Adapting to the Digital Shift: Skills Development and Workplace Transformation in the Era of Human-Technology Collaboration

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Abstract

The explosion of data and its handling has reshaped business priorities and changed conventional decision-making methods. Organisations need to think about how to successfully redesign jobs and ways of working as a fusion, not a compromise, between people and technology to increase the leverage of technology. People and technologies have become intensive collaborators. Analytical thinking is becoming the most sought-after skill, along with creative thinking and other cognitive skills. Openness, flexibility, and agility, along with a high level of motivation and self-awareness, as well as the desire for lifelong learning, are personal characteristics that distinguish a desirable employee. This paper aims to identify the changes that have occurred because of the digitisation of workplaces and the consequent development of skills as the basis of good and quality work. The scientific contribution of this paper is to methodologically explain the changes caused by digitisation and point out the development factors. The methodological paper describes research on the education and investment of human potential skills in a domestic and foreign sample of surveyed Croatian migrants. This research concludes that the respondents believe that everyone individually deserves the most for the development of human potential and that they are not ready to invest in the development of their skills.

Keywords: skills; digital skills; digitisation; new trends in the labour market; education

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Introduction

Digital skills encompass a wide range of competencies, from understanding social media trends to expertise in cybersecurity. These skills are increasingly critical for a successful workforce, particularly as businesses accelerate their digital transformation efforts in response to the pandemic. While the term "digital skills" is often used interchangeably with "technical skills," it represents a broader scope of abilities. Employers and managers must not only identify these skills but also foster them effectively. Organisational success depends on building trust, cohesion, psychological safety and creating high-performing teams comprised of individuals who possess both digital and soft skills (Krestová et al., 2024).

Agile organisations recognise the strategic value of combining human and machine talent at all levels. Foundational digital skills include proficiency in applications, MS Office, web browsers, spreadsheets, and email (ICTC, 2016). In today's digital environment, these skills are indispensable across nearly all workplaces (Schwab, 2016). The terms "digital skills" and "competencies" describe an expanding range of abilities that require continuous improvement to meet the demands of an evolving economy (Meyers et al., 2014; Degryse, 2016).

Future workplaces are expected to emphasise flexibility while economic and labour market transformations continue to push workers toward enhancing their digital capabilities (Bianco, 2018). Investing in the development of digital skills will not only improve organisational efficiency but also create significant value for stakeholders (Gong & Ribiere, 2021).

This perspective is supported by key global reports such as the Future of Jobs reports by the World Economic Forum (2020, 2023) and the Flex+Strategy Group Report (2023). Additionally, the Pact for Skills Annual Report (2022) by the European Commission and the World Employment and Social Outlook (2022) provide valuable insights into these trends. A comparative analysis is drawn with findings from the Croatian labour market, particularly the Croatian Chamber of Commerce's survey on the need for additional knowledge and skills, conducted from February 22 to March 7, 2024.

This paper aims to explore the impact of workplace digitisation on job design and skill development, emphasising the integration of human and technological collaboration. It seeks to identify key skills and personal attributes required in a digital economy, assess attitudes toward education and skill investment among Croatian migrants, and highlight preferences for independent learning methods. Additionally, the paper aims to provide methodological insights into the factors driving human potential development in the context of digital transformation.

Methodology

The research, conducted in August 2023, utilised a model of survey questions distributed through Facebook groups. A comparative analysis was performed with the Croatian Chamber of Commerce's survey on demand for additional knowledge and skills in the labour market, conducted between February 22 and March 7, 2024. The study is further enriched by insights from the Future of Jobs Survey 2020 and the Job Skills of 2022 report.

The quantitative research was conducted using a survey distributed through social media platforms, targeting Facebook groups such as the Association Voice of Entrepreneurs, Association of Women for the Island (a group of women entrepreneurs), Croats in the U.A.E., Croats in New York, Croats in Germany and Beyond, Croats in Ireland, and Croats in Vienna, as well as LinkedIn. A total of 835 respondents participated in the survey. The focus group consisted of Croats residing in the country and Croatian emigrants living abroad.

