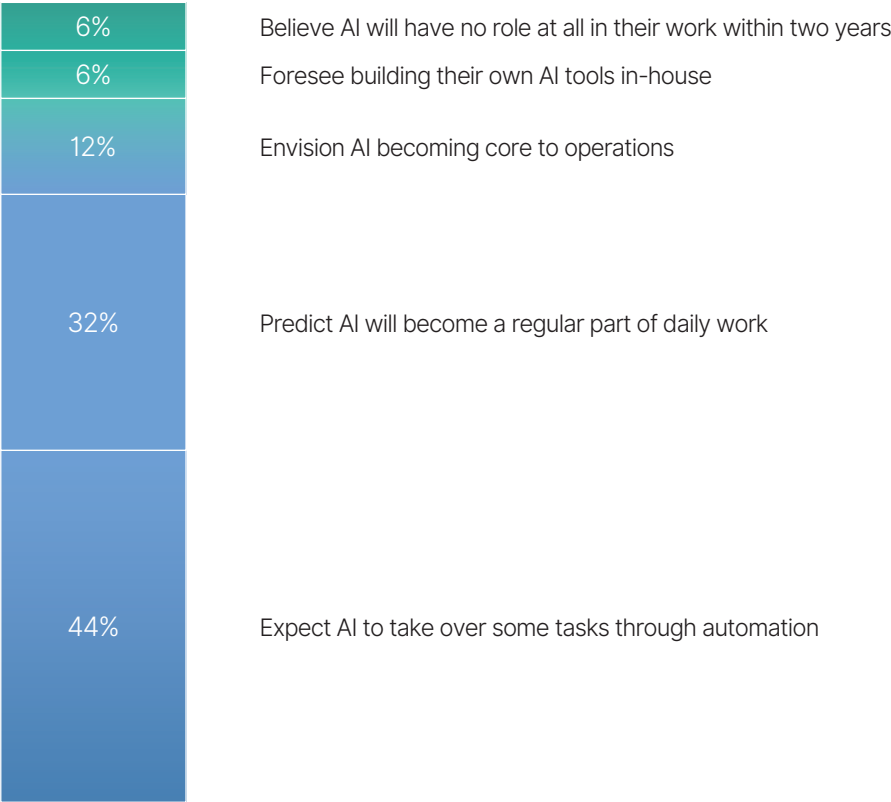
The Future Outlook

When asked to look ahead two years, respondents painted a picture of **broad AI integration across North Macedonia’s workplaces**, but with varied expectations of scale and intensity.

The largest share, **44%**, expect AI to take over some tasks through automation, streamlining parts of their workflow without replacing core human roles. Another **32%** predict AI will become a **regular part of daily work**, embedded in common processes such as research, analysis, and customer engagement.

A smaller but significant **12%** envision AI becoming **core to operations**, meaning that entire business models and value chains will depend on it. Meanwhile, **6%** foresee building their **own AI tools in-house**, a step that signals deep internal capability and innovation ambition. Only **6%** believe AI will have no role at all in their work within two years, a minimal group that underscores the near-universal expectation of impact.

2-year outlook



Graph 14. Outlook on AI in North Macedonia over the next two years (2025–2027) - 44% of respondents expect AI to take over some tasks through automation, 32% predict it will become a regular part of daily work, and 12% believe it will become core to operations. Meanwhile, 6% foresee building their own AI tools in-house, and only 6% expect AI to have no role at all.



Hidden finding: While most professionals expect AI to play a role, the **depth of integration varies widely**. This points to a potential future divide between organizations that adopt AI at a surface level and those that embed it as a strategic driver.

Key takeaway: The two-year horizon offers both urgency and opportunity. Organizations that start preparing now with skills development, workflow integration, and clear strategic priorities will be better positioned to move from basic automation to transformative, AI-led growth.

