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AI Ecosystem Mapping Report

December 2025

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B.O.T

Introduction – AI Ecosystem Mapping Survey

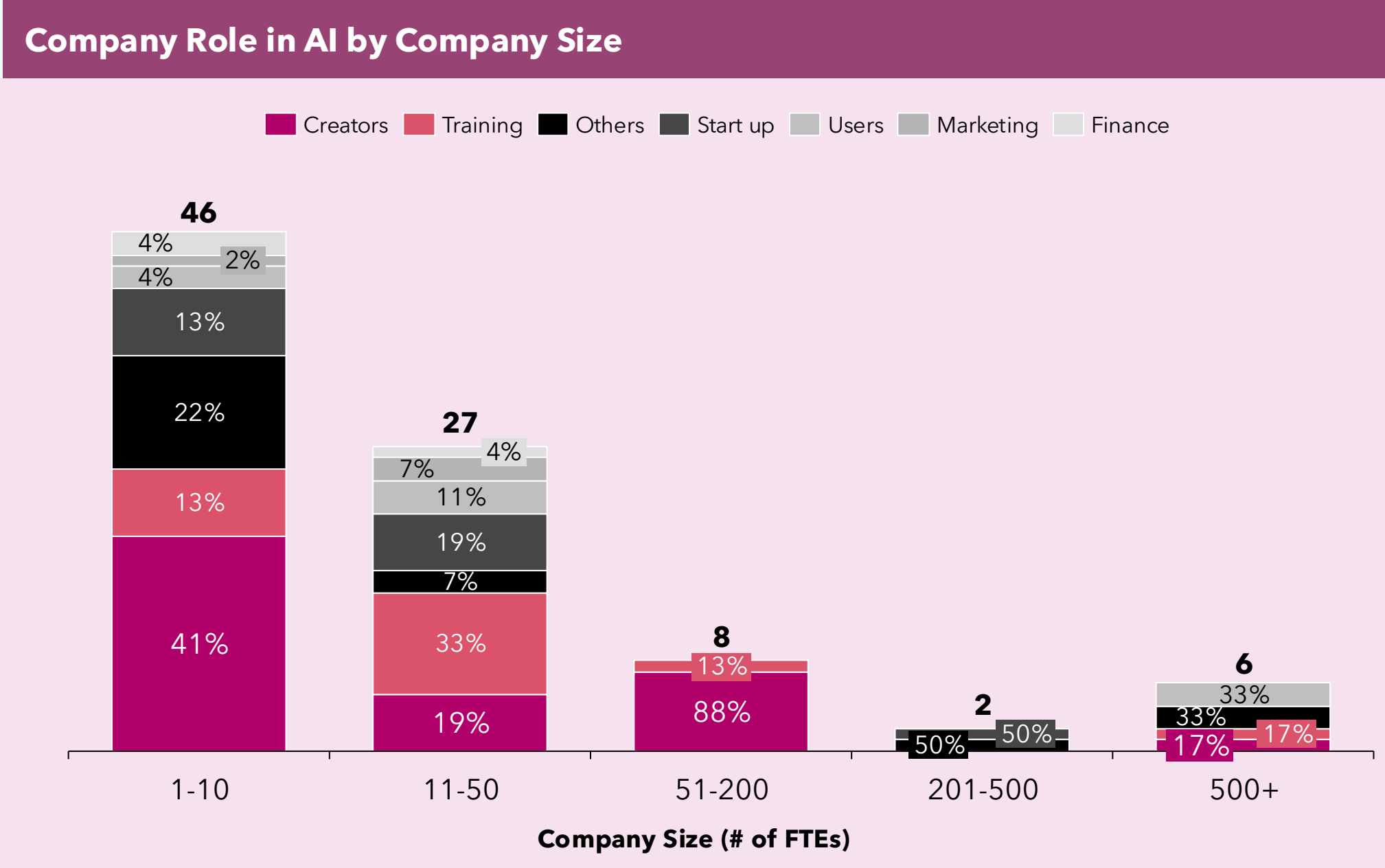
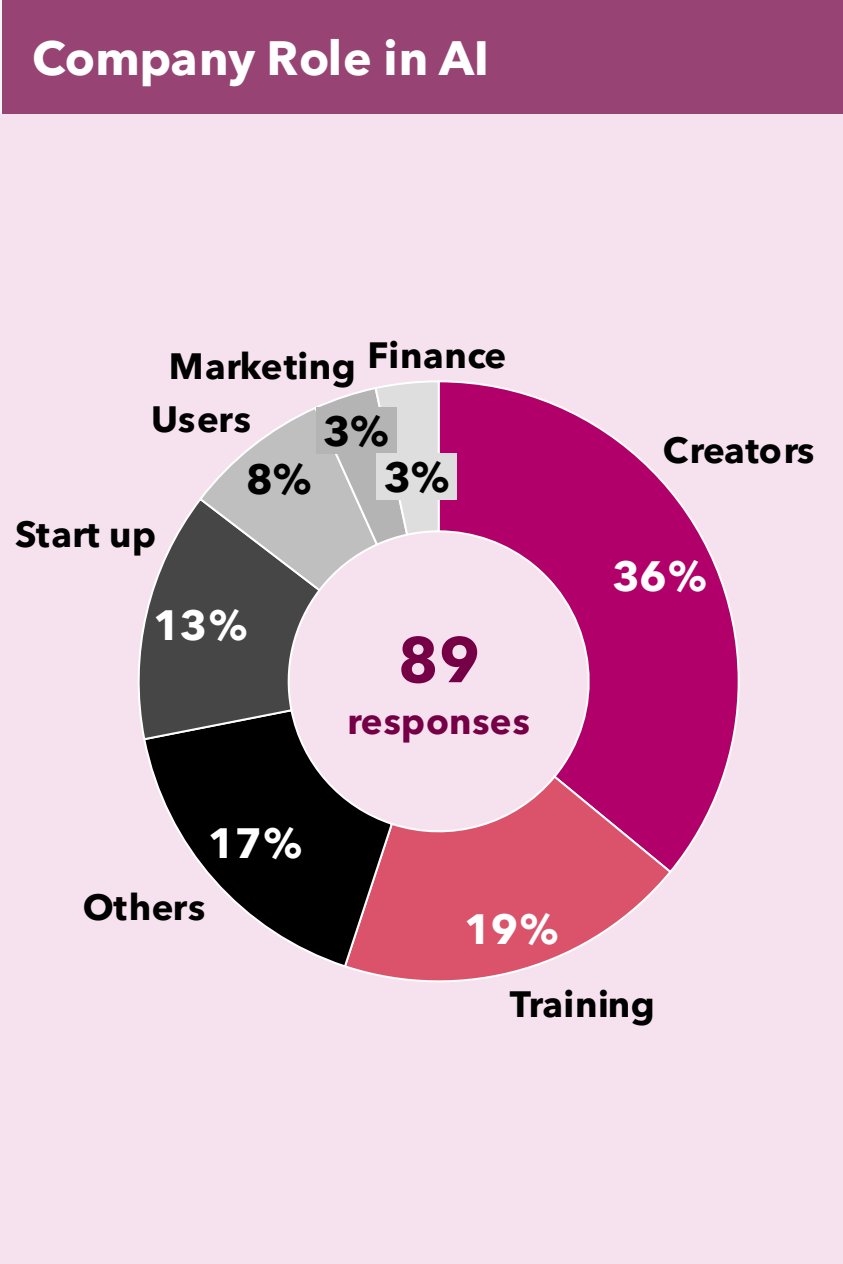
The Ministry of Technology & Artificial Intelligence (MITAI), has launched in collaboration with ecosystem partners, B.O.T., the national **AI Ecosystem Mapping Survey** to support evidence-based policymaking and to establish a baseline understanding of Lebanon’s artificial intelligence landscape.

The survey sought to identify and map key actors across the AI value chain, including startups, technology companies, research groups, universities, and independent practitioners, while capturing insights on capabilities, talent profiles, use cases, maturity levels, and existing constraints. It also examined how AI is currently being developed, deployed, and commercialized across sectors, as well as the enabling and limiting factors shaping ecosystem growth.

Responses were collected from AI-focused companies, practitioners, and institutions operating in Lebanon and the diaspora. The findings provide a data-driven snapshot of the current state of AI in Lebanon, highlight structural strengths and gaps, and inform priority actions across talent development, policy, infrastructure, and partnerships.

This mapping exercise serves as a foundational input for MITAI’s broader efforts to build a resilient, inclusive, and globally connected AI ecosystem, and will be used to guide program design, partner engagement, and future investments.

89 responses are recorded with the majority being AI creators with a company size ranging between 1-10 FTEs