Research results

Table 1 highlights the varied perspectives among different groups on who holds the primary responsibility for developing human resources.

Table 1

Perceived Responsibility for Human Resource Development

Respondents	The state (support and incentives should be given)	Education system (harmonise curricula with the requirements of the labour market)	Employer (should invest in his employees)	Everyone individually	Total
Association Voice of Entrepreneurs	9	74	28	156	267
LinkedIn	0	4	3	32	39
Association of Women for the Island	4	7	4	14	29
Croats in U.A.E.	0	2	2	9	13
Croats in New York'u	1	2	10	5	18
Croats in Germany	0	3	1	7	11
Croats in Ireland	7	20	54	35	116
Croats in Vienna	2	4	1	0	7
Total	23	116	103	258	500

Source: Author's analysis

A significant majority of respondents across groups believe that individual responsibility plays the largest role, particularly in the Association Voice of Entrepreneurs and Croats in Ireland groups. The education system is the second most frequently cited factor, reflecting a need for curricula that align with labour market demands. Employer responsibility also features prominently, though less than individual accountability. The role of the state is seen as least significant overall, suggesting that direct state involvement may not be widely expected or emphasised (Tecilazić et al., 2024).

The responses in Table 2 indicate that a large portion of participants primarily rely on free resources or company-sponsored training. Among those who invest personally, spending up to 500 euros is most common, particularly in the Association Voice of Entrepreneurs group. Higher investments (above 1,000 euros) are relatively rare but notable in specific groups, such as Croats in the U.A.E. This suggests a disparity in the willingness or ability to invest in skill development, with independent or company-funded learning being preferred over significant personal financial investment.

Table 2

Annual Investment in Digital and Soft Skill Development

Respondents	I only use free sources of information and tutorials; my company pays for everything.	Up to 500 euros (trips to conferences or professional meetings, purchase of professional literature and aids)	Up to 1 000 euros (attending courses and seminars, conferences, professional practice)	More than 1,000 euros (lifelong education, doctoral studies, attending courses and seminars, conferences, professional practice)	Total
Association Voice of Entrepreneurs	56	35	7	35	133
LinkedIn	9	12	5	10	36
Association of Women for the Island	11	6	3	2	22
Croats in the United Arab Emirates	2	2	1	5	10
Croats in Germany	7	1	0	3	11
Croats in Vienna	0	0	1	0	1
Total	85	56	17	55	213

Source: Author's analysis

Table 3 shows diverse preferences for education methods, with independent research and experimentation being the most popular choice overall, especially among the Association Voice of Entrepreneurs and Association of Women for the Island groups. Education organised by employers and higher education institutions is also valued but less so than informal and independent methods. The preference for informal education, particularly in smaller groups, may reflect a practical or cost-efficient approach to skill acquisition. These findings underline the importance of self-directed learning and flexibility in education strategies tailored to diverse group needs.

Table 3

Preferred Education Method

Respondents	Education organised by the employer	Education organised by higher education institutions	Informal education	Independent research and experimentation	Total
Association Voice of Entrepreneurs	7	7	1	12	27
LinkedIn	4	4	3	7	18
Association of Women for the Island	3	10	10	12	35
Croats in U.A.E.	4	1	0	2	7
Croats in Ireland	16	8	2	9	35
Total	34	30	16	42	122

Source: Author's analysis

The analysis reveals key trends in perceptions of responsibility for human resource development, investment in skill development, and preferred education methods. A clear emphasis is placed on individual responsibility and self-directed learning, reflecting a shift towards personal accountability and autonomy in career growth. While some respondents rely on free or employer-sponsored resources, significant personal financial investment in skill development remains limited. Preferences for independent research and informal education methods highlight the growing demand for flexible, accessible learning opportunities. These insights underscore the need for targeted strategies that balance individual initiative with institutional support to foster comprehensive skill development in a rapidly evolving labour market.