Hidden Dynamics of AI Adoption

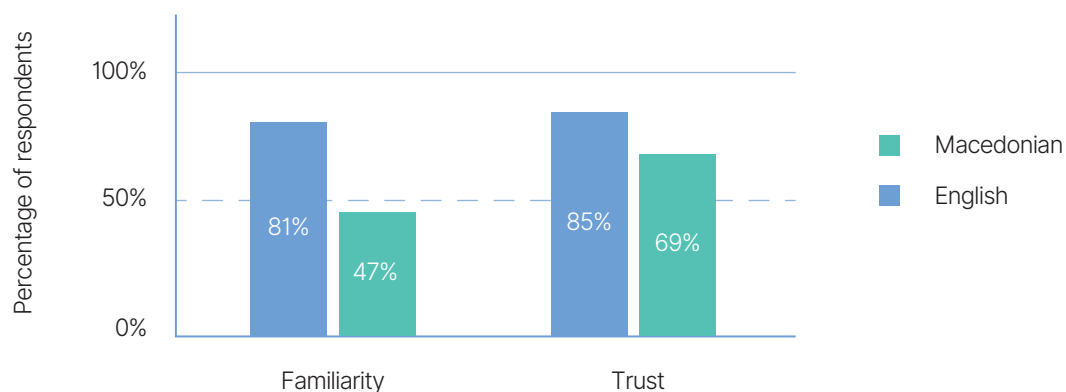


Hidden Dynamics of AI Adoption

Beyond the topline results, the survey data reveals several non-obvious but powerful patterns. These hidden dynamics highlight where adoption energy is really coming from, how different groups experience AI, and why strategies must go deeper than tools or workshops.

1. Language Effects on Confidence

Respondents who completed the survey in English reported higher familiarity with AI tools and greater trust in AI-generated outputs compared to those who responded in Macedonian. This indicates a language effect: exposure to English-language interfaces and materials appears to raise confidence. To build trust and capability broadly, localized prompts, examples, and policies in Macedonian are essential and not just translated interfaces.



Graph 15. Familiarity and trust by survey language (2025) - English respondents report higher familiarity and trust than Macedonian respondents.

2. Bottom-Up Energy, Top-Down Drag

AI adoption energy is coming from the edges rather than the center. Regular AI users, especially specialists, freelancers, and managers still cite “leadership doesn’t prioritize AI” as a top barrier. This contrast suggests experimentation is being driven bottom-up, while executives are slower to champion formal strategies. Unlocking this tension requires leaders to harness and scale what’s already happening at the ground level.

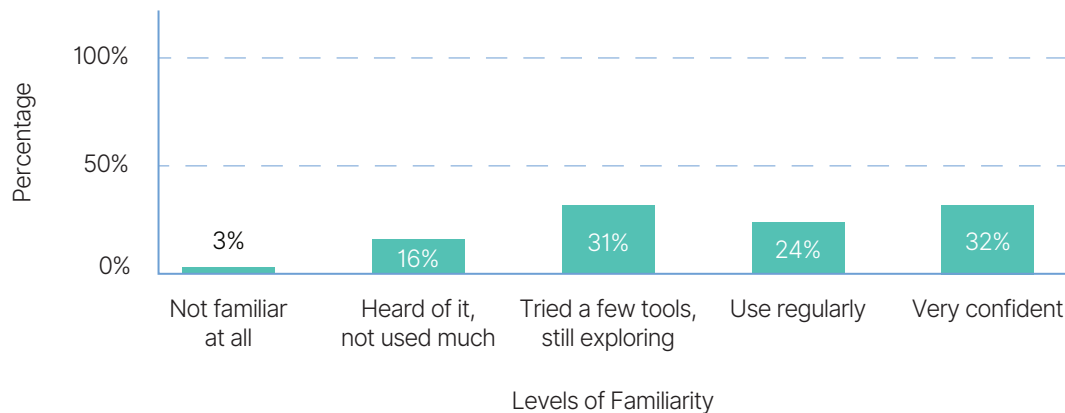
*“Specialists and managers are over **10× more** likely than executives to perceive lack of leadership prioritization as a barrier. This shows that adoption energy is being pushed bottom-up, while top-down support lags.”*



3. Two Very Different Learner Profiles (Bimodal Familiarity)

Familiarity results don't follow a normal curve, but instead, they cluster at the extremes.