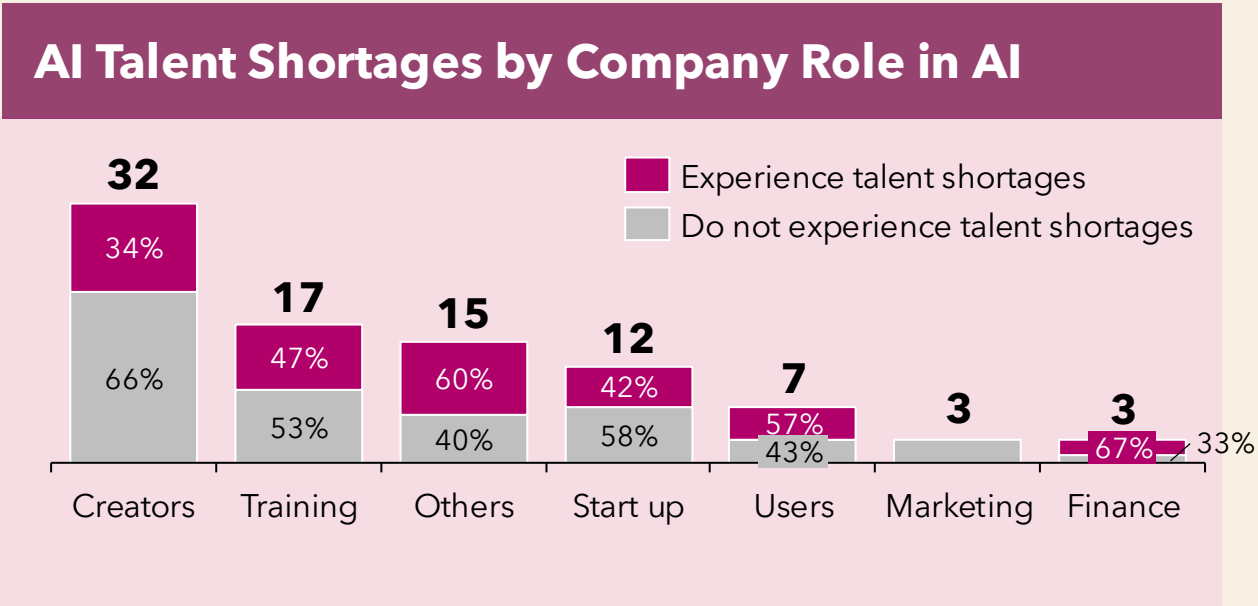
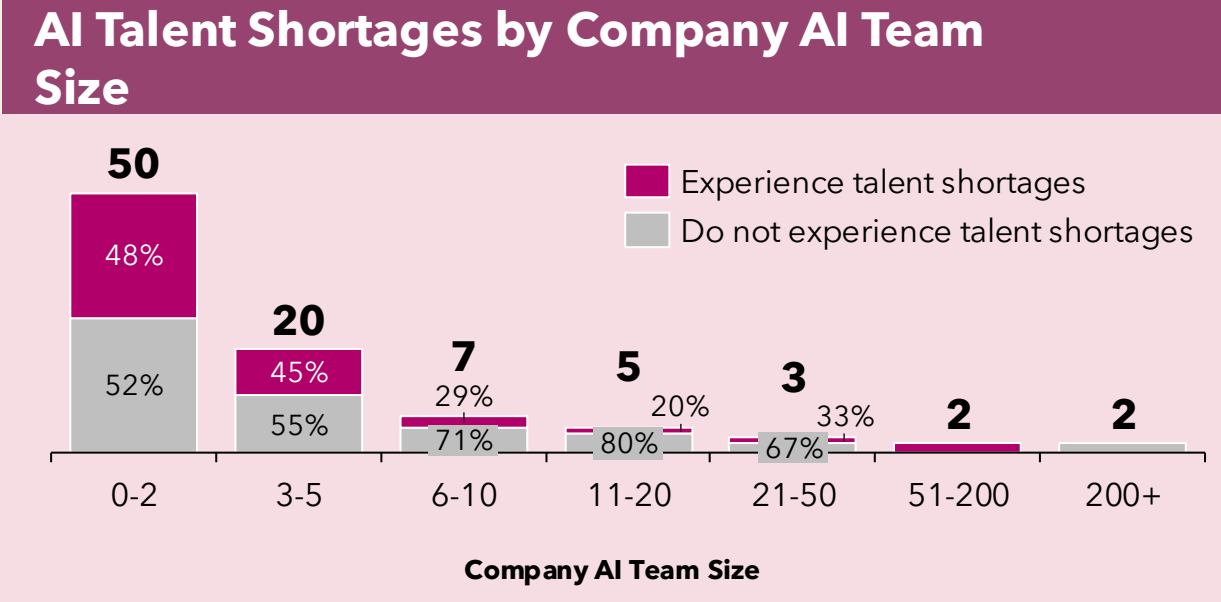
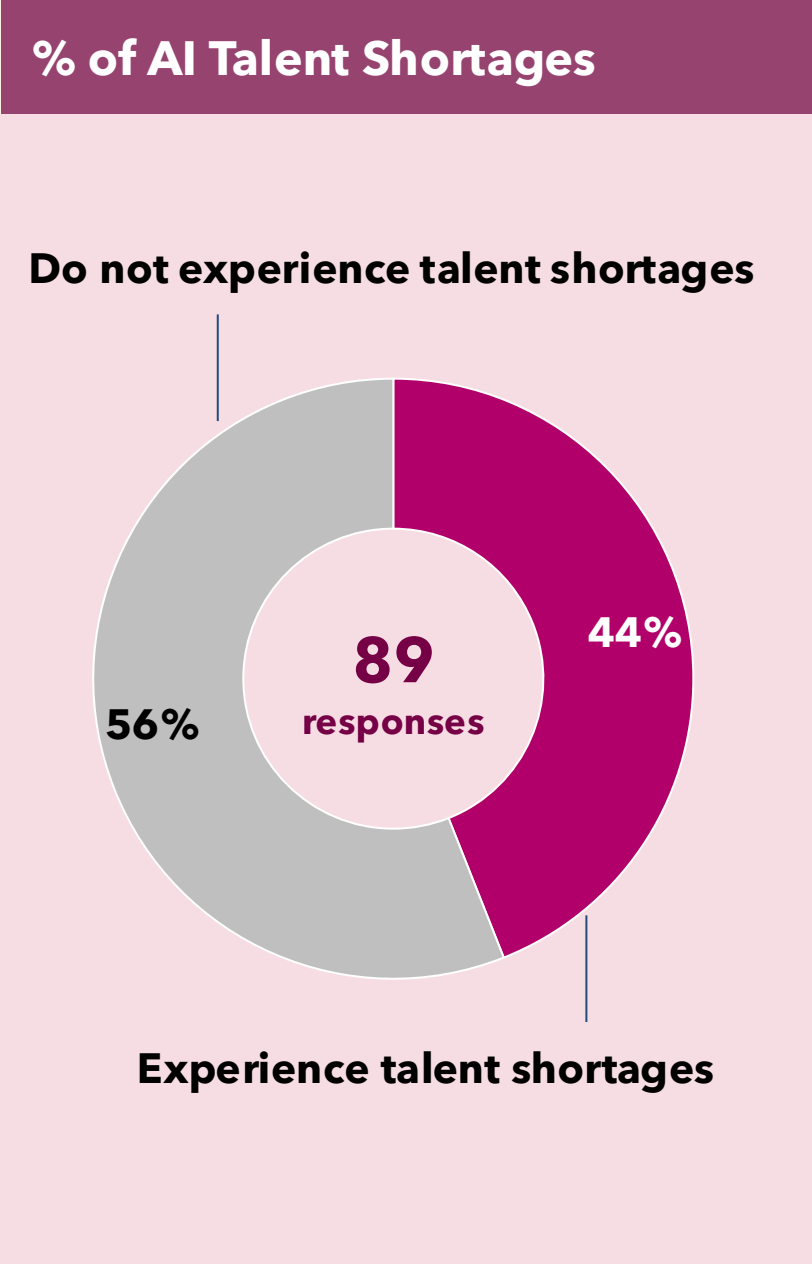


Over 75% of respondents are based in Lebanon, with the education and private sectors being the most served



1) Other countered include Canada, Estonia, United Kingdom, China, France, Qatar, and Tunisia

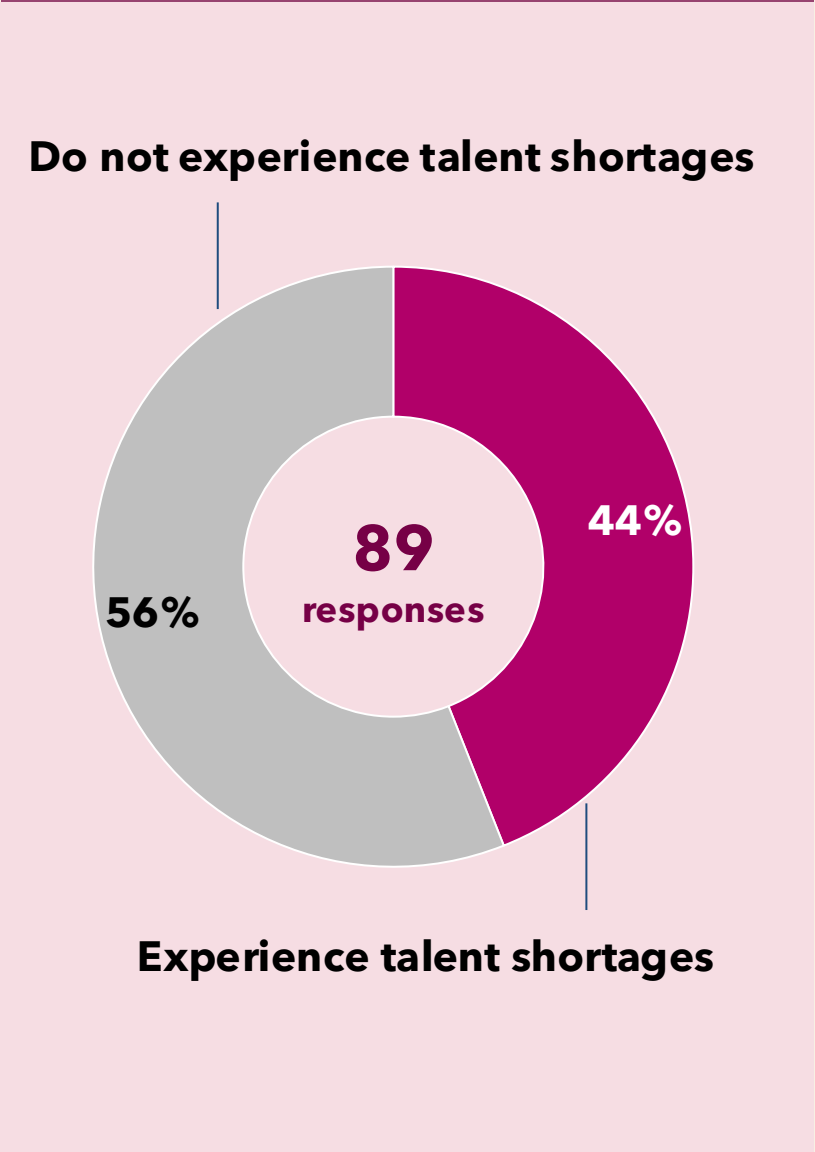
44% of respondents report AI talent shortages, with the majority of gaps observed among teams with fewer than five AI employees