Contemporary trends in the labour market

The modern workforce is characterised by frequent job changes and personal development driven by workforce mobility. Access to labour market information is now simpler and more efficient, reducing the costs and stigmas traditionally associated with job transitions. With labour shortages and the growing acceptance of flexible work arrangements, employees in many industries feel empowered to pursue opportunities that offer better living and working conditions, believing they can secure employment anytime, anywhere (BBC, 2021).

High-quality work is essential for individual well-being, fostering motivated employees, productive organisations, a robust economy, and a fair society (see Table 4). Such work is characterised by fair recognition and rewards, a safe and dignified standard of living, opportunities for skill and career development, a supportive and stimulating environment, and a healthy balance between private and professional life. Furthermore, it ensures physical and mental health and is accessible to everyone.

In today's dynamic job market, desirable employees are expected to possess a range of skills, including analytical thinking, innovation, active learning, complex problem-solving, critical thinking, creativity, originality, initiative, leadership, and social influence. Technical skills such as technology use, monitoring, programming, and technology design are increasingly valued. Additionally, personal attributes like resilience, stress tolerance, flexibility, and emotional intelligence are essential to thriving in an ever-evolving workplace (Future of Jobs Survey, 2020).

Table 4 highlights the key factors influencing quality working conditions. Competitive wages and benefits address subjective perceptions of fairness, while stable contracts reduce uncertainty about job security. A balance between personal and professional life is facilitated by flexible working hours and manageable workloads. Effective job design empowers employees, fostering engagement and productivity, while a cohesive workplace environment, marked by social support and psychological safety, enhances trust and collaboration. Transparent communication channels and attention to employee welfare, including mental and physical health, further contribute to a supportive and motivating work environment.

Table 4

Factors of quality working conditions

The factor	Area of activity
Wages and benefits	Subjective attitudes regarding salary and benefits
Types of contracts	Uncertainty about job security
The balance between private and business	Excessive work, long commute, flexible working hours
Job design	Workload, work intensity, degree of autonomy, employee empowerment
Basis at work	Cohesion, social support, psychological safety and quality of people management
Communication channels	Two-way communication, openness of management
Also employee welfare	Positive or negative effects of work on physical and mental health

Source: CIPD (2023)

The shift toward flexible work arrangements has become a lasting change, as confirmed by the European Working Conditions Survey 2021 (Eurofound, 2021). Remote and hybrid work models are now firmly established globally, with 53% of

workers in the USA and UK and 28% in China engaging in remote work (Rogers & Karsten, 2022). This trend highlights the growing importance of workplace flexibility, which has emerged as a key factor influencing employee decisions to change jobs. Table 5 illustrates the primary reasons employees leave their current roles for new ones, with flexibility consistently identified as the most valued benefit.

Table 5

Reasons why employees quit or accepted a new job

Reasons why employees quit	**Reasons why employees accepted a new job**
Uncaring leaders	Workplace flexibility
Unsustainable work, performance expectations	Adequate total compensation package
Lack of career development and advancement potential	Sustainable work performance expectations
Lack of meaningful work	Career development and advancement potential
Lack of support for employee health and well-being	Meaningful work
Inadequate total compensation package	Reliable and supportive people at work
Lack of workplace flexibility	Support for employee health and well-being
Unreliable and unsupportive people at work	Caring leaders
Unsafe workplace environment	Geography ties and reasonable travel demands
Noninclusive, unwelcoming and disconnected community	Safe workplace environment
Inadequate resource accessibility	Inclusive, welcoming and connected community

Source: Author's analysis (De Smet et al., 2022).

In a study conducted by the Croatian Chamber of Commerce (HGK research, 2024) on the need for additional knowledge and skills in the labour market, 45% of citizens and 42% of employers highlighted a competitive salary as a key job benefit (Table 6). In comparison, 49% of citizens and 55% of employers emphasised the importance of achieving a good balance between private and professional life. Other benefits are detailed in Table 6. When it comes to reasons for changing jobs, dissatisfaction with salary was cited by 45% of respondents, followed by poor interpersonal relationships at work (29%), dissatisfaction with workload (25%), and lack of advancement opportunities (26%). Additionally, 11% of respondents mentioned the inability to utilise flexible working hours, and 8% cited the absence of remote work options as reasons for seeking new employment (WifiTalents, 2024).

