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THE DEMAND FOR QUALIFIED PERSONNEL IN THE PROCESS OF SOCIO-ECONOMIC TRANSFORMATION, DETERMINANTS AND CHALLENGES. CASE STUDY

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It is not the strongest or the most intelligent who survive,
but those who respond best to change.
Charles Darwin

Purpose: the article, "The Demand for Qualified Personnel in the Silesian Voivodeship. Determinants and Challenges," is an attempt to diagnose the situation, but also to reveal trends and barriers that will be taken into account in the development of human resources in the Silesian Voivodeship.
Metodologia: the theses presented in the article were verified using the following methods: literature review, critical analysis of literature, analysis and comparison of documents and an example of good practices.
Results: research indicates that one of the key elements of the Silesian Voivodeship's sustainable development lies not only in economic transformation and adaptation to global megatrends, but above all in the conscious development of human capital. Human resources—understood as the pool of knowledge, skills, and attitudes of residents—are the foundation of the region's lasting competitiveness.
Research limitations/implications: the scope of data used in the research may not cover all identifiable directions and trends of sustainable development of the Silesian Voivodeship, but only those that appeared in adaptive analyses covering the purpose of the article.
Practical implications: in the process of social and economic transformation, the cooperation of three key spheres: science, economy and education is becoming a necessary condition for meeting the challenges related to decarbonisation, digitalisation, ageing society and changes in the labour market.
Originality: this article attempts to systematize the main determinants of demand for qualified personnel in the Silesian Voivodeship. We present not only current deficits and forecasts but also the broader socioeconomic context that influences career development in the voivodeship. Particular attention is paid to recommendations and best practices that can form the basis for

building a coherent and long-term human resources policy, taking into account not only the needs of the economy but also the ambitions and potential of the voivodeship's residents.
Keywords: transformation, qualified staff, case study.
Category of the paper: research paper.

1. Introduction

The Silesian Voivodeship has long been one of the most important industrial centers in Poland, but it is also a region particularly hard hit by structural and social changes (Regional Profile Silesia, Poland, 2024). Economic transformation, ongoing deindustrialization processes, and the pressures of global trends—such as digitalization, the green transition, and an aging population—are significantly impacting the local labor market. This dynamic and ambiguous landscape raises one of the key questions of contemporary regional policy: will the Silesian Voivodeship have an adequately qualified workforce to meet upcoming development challenges? The article, "Demand for Qualified Personnel in the Silesian Voivodeship. Determinants and Challenges", attempts to diagnose the current situation and identify trends and barriers that will impact the development of human resources in the voivodeship. The authors present data and analyses on professional deficits, demographic structure, the role of vocational education, and the mismatches between the education system and the actual needs of the labor market. Particular attention is paid to phenomena such as the outflow of young people, the low prestige of technical professions, and the lack of a coherent policy linking education and employment. This article attempts to systematize the key determinants of demand for qualified personnel in the Silesian Voivodeship. We present not only current deficits and forecasts but also the broader socioeconomic context that influences career development in the voivodeship. Particular attention is paid to recommendations and best practices that can form the basis for building a coherent and long-term human resources policy, taking into account not only the needs of the economy but also the ambitions and potential of the Silesian Voivodeship's residents.

2. The workforce of the future in a region of transformation

The Silesian Voivodeship is currently at a crucial moment in its history – a turning point where its industrial past collides with the demands of a modern, green, and digital economy. For decades, the region has based its identity on the mining sector, heavy industry, and large-scale production. These pillars, while still important, are now being gradually dismantled under the influence of global processes – decarbonization, automation, energy transition, and social