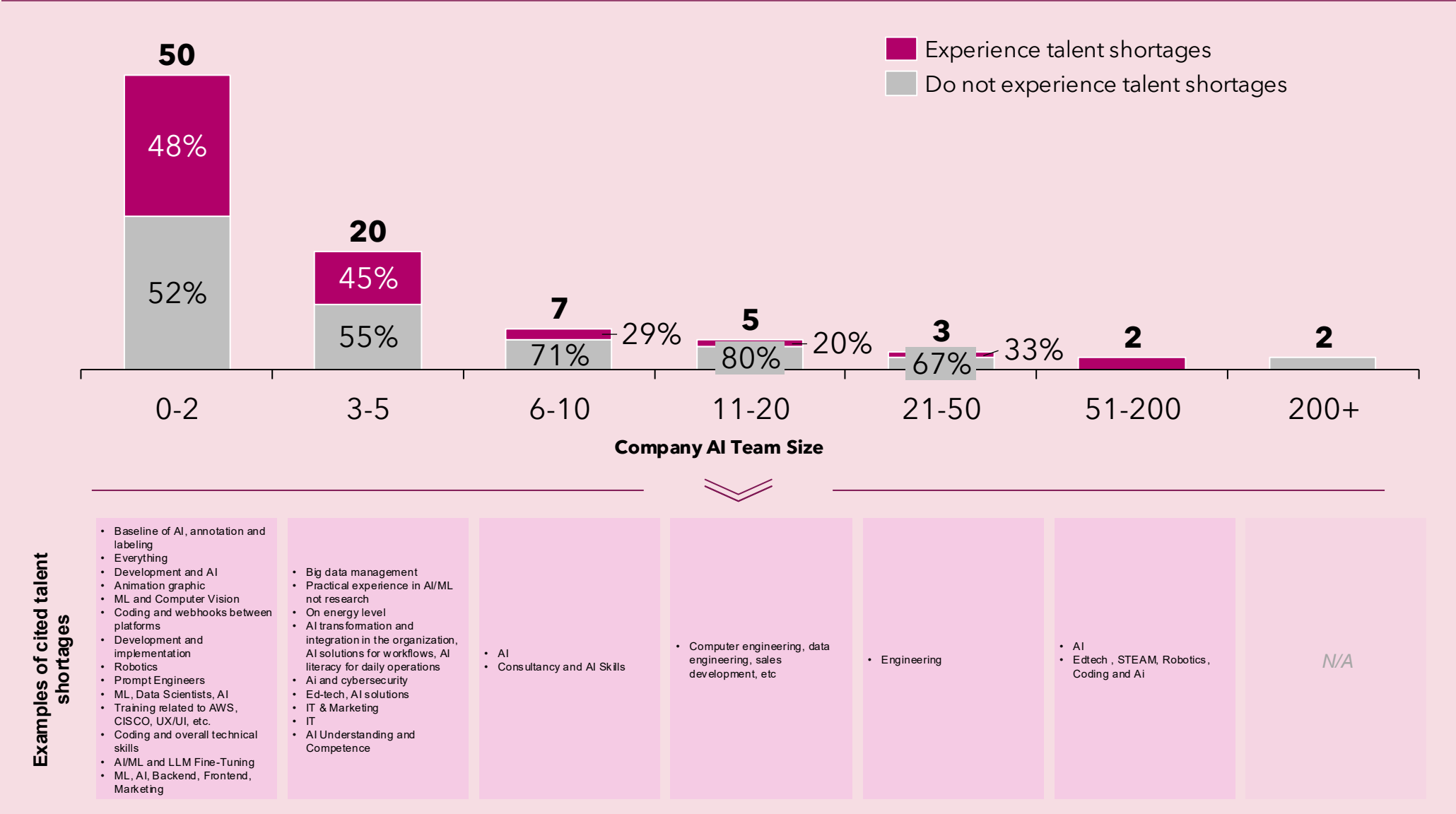
- ### Key Insights
- **Smaller AI teams are more likely to report shortages than slightly larger ones** – about half of firms with 0-5 AI specialists claim that they lack talent, whereas those with mid-sized AI teams (6-20 specialists) were less likely to indicate a shortage
 - **Few organizations with very large AI teams** (50+ specialists) **reported talent shortages** (i.e., LAU, Edtech Syndicate in Lebanon)
 - **Well-resourced companies** with 200+ AI resources **attract sufficient talent**
 - **More than 60% of talent shortage** stems from the creators, training, and startup companies

AI talent shortages vary in scope - some face gaps across the whole AI spectrum while others have specific shortages such as AI integration

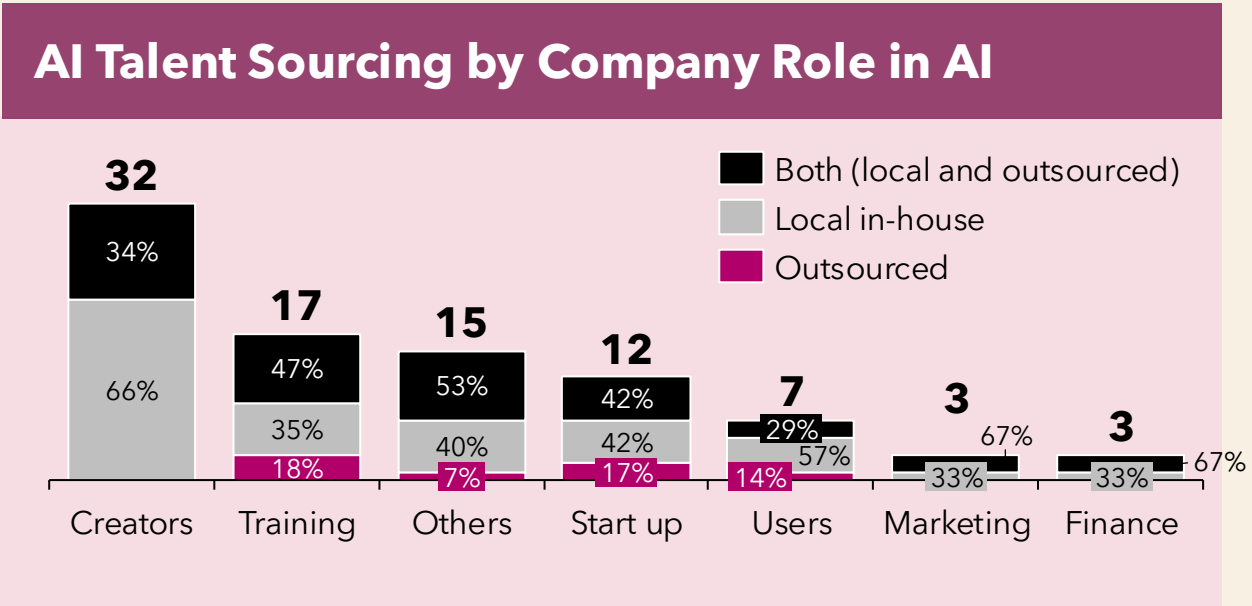
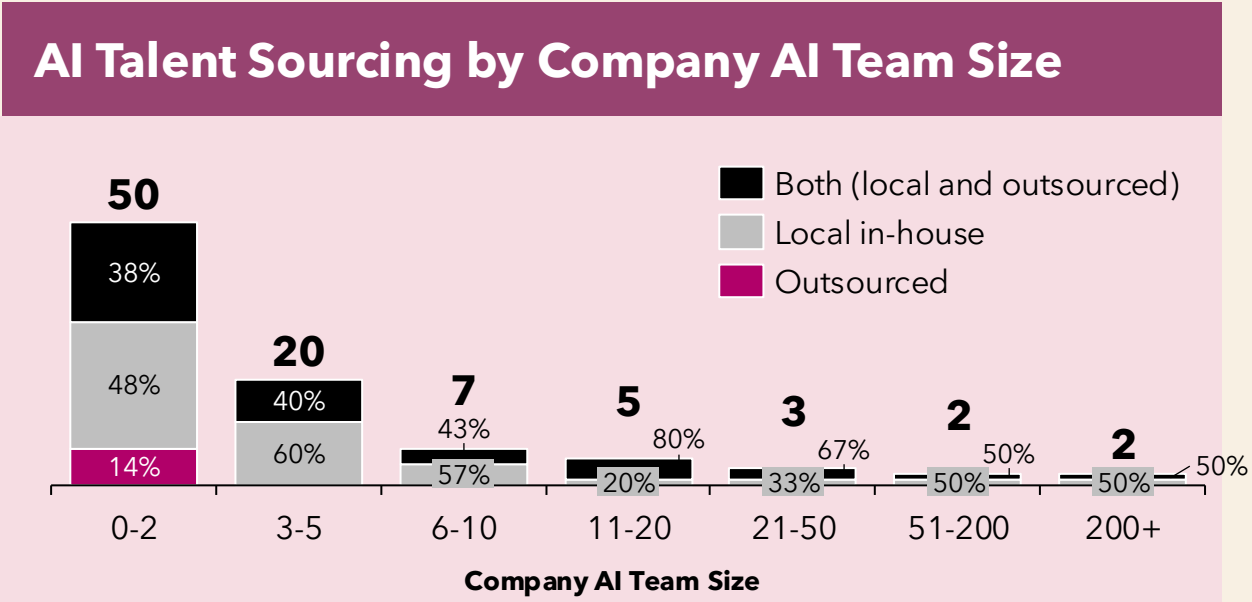
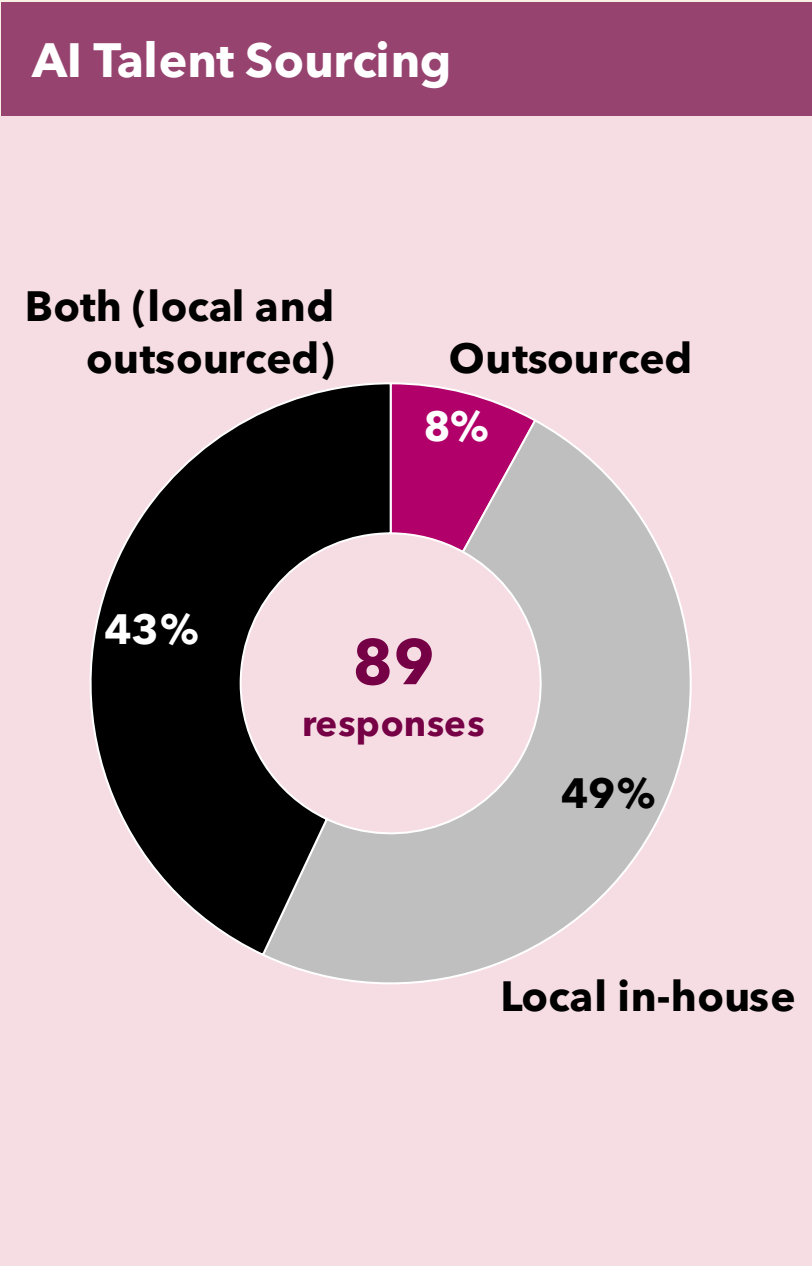
% of AI Talent Shortages