A large group of respondents have barely used AI, while another large group are very confident, with fewer in between. This "bimodal" pattern suggests the need for two separate adoption tracks: (a) foundation-level training for newcomers, and (b) workflow redesign and mastery for advanced users. Treating the workforce as one homogeneous group risks leaving both ends underserved.

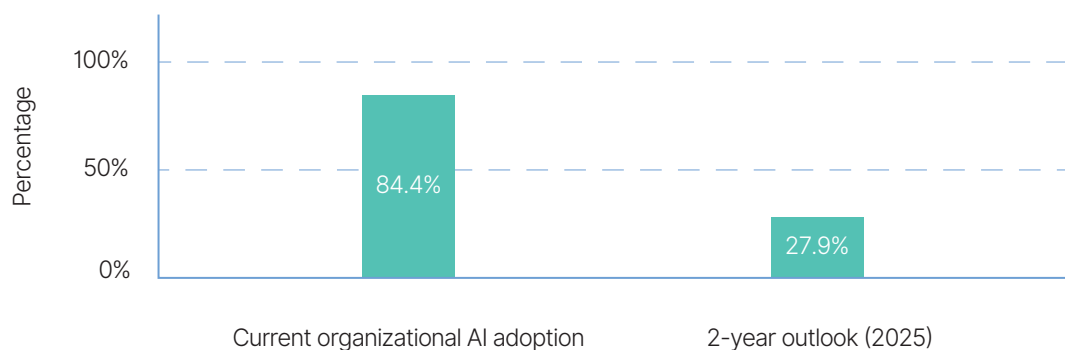


Graph 16. Bimodal familiarity distribution (2025) - Responses cluster at "2 - heard of it, not used" and "5 - very confident," with fewer in the middle.

What's striking: Familiarity is polarized, with 16% at level 2 (Heard of it, not used much) and 32% at level 5 (Very confident). These peaks at both ends highlight two distinct groups: cautious beginners and really confident users.

4. Optimism Outruns Current Adoption

Many organizations that are not yet using AI still expect it to become a regular part of daily work or automate tasks within two years. This gap is not a matter of belief. Optimism is already in place. Instead, the challenge is execution: turning expectations into reality through structured strategies, playbooks, and integration support. This optimism represents a window of opportunity for leaders to act.

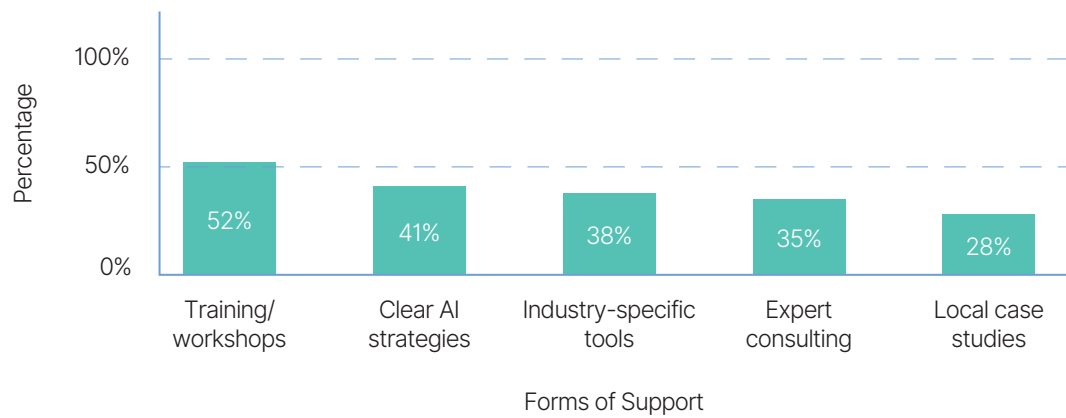


Graph 17. Current adoption status vs. 2-year outlook (2025) - Organizations not yet using AI still expect strong adoption in two years.