transformation. This represents not only a shift in the economic model but also a profound social transformation, affecting everyday experiences of work, education, interpersonal relationships, and aspirations. In this context, the workforce of the future is becoming much more than just a component of the employment system – it is a key actor of change (Talent trade-offs…, 2025). Whether the Silesian Voivodeship seizes its opportunity to transform into an innovative, green, and socially resilient region will depend on the quality, flexibility, and competence of the local workforce. Changing the employment structure – from heavy industry to knowledge sectors, specialized services, and green technologies – requires not only a restructuring of labor market institutions but also a fundamental shift in professional culture. From this perspective, social transformation means redefining the prestige of professions, overcoming multi-generational patterns of "full-time" work, as well as strengthening entrepreneurial attitudes, openness to change, and readiness for lifelong learning (Torrejón Pérez, Fernández-Macías, Hurley…, 2024). This is not only a systemic challenge, but also an identity one – the region must develop a new narrative about itself – as a place not of the end, but of a new beginning. The parallel economic transformation of the Silesian Voivodeship assumes a gradual shift away from exploitative, resource-consuming development models towards an economy based on sustainability, innovation, and knowledge. This is not only a necessity resulting from EU climate goals and global trends, but also an opportunity for long-term strengthening of the region's competitiveness and improving the quality of life of its residents. In this perspective, a new quality of human resources becomes a key factor – capable not only of operating modern technologies but also of co-shaping solutions that respond to complex social and environmental challenges (Green Deal…, 2025). The workforce of the future will have to function in a reality in which the energy sector is shifting towards distributed renewable sources, industry is focusing on automation and robotics, and the economy requires the ability to manage resources in a circular manner. The importance of professions related to wind energy, photovoltaics, and energy storage is growing, as well as those related to building energy efficiency, climate change adaptation, and the design of zero-emission urban infrastructure. In these areas, engineering and technical competencies, as well as the interdisciplinary ability to integrate knowledge from various fields, will be particularly important. At the same time, social sectors are gaining increasing importance: care for the elderly, healthcare services, environmental education, psychological and development support – areas where social, empathetic, and communication skills predominate. Such sectors, although often undervalued in traditional economic strategies, will constitute one of the pillars of a green and inclusive transformation. Industries related to digitization and mobility are also developing dynamically, particularly information technology, data analytics, artificial intelligence, low-emission logistics, and electromobility. They will create new professions and career paths, requiring both technical skills and critical thinking and adaptability. Therefore, the development of the workforce of the future cannot be left to chance. Strategic investment in vocational education, retraining and lifelong learning programs, a consulting system based

on market data, and closer cooperation between education, employers, and local governments are essential (Workforce of the future…, 2018). Only then will the region's residents be able not only to navigate the changing economic reality but also to become active co-creators of it. Therefore, today more than ever, we need a workforce understood as a collective potential for change – people who will not only respond to change but also co-create it. Their development cannot be left to chance – it requires a joint strategy between public institutions, the private sector, and education. A region undergoing transformation needs people capable of not only navigating the new order but also giving it meaning.

3. Changing needs of the labor market

As already noted, the Silesian Voivodeship is currently at the heart of strategic economic changes that are impacting the local labor market in ways unpredictable even a decade ago. Rapid technological progress, digitization, automation of production processes, and the green transformation are redefining the demand for skills, professions, and forms of employment. First and foremost, we are observing a dynamic decline in demand for traditional industrial professions: miners, steelworkers, and conventional machine operators. They are being replaced by new technical and engineering staff involved in the creation, operation, and maintenance of modern installations – especially in the renewable energy, automation, robotics, electromobility, and digital production systems sectors. These are no longer just engineers, but also technicians, PLC programmers (a PLC programmer is responsible for programming a programmable logic controller (PLC) to control it and implementing its functions in control systems), industrial cybersecurity specialists, data analysts, and supply chain and logistics specialists. In this perspective, service sectors are gaining importance, increasingly taking over the role once held by heavy industry. Care, healthcare, education, and environmental sectors offer employment opportunities not only for those changing career paths but also as alternative development environments. Here, demand for caregivers for the elderly, therapists, environmental educators, specialists in socio-ecological project management, and local change agents is growing. Transformation, a driving force, supports the development of technology industries, especially IT. A growing number of start-ups, software companies, competence centers of global corporations, and research and development centers are emerging in the region. This translates into an increased demand for programmers, specialists in artificial intelligence, cloud computing (an IT technology used to process and store data in a virtual space), data engineers, and UX designers (persons responsible for user experience design, i.e., designing user experiences in interaction with a product, most often digital, such as an app or website). This knowledge requires not only technical skills but also soft skills – creativity, teamwork, communication, and change management. The role of