AI Talent Shortages by Company AI Team Size



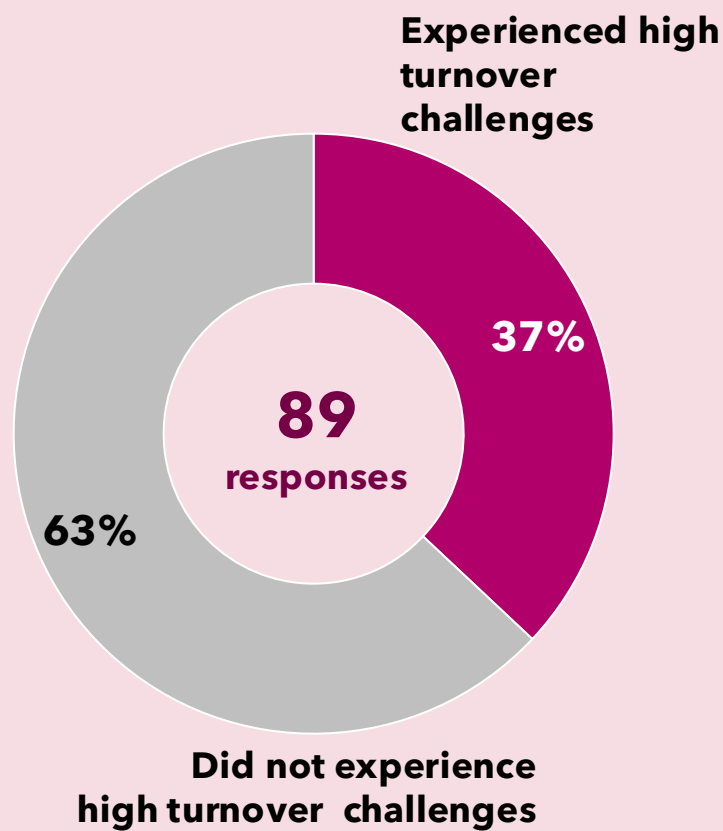
Majority of respondents rely on in-house local AI talent, while the small AI teams with less than two resources mainly rely on outsourcing



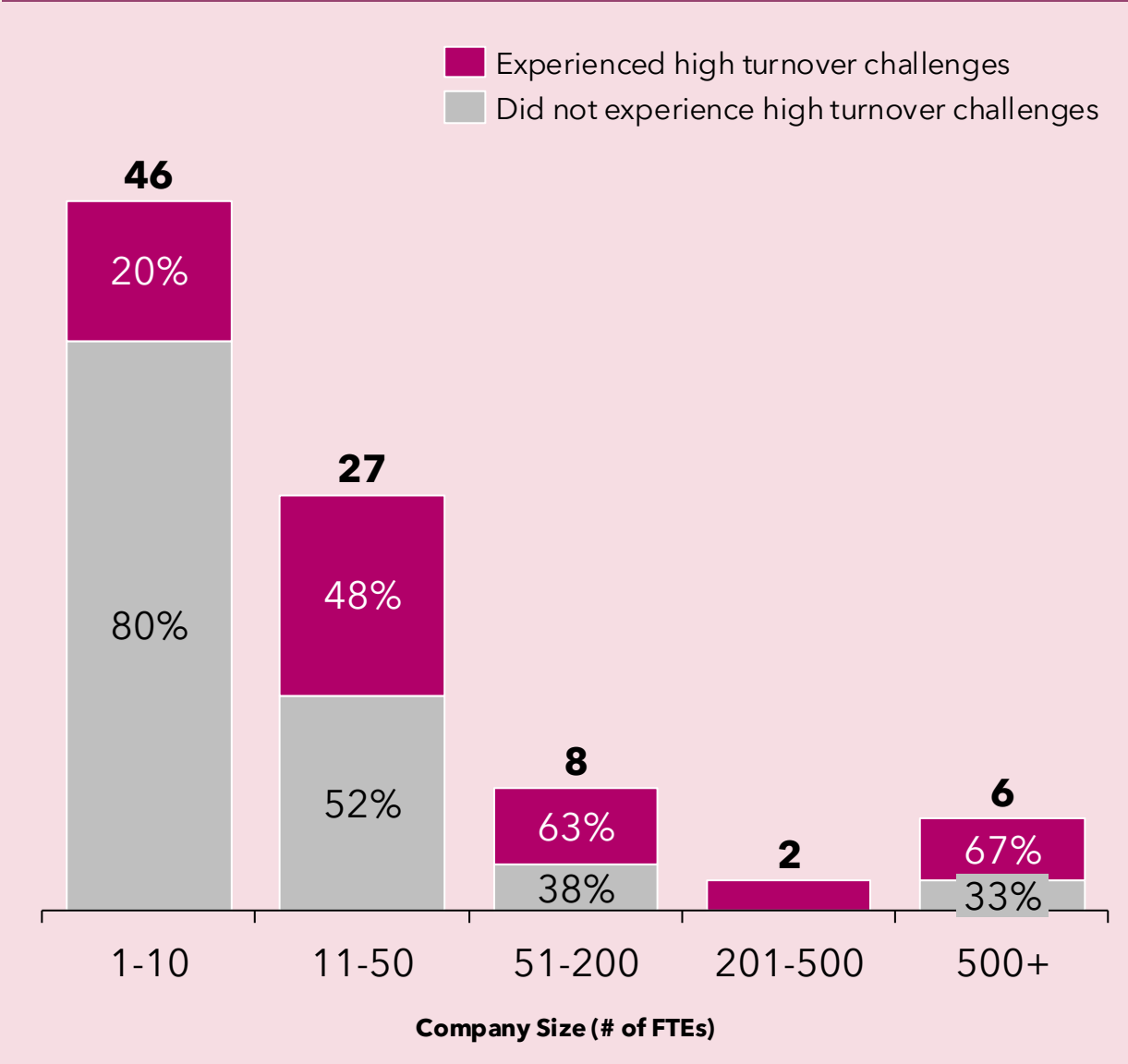
- ### Key Insights
- Purely **outsourcing AI work is rare** with only **8% of respondents**
 - **Over 90%** of respondents employ at least some AI personnel locally, **reflecting the necessity of in-country talent even amid shortages**
 - Companies that **outsource tend to have less than two AI employees** that lack any in-house AI staff
 - Majority of **AI creators maintain their AI talent locally in-house**, while most **other categories rely on a mix** of in-house and outsourced resources

Over one-third of respondents have experienced high staff turnover in the past 3 years, which remains a significant challenge