Table 6

Advantages of the workplace according to citizens and employers in Croatia

	citizenship	employers
Good balance between business and private life	49 %	55 %
Good organisational culture	37 %	46 %
Remote forms of work	34 %	21 %
Learning opportunities	35 %	70%
Flexible working hours	24 %	21 %

Source: HGK research (2024)

Development of skills in accordance with the digitisation of workplaces

By 2025, automation is expected to replace 85 million jobs while creating 149 million roles centred on new technologies (Microsoft, 2020). Rapid advancements in job automation are predicted to impact approximately 40% of existing roles, with an estimated 23% job displacement over the next five years. Concurrently, over 75% of organisations will embrace digitisation, with 81% projected to do so by 2027 and 75% expected to engage in e-commerce and digital commerce (Future of Jobs Survey, 2020). Digital skills will become critical for workforce survival as the demand for new roles and skills outpaces those lost to automation, offering significant opportunities for job creation (Mihajlović et al., 2023).

The technological shift is anticipated to drive job growth in key sectors such as education, agriculture, and digital commerce. Education roles are forecasted to expand by 10%, adding approximately 3 million jobs, while agricultural specialists, including equipment operators, may see a 30% increase, contributing an additional 3 million jobs. E-commerce, digital transformation, and marketing strategy experts are expected to account for an additional 4 million positions. Conversely, traditional administrative roles, including cashiers, data entry clerks, bookkeepers, and secretarial positions, are projected to decline sharply (Future of Jobs Survey, 2023).

The digital revolution is further underscored by the sheer volume of data generated daily—500 million tweets, 294 billion emails, 4 million gigabytes of Facebook data, 65 billion WhatsApp messages, and 720,000 hours of new YouTube content (Hood, 2021). The global data volume, which was 33 zettabytes (ZB) in 2018, grew to 59ZB by 2020 and is expected to reach 175ZB by 2025, reflecting exponential growth in data creation and consumption. Demand for digital skills, particularly those related to data processing and database management, will continue to rise.

E-commerce has already surpassed $4.2 trillion globally, with over 2 billion consumers contributing to its growth. This expansion is accompanied by a decline in physical retail stores, with 80,000 closures anticipated by 2026 (Wahba, 2021). The leading internet and online service companies in 2022 include Amazon, Alibaba, Shopify, Airbnb, Uber, and others, emphasising the growing dominance of digital platforms (Statista, 2023).

The factors brought about by the digitisation of jobs accelerate the demand for specific skills in the labour market. Developing skills is essential for artificial intelligence, which cannot completely replace human intelligence, but it is important to build a certain degree of resistance to the future.

The digitisation of jobs has significantly accelerated the demand for specific skills in the labour market, emphasising the growing importance of upskilling and reskilling to meet evolving organisational needs. While artificial intelligence cannot fully replicate human intelligence, the development of complementary skills is crucial for fostering adaptability and resilience in an increasingly automated future (Pejic-Bach et al., 2020; Turulja et al., 2023).

The data in Table 7 illustrates the significant organisational changes. The digitalisation of work processes, including video conferencing, was adopted by 84% of organisations, while 83% introduced or expanded remote working opportunities, reflecting a substantial shift toward flexible and digital-first work environments. Automation of tasks was accelerated by 50% of organisations, highlighting the increasing reliance on technology to optimise operations. Efforts to reskill and upskill the workforce also gained momentum, with 42% accelerating the digitalisation of training initiatives and 35% implementing upskilling and reskilling programs more rapidly. Organisational restructuring was evident, as 34% of companies expedited ongoing transformations, while others adapted temporarily by reassigning workers (30%) or reducing workforce numbers either temporarily (28%) or permanently (13%). In contrast, only 5% temporarily increased their workforce, and 1% permanently expanded their staff, indicating a cautious approach to workforce growth amid uncertainty. Interestingly, 4% of organisations opted not to implement any specific measures, underscoring the variability in organisational responses to change (Mordor Intelligence, 2021).