transversal, digital, analytical, linguistic, and social skills is growing. Even in technical professions, the ability to critically analyze data, work with cloud computing, and be flexible and proactive in problem-solving is gaining importance. A case in point is provided by research conducted by the Voivodeship Labor Office in Katowice among companies operating in smart specializations. Employers hiring for specialist positions most frequently cited the need for computer software (31% – including specialized software), good English (19.3%), and programming skills (6.9%). At the same time, "soft" skills were highly valued: reliability and conscientiousness, quick learning (49%), efficiency in using work tools (42.8%), and problem-solving skills (40%). In terms of two-year forecasts, entrepreneurs predicted particularly growing demand for IT specialists and mechanics, while maintaining the requirement for experience and transversal competencies (including rationality of action 65.8%, learning speed 76.3%). This data comes from the report "Demand for qualifications/skills in innovative enterprises operating in the area of smart specializations against the economic background of Silesia" (VLO Katowice, quantitative and qualitative study; including N = 833 in the forecast module) (Demand for qualifications/skills…, 2021). This approach supports the emergence of new employment models, flexible contracts, remote work, and project work. The need to adapt to the changing needs of the labor market forces profound and systemic transformations in education – both formal, conducted in schools and universities, and non-formal education: courses, training, mentoring, and continuing education. The current education model, based on static knowledge transfer and a rigid division into educational and professional stages, is proving insufficient in the face of dynamic, multidimensional technological, social, and climate changes. This is confirmed by, among others, The experience of the Ruhr region (Germany) shows that long-term economic diversification requires parallel investments in research and development, culture, and the revitalization of post-industrial areas – from technology parks to social and educational functions. A consistent "three-pillar" policy proved crucial there: green infrastructure, knowledge clusters (e.g., energy, materials, logistics), and raising adult qualifications, supported by a dual education system. The lesson for the Silesian Voivodeship is the need to build lasting chains of cooperation between universities, local governments, and businesses, so that projects do not end with the financing cycle. In Asturias (Spain), the emphasis was on a gradual phase-out of coal through social contracts and "just transition" programs, combining protective benefits with active labor market policies; training vouchers and fast-track retraining for technical professions related to renewable energy sources and the maritime economy proved particularly effective. It is significant, however, that in Asturias, the slow modernization of small and medium-sized enterprises limited the absorption of new skills. This serves as a warning that in the Silesian Voivodeship, enterprises should be modernized in parallel (digitalization, automation, data management), not just by educating employees. The Ruhr region also stands out for the scale and quality of the revitalization of brownfield sites (mines, coking plants) into spaces for start-ups, cultural institutions, and public services; this demonstrates that spatial policy is a tool for the labor

market, as it shortens the gap between talent and employers. In both regions, local "competence centers" serving as brokers for training and internships increased their effectiveness – this solution could be transferred to the Silesian subregions by linking them with vocational schools and universities. Comparisons from the Ruhr and Asturias confirm that soft skills (teamwork, communication, change management) are just as critical as technical skills; programs should develop them from the secondary school level. A key success factor was stable funding – a mix of national and European funds – and multi-year, phased mine closure schedules, which reduced labor market shocks. At the same time, the Ruhr Basin demonstrates that without an active migration policy and "attracting talent", demographic decline is a threat. The Silesian Voivodeship should link transformation with improved quality of life (transport, housing, care services). Asturias offers a valuable model for developing related sectors (e.g., industrial and educational tourism) as a source of jobs that don't require long training cycles, helping people over 40 to smoothly transition into new paths. In both cases, strong social dialogue (trade unions, employers, local governments) minimized social costs. In the Silesian Voivodeship, this dialogue should also encompass the small and medium-sized enterprise sector and non-governmental organizations. The practice of "competency maps" is also a good point of reference – in the Ruhr and Asturias, regularly updated skill matrices allowed for precise matching of school and course offerings to demand forecasts. Finally, continuing education proved to be the foundation for the sustainability of the changes: the right to lifelong learning supported by flexible micro-qualifications and the validation of competencies acquired informally. A comparison of these experiences indicates that a hybrid model will be most effective for the Silesian Voivodeship: simultaneous industrial modernization, fast-track retraining, strengthening of social services, and intelligent urban revitalization that attracts investors and retains residents.

In the face of digital and ecological transformation, education must become more responsive, flexible, and future-oriented. A key task is to rapidly adapt core curricula and educational models to the realities of the Fourth Industrial Revolution. This means not only updating curriculum content with new technologies (e.g., automation, programming, AI, renewable energy), but also redefining teaching methods, with a greater emphasis on transversal competencies, project-based skills, critical thinking, and collaboration within interdisciplinary teams. Intensive, partnership-based collaboration between schools, universities, employers, and public institutions is also essential. Only in this way will it be possible to develop flexible educational and professional paths that meet the real needs of local labor markets. Apprenticeships, dual education, sponsored classes, and industry competence centers—these are tools that allow for the integration of learning with experience and the building of bridges between the world of education and the realities of economic transformation. At the same time, the importance of non-formal and informal education cannot be overlooked. The region's transformation requires the mass mobilization of adults, especially those affected by the transition away from heavy industry and mining. Access to retraining programs, digital