Staff Turnover over Past 3 Years



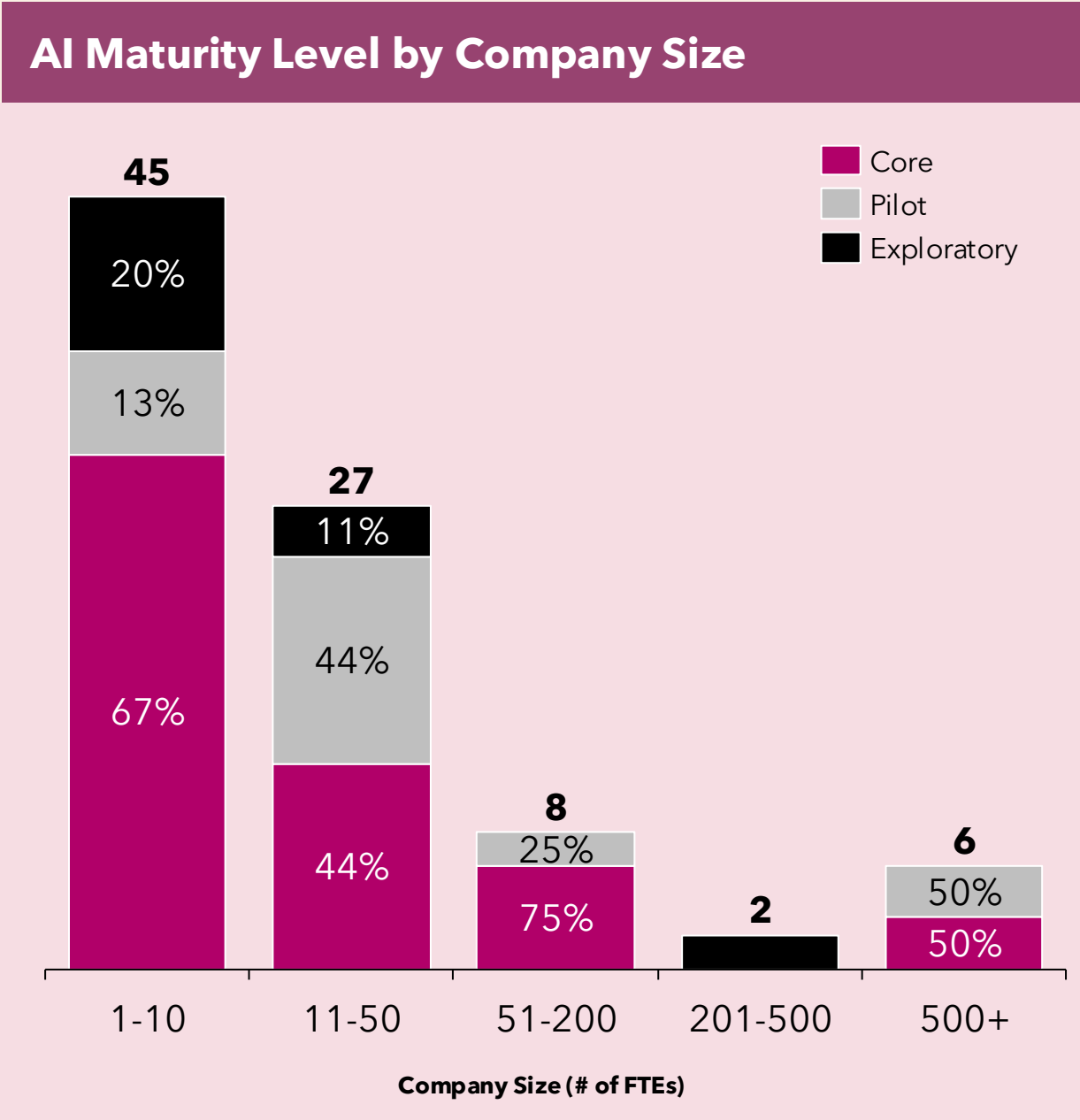
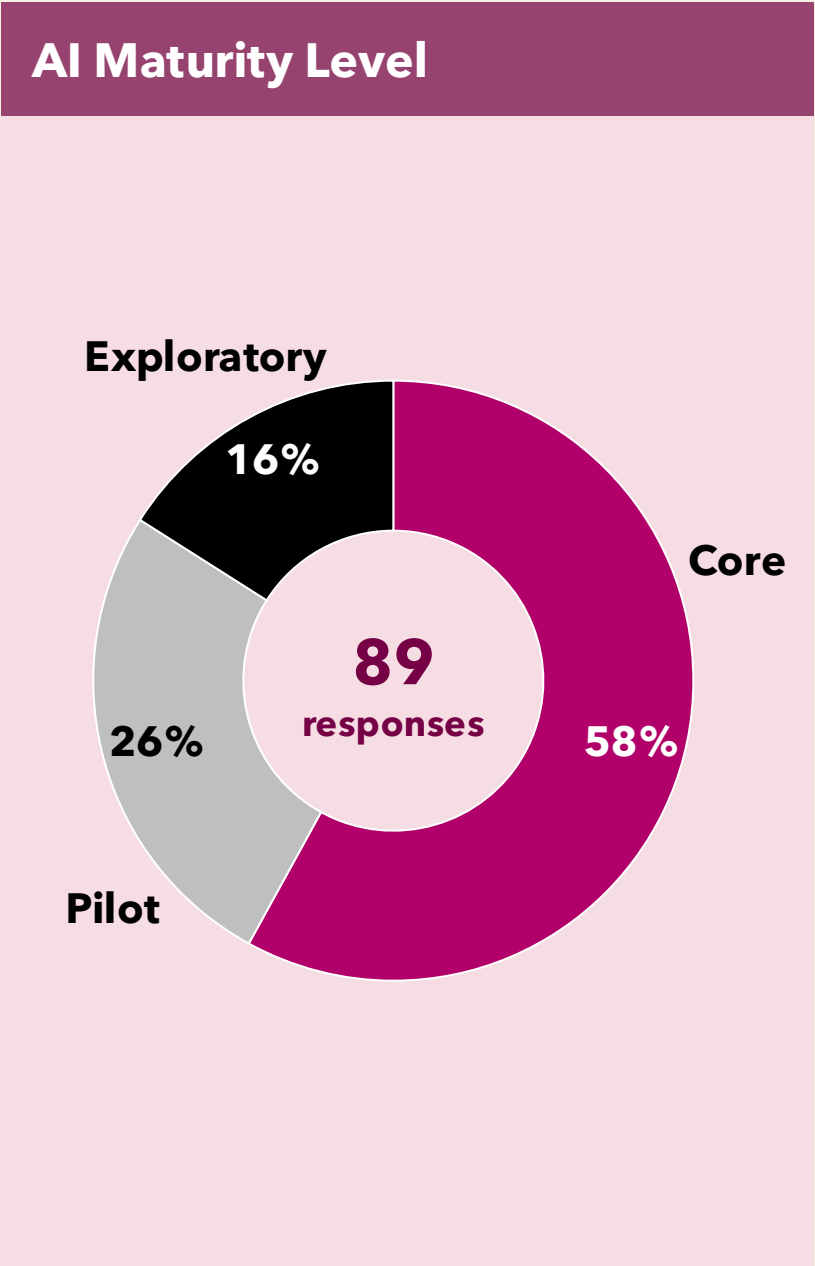
Staff Turnover by Company Size



Key Insights

- **Larger organizations are more exposed to Lebanon's economic uncertainties**, which continue to drive talent abroad; among companies with 500+ employees, nearly two-thirds reported staff turnover challenges, compared with only around 20% of the smallest firms (1-10 employees)
- **Lower turnover among smaller companies** is largely attributable to their **limited team size and the prevalence of founder-led roles**
- Nevertheless, **"brain drain" was cited as a top risk** to the ecosystem (see later section on risks)

AI maturity is accelerating across companies with 60% reporting that AI is part of their core operations, while others are piloting and exploring

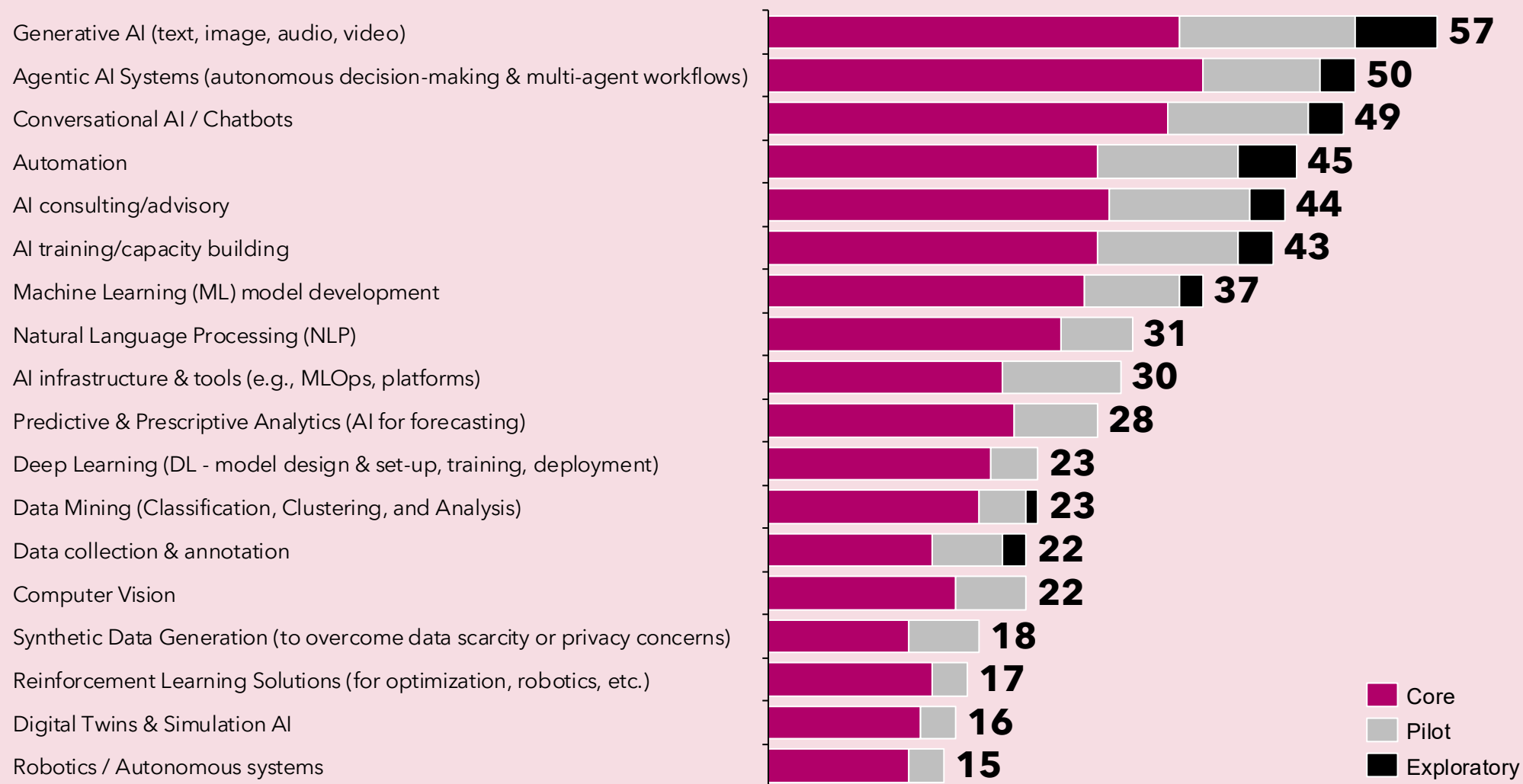


Key Insights

- The ecosystem is **still emerging but rapidly gaining pace** as experimentation transitions into scaled adoption
- Nearly 60% report AI as core highlights a **strong base of AI-first companies and mature implementations**
- However, 26% remain in the **pilot stage, running AI proof of concepts without full commercialization**, while 16% are **still in the exploratory or R&D phase**

AI offerings are maturing across companies, with Gen AI being the most common offered service while robotics is still a nascent area

AI Related Services/ Products Offered by AI Maturity Level (count)