5. Training Demand Outweighs All Other Supports

Training isn't just another request, but it's the central bottleneck. More than half of respondents (52%) called for practical, hands-on training, 11 percentage points ahead of the next most-cited need (AI strategy at 41%). This gap shows that building capability through workshops and real-world exercises is the single most effective lever for accelerating adoption.



Graph 18. Support requests for AI adoption (2025) - Training leads all other forms of support by a clear margin.

Benchmarking & Context



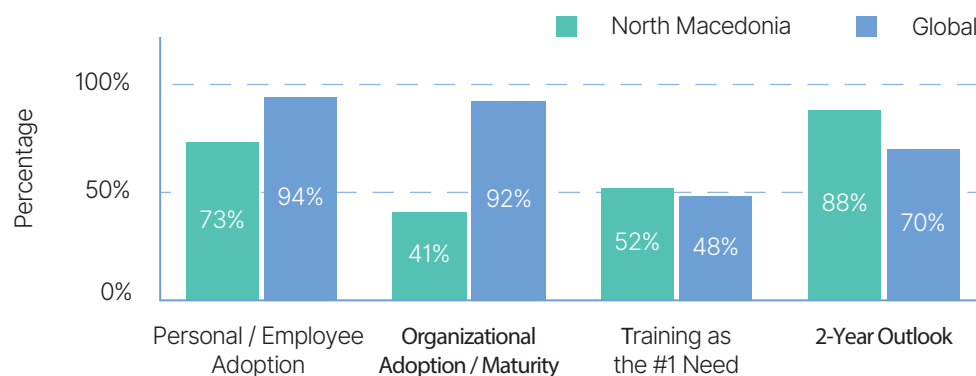
Benchmarking & Context

Looking beyond North Macedonia's borders, three themes dominate the global AI adoption landscape:

1. **Experimentation is widespread** - most professionals have tried AI tools in some form.
2. **Training is the most common need** - organizations across industries see skill development as essential to moving from curiosity to capability.
3. **Optimism about near-term impact is high** - within two years, many expect AI to be deeply integrated into daily work.

North Macedonia **mirrors these patterns**, confirming that its workforce is aligned with global sentiment. However, there is one notable difference: **individual adoption here is significantly ahead of formal organizational programs**. While global adoption gaps exist, the difference in North Macedonia is more pronounced, suggesting untapped potential if employers can channel personal use into structured, business-driven implementation.

Local vs. global on experimentation, training, 2-year daily use



Graph 19. Trust in AI-generated outputs at work (2025) - Nearly three-quarters of respondents mostly or fully trust AI outputs (58% mostly, 15% fully), while 27% remain cautious and rarely trust them.

1. Personal / Employee Adoption

North Macedonia: 73% of individuals use AI personally at least occasionally

Global: 94% of employees report some familiarity with AI tools

Shows that global awareness is higher overall, but North Macedonia is not far behind in personal experimentation.

2. Organizational Adoption / Maturity

North Macedonia: 41% of organizations are using or testing AI

Global: Only 1% of organizations describe themselves as "mature," but 92% plan to increase investment.

Highlights that while global organizations are less advanced in maturity, the commitment to future investment is strong. North Macedonia shows active uptake but still has room to grow in structured integration.



3. Training as the #1 Need

North Macedonia: 52% of respondents say training/workshops are their top request

Global: 48% of employees cite training as the most important factor for adoption

Reinforces that training is a universal need, both globally and locally.

4. 2-Year Outlook

North Macedonia: 88% expect AI to play a significant role in their work within 2 years

Global: Over 70% of employees believe ≥30% of their work will change in the next 2 years

Both groups expect big changes in a short timeframe, showing alignment in optimism and urgency.

Source: Wave Group AI Adoption Survey (North Macedonia, 2025); McKinsey & Company, "Superagency in the Workplace" (2024).

Hidden finding: North Macedonia's talent pool is not lagging behind global peers in skill or mindset and the constraint lies in organizational enablement, not workforce readiness.