platforms for self-education, and systems for validating competencies acquired outside of school are essential to ensuring genuine social and professional inclusion in changing conditions. Finally, education must adopt a long-term perspective, extending beyond the current needs of the labor market. Its role is also to shape civic, pro-ecological, and innovative attitudes that will allow the region's residents not only to adapt to change but also to actively participate in its creation. From this perspective, the development of education is not a cost, but rather the most important investment in the region's future. In summary, the needs of the labor market in the Silesian Voivodeship are undergoing a profound evolution. The current model based on physical strength and industrial production is being replaced by a knowledge economy, green technologies, and social services. This is a major test for the education system, institutions, and local policy – whether they will be able to adapt to new realities and support the development of the workforce of the future.

4. Shortage qualifications and competencies with an emphasis on megatrends and forecasts

The Silesian Voivodeship, one of the most densely populated and industrialized regions in Poland, is currently undergoing a profound transformation – not only economically but also socially. This process, driven by megatrends such as automation, digitalization, energy transition, climate change, and an aging population, is directly impacting the structure of demand for professional qualifications and competencies. With ongoing decarbonization and transformations in the industrial sector, the region is increasingly experiencing competency shortages, particularly in the areas of new technologies, green professions, and social services. As numerous assessments (https://barometrzawodow..., 2025) show, the region's shortage professions are dominated by both specialist positions (e.g., electricians, automation technicians, mechatronics technicians, digitally controlled machine operators) and those related to the service sector (e.g., drivers, nurses, psychologists, caregivers for the elderly, and vocational teachers). The importance of so-called soft skills – the ability to collaborate, solve problems, adapt to change, and engage in lifelong learning – is also growing. Market forecasts and strategic documents indicate that the most sought-after qualifications will include digital skills (programming, data analysis, cybersecurity), engineering skills (automation, robotics, materials engineering), environmental skills (circular economy, renewable energy technologies), and social skills (care, education, mental health). Transversal competencies are also gaining importance – they connect various fields and enable functioning in complex professional environments (McKinsey Technology…, 2025). Competency deficits in the Silesian Voivodeship are becoming particularly dangerous in light of the growing dual structural challenge, which in the long term could undermine the region's development

potential. On the one hand, older workers are leaving the labor market at an increasingly rapid pace – representatives of the generation that for decades built the industrial backbone of the Silesian Voivodeship. These are often individuals with unique professional qualifications: technicians, electricians, welders, complex machine operators, energy engineers, and production masters. Their knowledge and experience are difficult to replicate in a short time, especially given the low number of successors in the same career paths. On the other hand, the younger generation is increasingly less likely to choose educational paths aligned with actual labor market demand, driven more by prestige or media trends than by employment forecasts. The popularity of humanities and general studies, coupled with a simultaneous decline in interest in vocational and technical education, exacerbates the problem of mismatches between qualifications and economic needs. This applies not only to secondary schools but also to universities, which are still insufficiently integrated with the socio-economic environment. The problem is further complicated by the insufficient number of vocational teachers and practical instructors, particularly in technical and industrial specializations. Many schools lack specialists who could impart modern knowledge and simultaneously inspire students to choose a technical path. Teaching staff often lack the latest technological knowledge or exposure to current industrial practices. The low prestige of the vocational teaching profession and insufficient systemic support lead to the disappearance of the competence chain of generations (Edukacja 2025, 2025). As a result, the educational and vocational system in the region lags behind the actual transformation processes. Without decisive corrective action – including support for educators, modernization of vocational education, promotion of shortage professions, and improved counseling – this threatens to perpetuate competency gaps and weaken the Silesian Voivodeship's position in the economy of the future. In the face of competency deficits and a dual generational challenge, reflection on the solutions used in the world's most advanced economies is particularly important. Countries such as the United States, Japan, Canada, Germany, and South Korea, facing similar challenges of an aging population and a shortage of technical specialists, are systematically investing in the development of the workforce of the future, treating human capital as a strategic resource for national competitiveness. One of the key measures in these countries is the strong link between the education system and the labor market, based on tripartite cooperation: schools, employers, and public institutions. In Germany, the dual model, combining education with work in a company, has become the foundation of vocational education (Haasler, 2020). In Canada and the USA, community colleges and short-cycle programs are developing dynamically, which allow for a quick response to local competence needs, especially in the technology and care services sectors (College Education in USA…, 2025). In Japan and South Korea, great importance is placed on continuous professional development and a culture of "lifelong learning", supported by the state and large enterprises. Reskilling programs and online courses certified by universities and technology companies (e.g., MITx, edX, Coursera) are standard tools for responding to the changing needs of the economy (Bradford, Park, Brown, 2024).