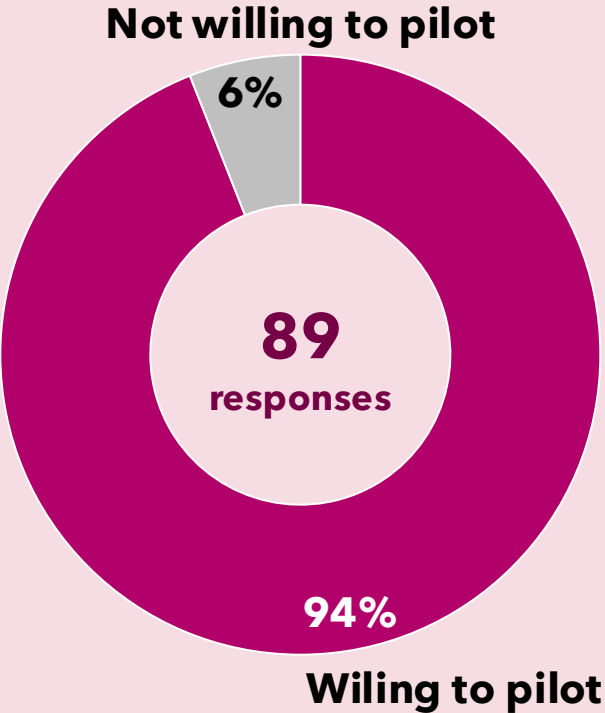


Key Insights

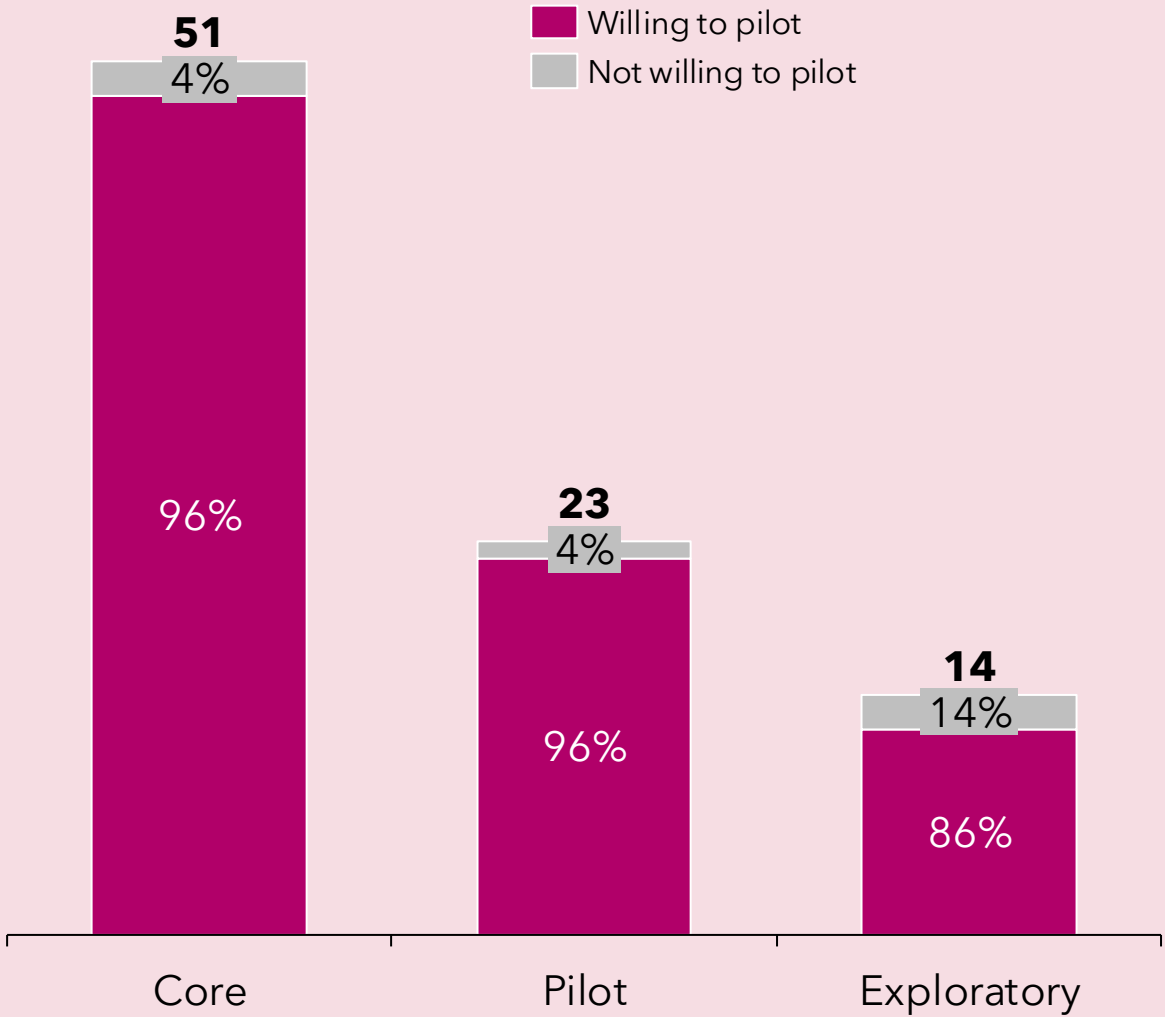
- **Gen AI is the most common offering**, with 57 companies providing solutions such as text/image generation, **reflecting the global surge in generative AI adoption** between 2023 and 2025
- A significant share of respondents also offer agentic AI systems and conversational AI/chatbots, indicating that **over half are building autonomous or natural language-driven solutions, a sign of a maturing ecosystem**
- **Traditional AI services remain widespread**, including automation, AI consulting, and AI training and capacity building
- **Core machine learning and data science services are offered** by around 42% of companies, while 35% specialize in natural language processing.
- **More specialized areas** such as computer vision, deep learning, AI infrastructure/MLOps, predictive analytics, and reinforcement learning **are present but less common**
- **Robotics and autonomous systems remain a smaller, niche segment**

Over 90% of respondents show a strong appetite in piloting AI solutions for government services, opening doors to potential PPPs

% of Companies Willing to Pilot AI Solutions for Gov Services



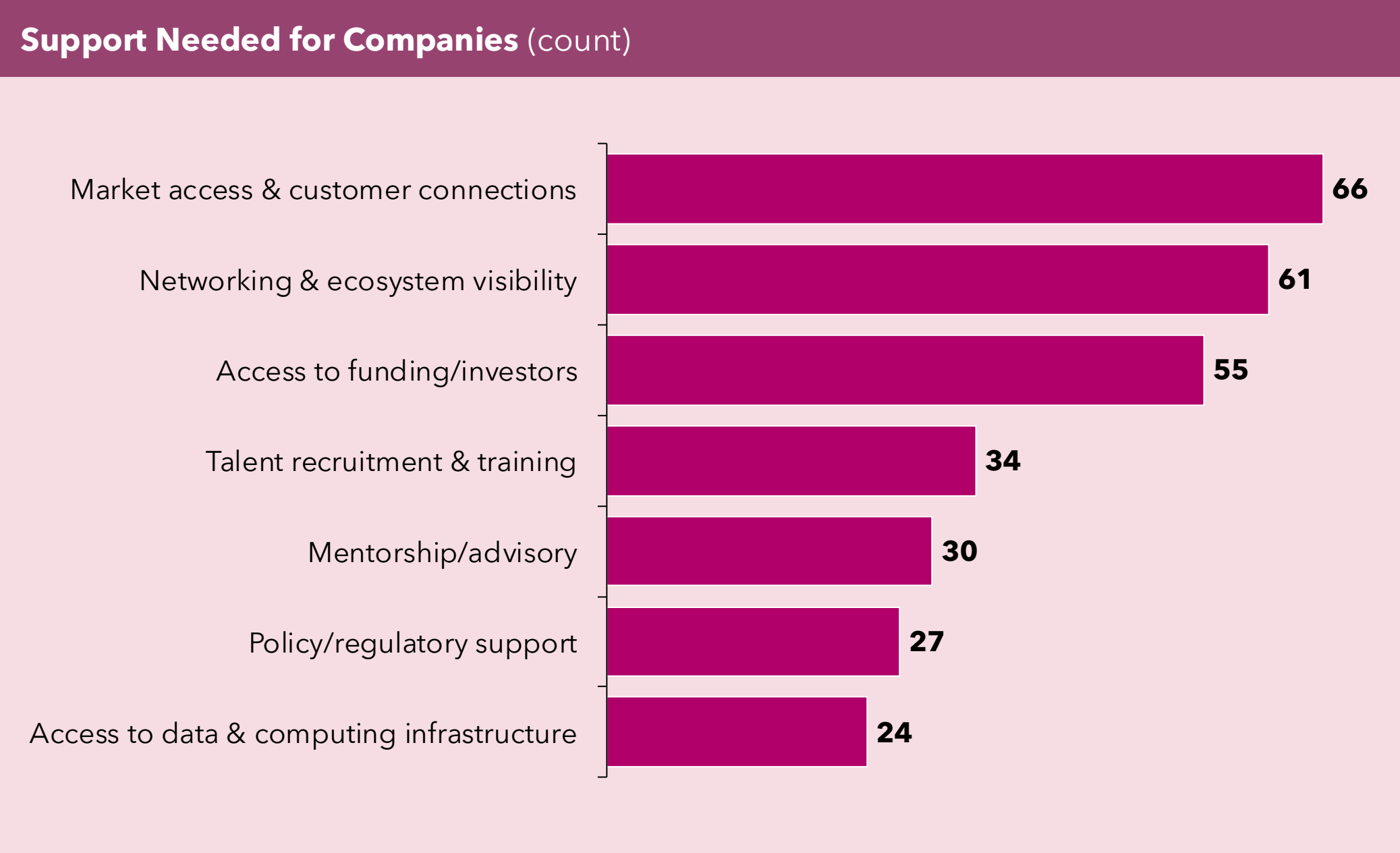
Companies Willing to Pilot AI Solutions for Gov Services by AI Maturity Level



Key Insights

- The near-unanimous willingness indicates that **companies see public sector collaboration as a win-win**: it could provide them with use cases and credibility, and help improve government services via local innovations
- The strong appetite suggests a **latent potential for public-private partnerships in AI** - if the government opens the door, local firms are ready to contribute to public sector
- Most **companies have AI at their core**, presenting a clear opportunity for **government to leverage these capabilities**
- **Few companies report that they would not be open to such pilot**, possibly due to focus on other markets or past difficulties
- Many companies explicitly commented that they have **ready solutions for government or are keen to engage** (e.g., one noted "we have ready-made products for government")

