

Executive Summary

Opportunities of artificial intelligence for addressing the shortage of skilled workers in the German Mittelstand

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Summary

The shortage of skilled workers is one of the greatest challenges for the German economy and especially for small and medium-sized enterprises. Compared to large firms, they are in a structurally disadvantaged position in the competition for qualified workers. Demographic developments will further intensify this problem. Against this background, the study examines how the use of artificial intelligence (AI) can mitigate the problem of skilled labour shortage, and which drivers and obstacles influence the use of AI.

Type of use determines the potential for meeting skilled labour demand

Whether AI contributes to reducing the shortage of skilled workers depends on its use: In the short term, the substitutive use of AI can reduce the workload of employees and reduce staffing problems. In the long term, however, AI is likely to be used in an increasingly complementary manner, leading to a fundamental change in job profiles and a growing demand for appropriately qualified employees. Since there is currently a shortage of these employees on the labour market, staffing problems might increase in the future.

Digital openness and competitive pressure are key drivers

Key drivers for the use of AI are the digital competence and affinity of entrepreneurs. A positive attitude toward digital technologies increases the willingness to explore the potential of AI and to implement certain applications. In addition, increasing competitive pressure is forcing many small and medium-sized companies to take a closer look at AI to realise productivity and efficiency gains. Job profiles are undergoing fundamental changes, particularly in knowledge-intensive industries: routine tasks are becoming less important, while consulting, analytical, and customer-oriented tasks are gaining in relevance.

Key obstacles: concerns, data security, and data availability

Concerns within the workforce are currently slowing down the use of AI. In addition, given the multitude of available solutions, there is uncertainty about suitable applications and their respective benefits. Inadequate data infrastructures, poor data quality, and unclear data protection requirements reinforce the reluctance of many small and medium-sized companies to use AI.

Framework conditions and continuous training are essential for AI adoption

It is up to companies to recognise and exploit the numerous opportunities offered by AI. It is essential to systematically review the respective job profiles of employees and to invest in the further training of the workforce. Politicians, chambers of commerce, associations, and universities are also called to adapt training and education structures and to strengthen lifelong learning. Simultaneously, the state must create framework conditions that allow the safe and independent use of AI applications.