Key takeaway: By bridging the gap between personal experimentation and formal adoption, North Macedonia can accelerate its AI maturity faster than markets where the workforce is still catching up in skills and awareness.

Conclusion

The 2025 AI Adoption Survey for North Macedonia paints a clear picture: the country's workforce is ready for AI, but organizations have yet to catch up. With 73% of individuals already using AI tools and only 41% of organizations formally adopting them, the readiness gap is both a challenge and an opportunity.

The findings show strong momentum in creative and analytical applications, growing trust in AI outputs, and a willingness to embrace training and structured strategies. Barriers like lack of knowledge, unclear applications, and misinformation remain but they are solvable. Importantly, the constraints are not rooted in cost or technology access, but in capability building and leadership direction.

North Macedonia is not lagging behind global peers in talent or mindset. The key to accelerating AI maturity lies in enabling organizations to channel personal experimentation into structured, impactful business adoption. This moment offers a chance to leapfrog slower-moving markets, but only if leaders act decisively.



Recommendations

To close the readiness gap and position North Macedonia as a competitive AI-enabled economy, the following actions are recommended:

1. Turn Personal Use into Organizational Capability

Create internal AI programs to identify and empower employees already using AI personally. Encourage cross-department knowledge sharing to turn informal experimentation into formal best practices.

2. Invest in Practical, Hands-On Training

Prioritize workshops and real-world exercises over theory-heavy sessions. Focus on sector-specific AI applications, ensuring training is directly relevant to daily work.

3. Develop Clear Organizational AI Strategies

Define where AI will be used, how success will be measured, and how risks will be managed. Integrate AI adoption into wider digital transformation and innovation plans.

4. Promote Local Success Stories

Showcase AI projects from North Macedonia's private and public sectors to build confidence and relevance. Use local case studies to address skepticism and prove practical value.

5. Address Trust and Safety Concerns Proactively

Establish clear guidelines for data protection, transparency, and human oversight. Train teams on how to validate AI outputs and handle misinformation risks.

6. Encourage Public-Private Collaboration

Partner across government, business, and education to align skills programs with real market needs. Explore national-level initiatives to promote responsible AI adoption and innovation.

Final Word:

North Macedonia's AI story is still being written, but the building blocks are already in place: a curious, capable workforce, rising trust in the technology, and a growing sense of urgency. By closing the gap between readiness and structured adoption, the country can position itself as a regional leader in responsible, high-impact AI use. The opportunity is here and the time to act is now.



Technical Appendix

About the Survey

The survey was conducted in July–August 2025 and collected responses from professionals working in startups, SMEs, large enterprises, NGOs, and the public sector. It was offered in both Macedonian and English to ensure accessibility and inclusivity.

Participation was voluntary and open to individuals across diverse job roles, including founders, executives, managers, specialists, consultants, and public sector staff. This diversity of perspectives helps ensure the results reflect a broad cross-section of the country's active workforce, even though the survey does not represent a fully randomized national sample.

Statistical Confidence

This 8 percentage point margin of error at 95% confidence level is derived from the standard formula for proportion in a simple random sample:

$$\text{MOE} = z \times \sqrt{\frac{p(1-p)}{n}}$$

Where:

- $z = 1.96$ for 95% confidence
- $p = 0.5$ (the "worst-case" scenario for maximum variability)
- n = sample size (approximately 150 in this survey)

Calculation:

$$\text{MOE} = 1.96 \times \sqrt{\frac{0.5 \times 0.5}{150}} \approx 0.08 \text{ (8\%)}$$

Practical interpretation:

Differences greater than ~8–10 points at the total sample level are likely meaningful.

For subgroup comparisons, the margin of error increases as the base size decreases (e.g., halving the base increases the margin by $\sqrt{2}$).

While this was a convenience sample rather than a strictly random one, the effect sizes observed such as the 1.8× personal – organizational adoption gap and training needs outpacing the next priority by 11 points are substantially above the calculated error margin, strengthening the directional validity of the results.