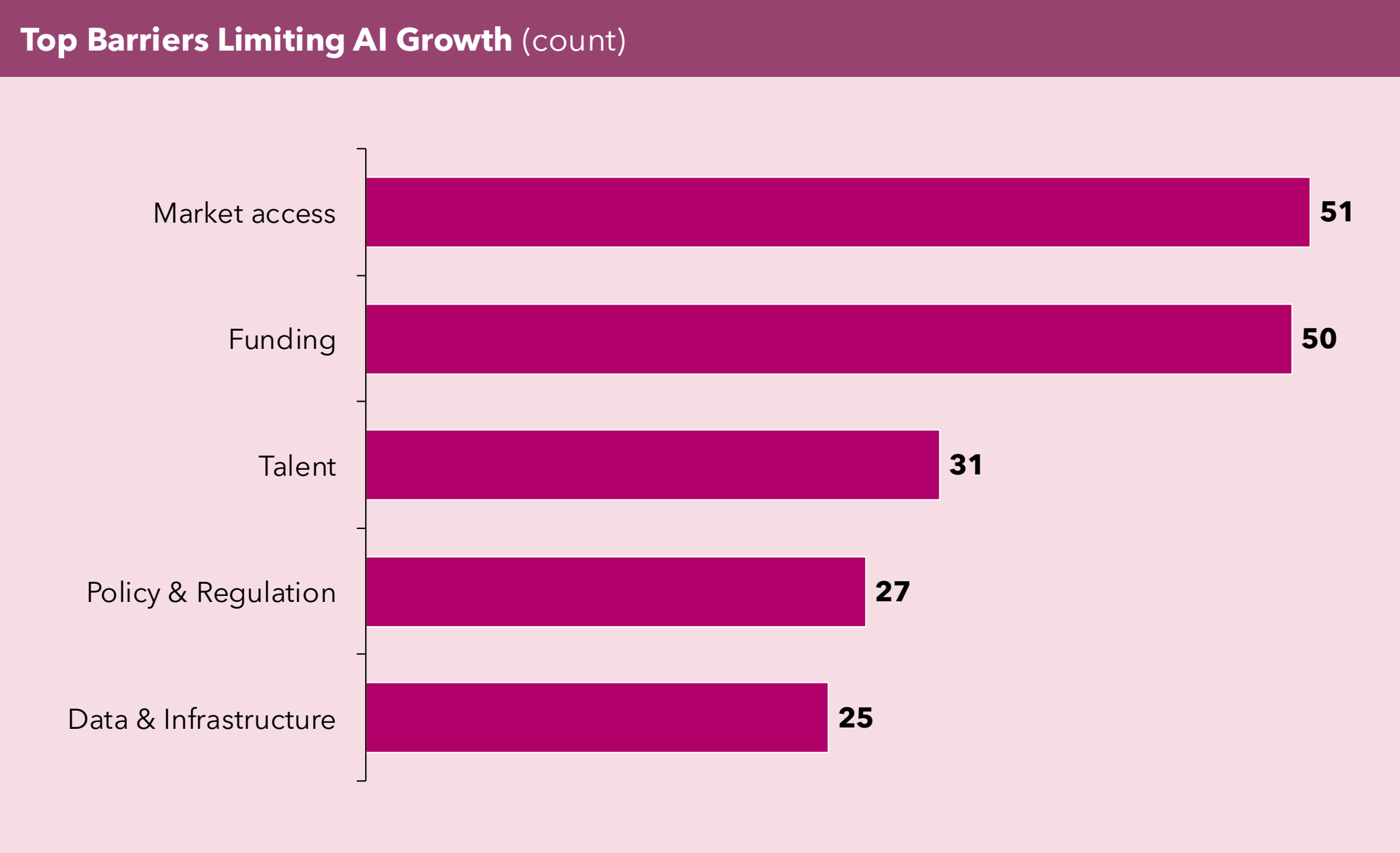
Market access and customer connections, networking, and access to funding are the top three areas of support sought by companies



Key Insights

- **Market access and customer connection is a top need** - while many have built solutions, they struggle with sales, business development, and scaling to new markets especially given Lebanon's market limitations
- **Networking and ecosystem visibility** was the second highest need since firms want more opportunities to **connect with peers, mentors, and potential partners/clients**, and to **increase their visibility in the tech ecosystem which can help them boost their businesses**
- **Access to funding/ investors remains a challenge**, highlighting the need for investor matchmaking and structured funding support
- **Other important needs include talent recruitment & training support** - indicating companies would **value programs to upskill talent** or help hire specialists, along with **mentorship/ advisory for business and technical guidance**
- Policy/regulatory support and access to data and computing infrastructure are **lower priority overall, but still significant for support**

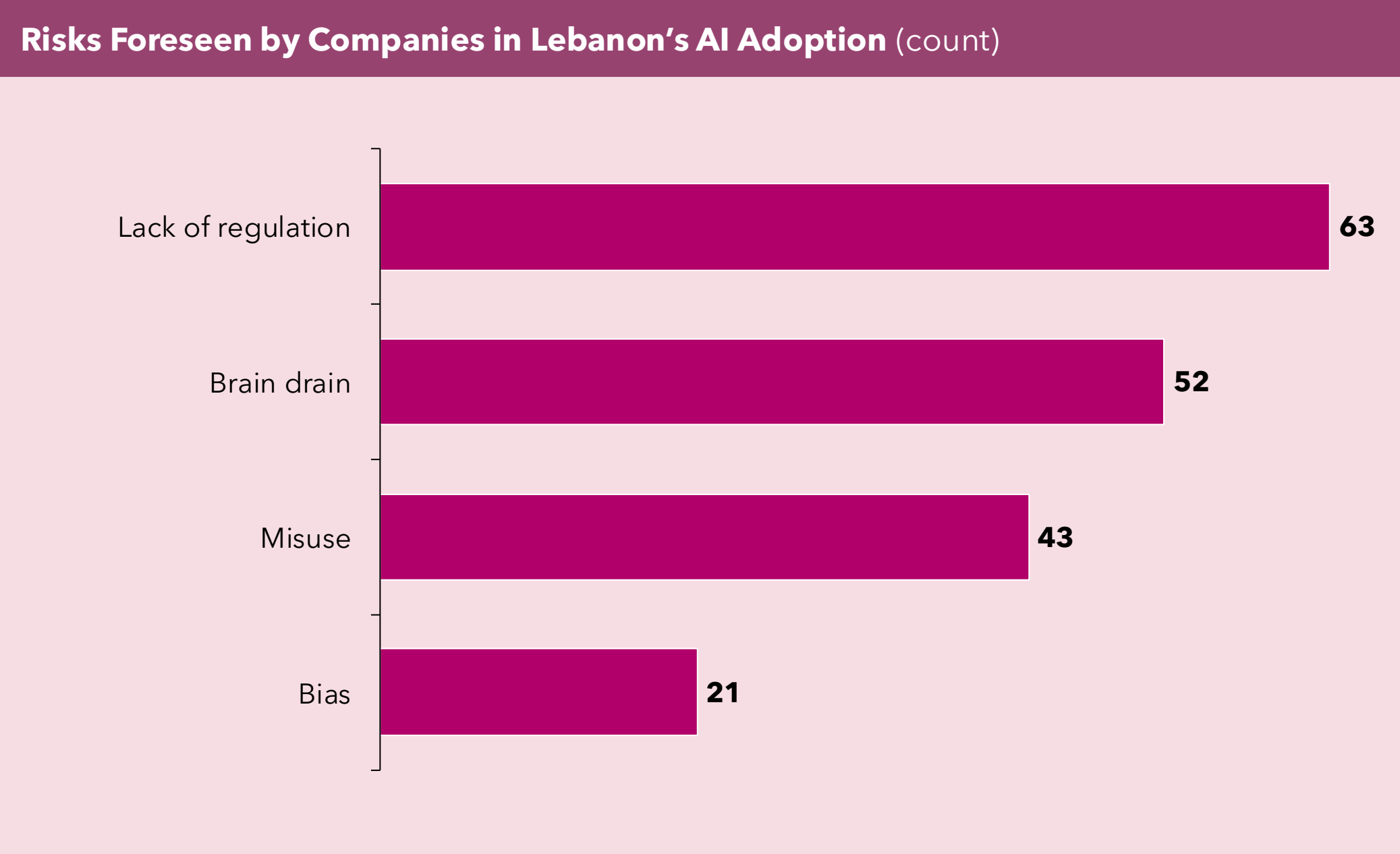
Companies perceive that market access, funding, and talent are the top three barriers that limit their AI growth



Key Insights

- **Limited market access is the most cited barrier**, mainly driven by the small size of Lebanon’s local demand and difficulty in reaching international
- **Lack of funding is the second biggest barrier** where companies struggle with insufficient capital to hire talent, invest in R&D, or scale operations; financial constraints is a fundamental growth hurdle
- **Talent shortage is also a challenge** - despite Lebanon producing skilled graduates, the brain drain and competitive global market make it hard for startups to retain the talent needed; this barrier aligns with the earlier finding of 44% experiencing talent shortages
- **Policy and regulatory issues** is also a notable barrier - this could include unclear regulations around AI, data, or business, as well as broader economic/political instability affecting business operations
- **Data and infrastructure limitations** were mentioned, indicating that access to quality datasets, computing power, or reliable infrastructure is a pain point

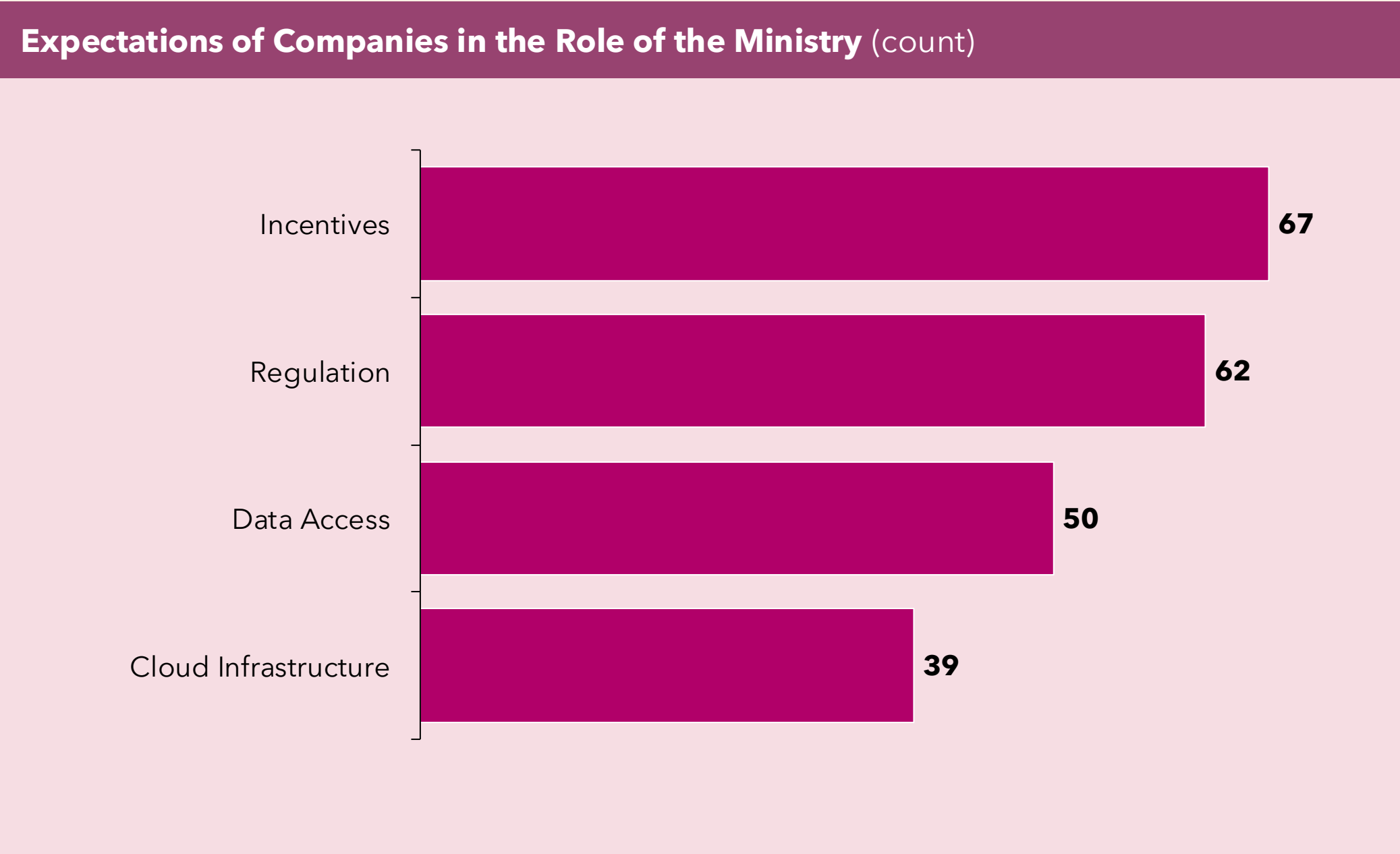
Companies foresee various risks in Lebanon's AI Adoption, with the lack of regulation viewed as the predominant risk