Moreover, many highly developed countries actively promote technical and social professions, which, despite their strategic importance, often enjoy lower social prestige. Canada and Germany have introduced nationwide information campaigns demonstrating the attractiveness of career paths, high quality of life, and development potential in sectors such as renewable energy, automation, caregiving, and technical education. These behaviors are characterized by one thing: proactive planning and long-term thinking about society's competency structure (Empowering people to act…, 2025). This is not just about responding to shortages, but also about shaping future needs and supporting informed educational and career choices. For the Silesian Voivodeship, which is also struggling with the outflow of young people and the lack of qualified staff, adapting these patterns may provide a real opportunity to build a lasting development advantage.

5. Determinants of the demand for qualified personnel with an emphasis on economic forecasts in the global dimension

The demand for qualified personnel, both regionally and globally, is shaped by a complex set of economic, technological, and social conditions. The section of the article devoted to the situation in the Silesian Voivodeship highlights that local competency shortages are not an isolated phenomenon, but part of a much broader trend resulting from global development megatrends and structural transformations in the global economy. Analyzing these determinants from a macroeconomic perspective allows for a better understanding of the directions in which the education system, labor market planning, and regional policy should develop. One of the most important factors determining future demand for personnel is the accelerating digital transformation. Globally, it is predicted that by 2030, nearly 75% of all jobs will require intermediate or advanced digital skills. Artificial intelligence, data analysis, process automation, software engineering, and cybersecurity will become the foundation of most sectors – from industry to education, healthcare, and transportation (Mikhalkina, Nikitaeva, 2022). As a result, the employment structure will shift towards technical, engineering, and analytical professions. The second key determinant is demographic change, particularly the aging population in highly developed countries. UN forecasts indicate that by 2050, one in four people in Europe and East Asia will be over 65 (Bloom, Luca, 2016). This phenomenon generates a growing demand for specialists in long-term care, geriatrics, health psychology, and social services. At the same time, in many regions of the world, there is pressure to increase the professional activity of women and people with disabilities – which also requires appropriate staff qualifications in supporting sectors (Securing the future…, 2023). Climate change and energy transformation are another factor, driving the development of the "green economy". The renewable energy sector (RES), energy efficiency, the circular economy,

and environmental engineering are areas where global investment is growing exponentially, and with it, the demand for specialists: designers, installers, engineers, auditors, and environmental advisors. According to a report by IRENA (International Renewable Energy Agency), by 2030 the number of jobs in the renewable energy sector worldwide will increase to over 38 million – which means a huge challenge for the education and retraining systems of the workforce (Securing the future…, 2024). In turn, geopolitical instability and the reconfiguration of supply chains following the COVID-19 pandemic and as a result of wars (e.g., in Ukraine) are increasing the importance of local and regional industrial competences (Bednarski, Roscoe, Blome, Schlepe, 2025). Strengthening production sovereignty in developed countries is resulting in the return of some production to home countries (reshoring), which in turn creates the need to rebuild human resources in traditional, yet modernly managed industries, such as metalworking, industrial automation, logistics, and quality. Global cultural and social changes are also noteworthy, as they are driving the growing importance of soft skills—relationship management, conflict resolution, adapting to change, creativity, and working in multicultural teams. In the era of remote work and project-based organizations, these skills are becoming as crucial as technical competences (Poláková, Horváthová, Madzík, Copuš, Molnárová, Polednová, 2023). All of the previously mentioned phenomena-technology globalization, energy transformation, demographic changes, digitization, and decarbonization – are also impacting the Silesian Voivodeship, whose historical industrial heritage is becoming both an asset and a challenge. The region cannot merely passively adapt to trends – it must proactively design the future of its human resources. This means moving away from the logic of "reactive training to address shortages" and toward strategic competence development based on forecasted labor market scenarios. In this article, we present five scenarios for the future of the labor market that could become the basis for planning political and educational activities in the region. The first is the scenario of technological dominance (automation and AI) (Imbusch, Steg, 2023). The labor market is dominated by technologies, in which some traditional professions disappear, replaced by new ones requiring advanced digital and engineering competencies. In this model, the Silesian Voivodeship must prioritize training specialists in fields such as programming, data analysis, automatic process management, and robotic systems engineering. A sustainable development scenario, in which the region's economy is transformed towards "green" sectors, determines the growing importance of professions related to renewable energy, energy efficiency, the circular economy, and adaptation to climate change (Soergel, 2012). Environmental, engineering, and management competencies, as well as the ability to work in interdisciplinary project teams, are becoming crucial. In a scenario based on services and interpersonal relationships, society is aging, and the importance of care, education, and healthcare services is growing (Thinley, 2021). The role of soft skills, such as empathy, communication, and interpersonal skills, is strengthening. The Silesian Voivodeship can capitalize on this scenario by developing regional centers for social and medical services and educating staff in modern forms of care and support. A novelty is the scenario of regional