Key Insights

- **The predominant risk foreseen is lack of regulation or governance around AI;** Unregulated AI could lead to misuse or public mistrust, hindering adoption where companies want sensible regulation
- **Brain drain was the second-highest risk - the ongoing emigration of tech talent** due to economic conditions could impede the AI sector's growth if not addressed (e.g., through incentives to retain talent or diaspora engagement)
- **Misuse of AI (e.g., unethical use, security risks) is also a risk indicating concerns** that AI technologies could be applied irresponsibly in Lebanon without proper oversight or literacy
- **Bias in AI systems was mentioned, albeit to a lesser degree,** as a risk – reflecting awareness of AI fairness issues
- **The risk perceptions highlight the importance of developing ethical AI guidelines,** regulatory frameworks, and talent retention policies, which many companies are trying to follow/ advocate
- Other risks are mentioned such as **data sovereignty, socio-economic divides, and political instability/ corruption**

The Ministry has a crucial role in enabling the growth of Lebanon’s AI ecosystem, with most companies expecting government-led incentives

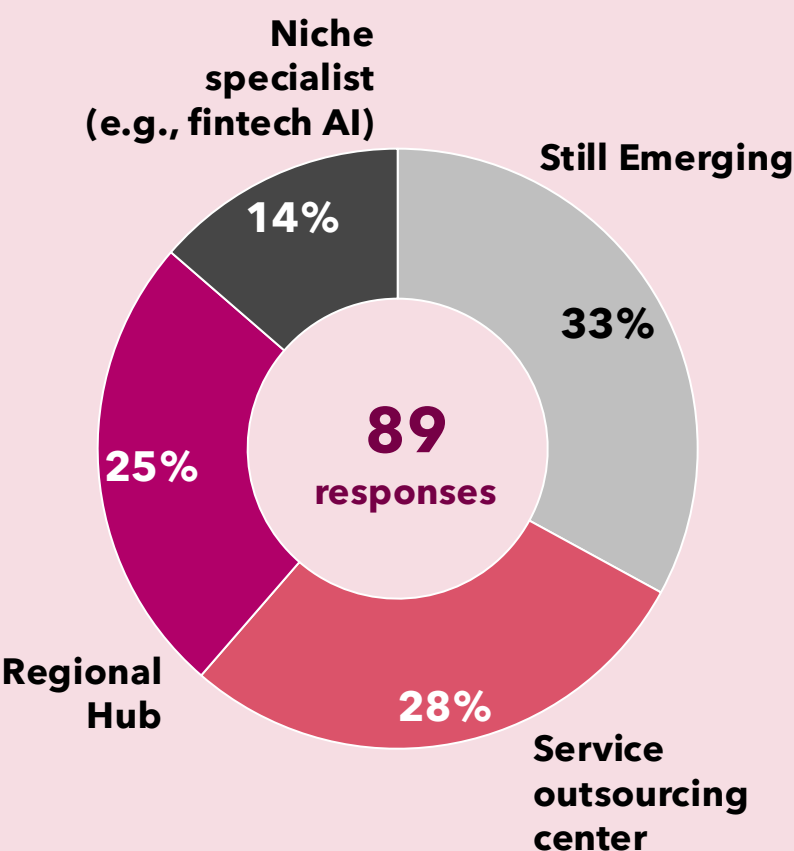


Key Insights

- **The top expectation from companies is for the Ministry to provide incentives** (e.g., tax breaks, grants, subsidies) to support AI startups and projects, **directly addressing the funding constraint** and stimulating growth
- **Companies expect the Ministry to lead on smart regulation** by establishing clear, innovation-enabling AI and data protection policies, helping mitigate regulatory uncertainty—their top perceived risk
- **Companies emphasize the need for data access from the Ministry** to open public datasets and support data-sharing initiatives to unlock AI innovation
- **Cloud infrastructure is also important**, as **affordable access to national or shared computing resources** would enable companies to build, test, and scale AI solutions effectively

Over half of respondents envision Lebanon as a regional AI hub or outsourcing center by 2030, while 33% believe it will remain emerging

2030 Expectations



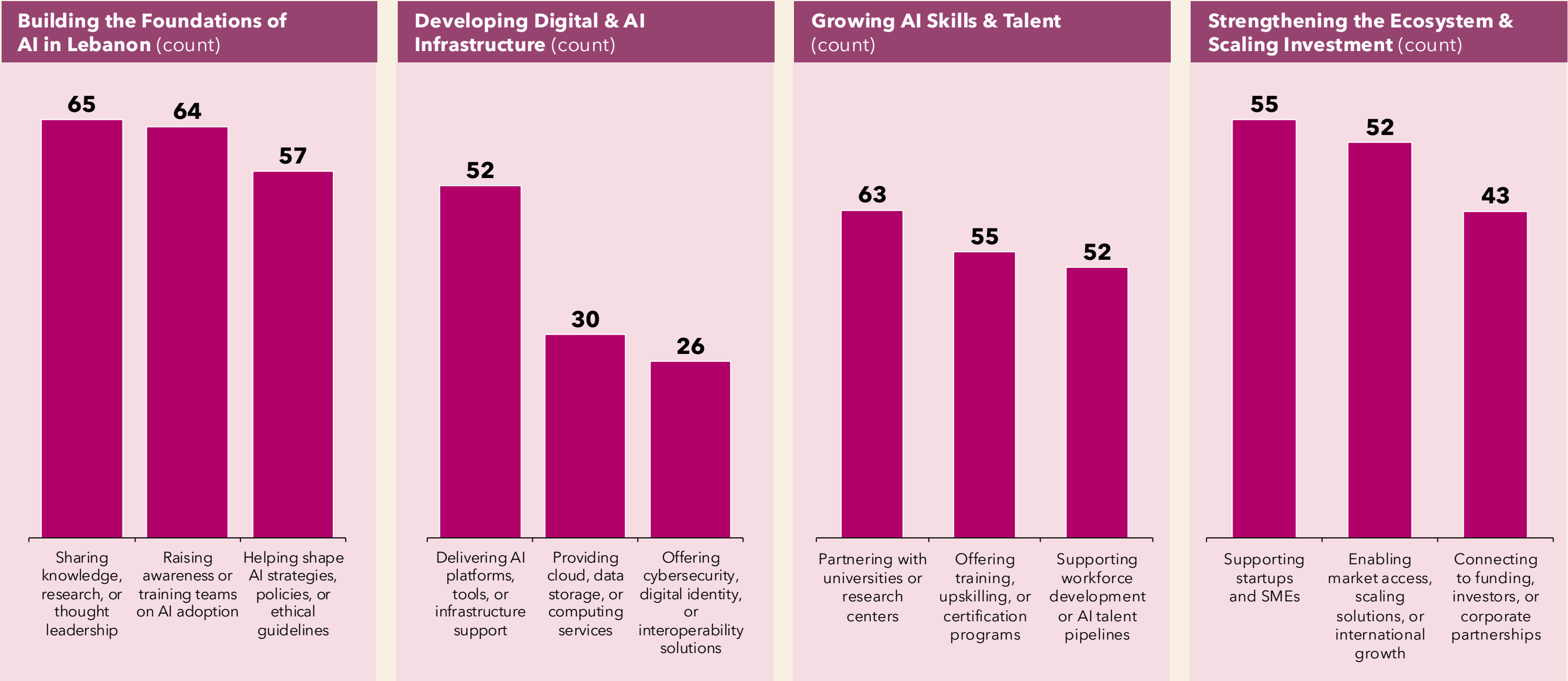
Biggest Opportunity for Lebanon to Leapfrog in AI (Selected Examples)

- “Talents, people, people, people”
- *Build a strong talent pipeline*
- *“Lebanon’s biggest AI leapfrog opportunity lies in developing Arabic-centric AI solutions”*
- *“Embedded in education system and security and defense”*
- *“AI in government”*
- *“Lebanon’s biggest opportunity to leapfrog in AI lies in leveraging its highly educated diaspora and entrepreneurial youth to build AI-driven startups serving Arabic-speaking and emerging markets. By focusing on applied AI in education, healthcare..”*
- *“Lebanon’s biggest AI leapfrog opportunity lies in deploying multilingual and dialect-aware natural language models and tools that bridge local gaps in education, governance, media, and business.”*
- *“Including AI in Academic programs asap. Leveraging AI for sectors where Lebanese talent has competitive advantage: service, hospitality, Arabic language, healthcare, education, etc.”*
- *“Reshaping the educational system from the ground up to fit the age of AI that will reshape society and bring the next generation of AI leaders in the region”*
- *“AI as service, state optimization (in a responsible non-DOGE way), AI Talent and Brain (by far), investor confidence in AI, AI in finance, AI in public affairs (veille socio-politique, economique), AI in construction (local and international)”*
- *“to become a specialist exporter of AI-enabled “niche knowledge services,” particularly in multilingual and domain-intensive AI, rather than trying to compete head-on with global AI giants”*
- *“Building AI generation, not technologies. Allowing everyone to be AI-driven (encouraging schools, universities, labor, governments, and other communities)”*
- *“Talent Development in AI Skills and Ethical Usage plus integrating with several LLM models and finally explore automation and Agentic AI usage in different scenarios”*

Key Insights

- While about more than half of respondents foresee a thriving regional hub or service outsourcing center, **over one third of respondents anticipate the industry will remain in a developing role** without major interventions
- This realism **underscores the need for strategic support** to move from an “emerging” state to a true regional player
- Many respondents mentioned **leveraging Lebanon’s talent (including diaspora talent)** as a key opportunity
- Others pointed to **education and upskilling as an area** where leaps can be made (given Lebanon’s human capital)
- Some **highlighted niche domains like Arabic language AI, healthcare, or banking** where Lebanon has local strengths that could be leveraged to create world-class AI solutions
- A common theme was that with **the right investment in talent and infrastructure, Lebanon could become an outsourcing and innovation hub** despite its challenges – turning its pool of skilled engineers and relatively lower labor costs into an advantage if connected to global markets

Scoring across the four MITAI pillars



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