economic sovereignty. In this scenario, the emphasis is on the geopolitical crisis and disruptions to the state's supply chains. This scenario results in a pattern where regions strengthen their local production potential. Industry is reviving, but in a modern, automated, and ecological form (Miró, 2023). Technical specialists, advanced production line operators, mechatronics engineers, logisticians, and leaders of technological change in small and medium-sized enterprises are needed. The fifth scenario is dominated by social inclusion and balance. Concern for social cohesion, combating exclusion, and activating those previously marginalized in the labor market are at the forefront. Social, coaching, adaptive, and intercultural competencies are becoming as important as technological ones. In this model, the demand for educators, career counselors, local facilitators, and HR specialists is growing. Each of these scenarios requires not only a different competency structure but also a different model of cooperation between schools, universities, employers, and local government. The workforce of the future—depending on which scenario materializes—must be not only technically well-prepared but also flexible, open to learning, and ready to fulfill various roles in the evolving work ecosystem. Therefore, the workforce development policy in the Silesian Voivodeship should be based on flexible, scenario-based forecasts, enabling not only reacting to change but also actively shaping it. It is precisely this ability to envision the future in various scenarios that will become the region's competitive advantage in a world of multidimensional transformation.

6. Conclusion - staff as a condition for sustainable development of the region

It seems that the sustainable development of the Silesian Voivodeship requires not only economic transformation and adaptation to global megatrends, but above all, the conscious development of human capital. Human resources – understood as the pool of knowledge, skills, and attitudes of residents – constitute the foundation of the region's lasting competitiveness. The collaboration of three key spheres: science, economy, and education is becoming essential to meeting the challenges of decarbonization, digitalization, an aging population, and labor market transformations. Cooperation between universities, the economic sector, and local governments must go beyond symbolic partnerships. Integrated platforms are needed, where science serves not only to generate knowledge but also becomes an active participant in socio-economic transformation – implementing innovations, training future specialists, and supporting enterprises in adapting to new realities. At the same time, the education system – from vocational schools to universities – should be refocused on flexible teaching models that respond to changing market needs and enable lifelong learning. It is worth identifying more specific policy tools that could translate the general assumptions of the transformation into

practical actions. First, incentives for technical education are essential – in the form of industry scholarships, tax breaks for employers co-financing vocational training, and the development of a dual system of learning and work. Second, programs are needed to improve digital skills, encompassing both industrial sector employees and those at risk of exclusion from the labor market. Such initiatives should combine practical training with modules on digital security, data analysis, and the use of new technologies in Industry 4.0. Another tool could be local industry competence centers, where universities, secondary schools, and businesses collaborate to run courses, research projects, and internships for students and adults. Grants and incentives for companies implementing employee retraining programs should also be considered, as should the creation of regional social innovation funds to support initiatives that engage older people, women, and migrants in the labor market. Finally, the development of flexible forms of lifelong learning – from micro-certificates and short courses to mentoring and online continuing education programs – is crucial. Such targeted policy measures will not only address the current challenges of transformation but also build the region's long-term resilience and ensure its residents have a real stake in creating a new economy. Sustainable development also means inclusion – activating groups at risk of exclusion and leveraging local social resources. In this context, investments in social, environmental, and technological competencies must be coordinated and based on a shared strategy of all regional stakeholders. Only then will it be possible to create a dynamic and resilient work ecosystem in which staff are not passive performers of tasks, but co-creators of innovative and responsible solutions. Therefore, staff are not merely a component of the system – they are its key driver. Their development is not a cost, but an investment in the future of the Silesian Voivodeship as a region of knowledge, collaboration, and sustainable growth.

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