Table 7

Changes in the organisation in 2020

Accelerate the digitalisation of work processes (use of digital tools, video conferencing)	**84 %**
Provide more opportunities to work remotely	83 %
Accelerate automation of tasks	50 %
Accelerate the digitalisation of upskilling/reskilling	42 %
Accelerate the implementation of upskilling/reskilling programmes	35 %
Accelerate ongoing organisational transformations	34 %
Temporarily reassign workers to different tasks	30 %
Temporarily reduce workforce	28 %
Permanently reduce workforce	13 %
Temporarily increase workforce	5 %
No specific measures implemented	4 %
Permanently increase workforce	1 %

Source: Future of Jobs Survey (2020)

Table 8 provides a longitudinal perspective on the evolution of human resources trends over the last decade, from 2011 to 2022. Talent management themes have progressed from addressing an upturn in talent needs and the challenges of an ageing workforce to focusing on talent mobility, access, and the post-generational workforce. The future of work has shifted dramatically, with earlier trends like contingent workforces and open talent economies giving way to the integration of AI, robotics, and automation, leading to concepts like "super jobs" and "superteams" that emphasise collaboration between humans and AI (Silviu, 2024; Chowdhury et al., 2023). Learning and career development have also transformed, moving from traditional ladder-based progression to lattice structures that encourage flexibility, employee-driven learning, and experiential career paths. The emphasis on "learning in the flow of life" in 2020 reflects the integration of continuous learning into daily work practices. Similarly, people analytics has evolved from basic workforce analytics to advanced HR practices that consider ethical implications and new strategies for measuring workforce effectiveness, adapting to the increasing complexity of managing human capital in a rapidly changing world (Lee & Ahn, 2020).

Table 8

Decades of changes in human resources trends 2011/2022.

	2011.	2013.	2015.	2017.	2019.	2020.
Talent	Talent in the Upturn	Ageing workforce	Workforce on demand	Talent acquisition	Accessing talent/talent mobility	The post-generational workforce
Future of work	Contingent workforce	Open talent economy	Simplification of Work	Workforce ecosystem (AI, robotics, automation)	From jobs to super jobs	Superteams: Putting AL in the group
Learning/careers	Ladder to lattice	War to develop talent	Learning and development: Into the spotlight	Learning: Employees take charge	From careers to experiences	Learning in the flow of life
People analytics	Workforce analytics	Thinking like an economist	HR and people analytics/people data everywhere	People analytics: Recalculating the route	How far is too far?	Measuring workforce strategies: New questions for better results

Source: Deloitte Human Capital Trends (2020)

Businesses have already embraced significant changes driven by technological integration and automation, leading to greater workplace flexibility, shifts in value chain dynamics, and the expansion of subcontractor networks to address prior supply chain challenges. Additionally, workforce opportunities have broadened as technology reshapes traditional roles and creates new ones. Key technologies expected to be widely adopted by 2025 include cloud computing, big data analytics, the Internet of Things (IoT), artificial intelligence (AI), text, image, and voice processing, e-commerce and digital trade, robotics, augmented and virtual reality, 3D and 4D printing and modelling, and quantum computing (Future of Jobs Survey, 2023). Table 9 highlights the most desirable jobs and those expected to decline in demand due to technological advancements and evolving skill requirements.

Table 9 highlights the shifting dynamics in the labour market, emphasising the growing demand for technology-driven roles while illustrating the decline in demand for more traditional and repetitive positions. On the rise are jobs heavily tied to digital transformation and technological advancements, such as data analysts and scientists, AI and machine learning specialists, and big data experts. These roles underscore the increasing reliance on advanced data analytics, automation, and digital strategies as critical drivers of business success. Other roles, such as information security analysts, software developers, and IoT specialists, reflect the need for expertise in maintaining and advancing the digital infrastructure that supports modern organisations.

In contrast, positions like data entry clerks, administrative secretaries, and factory workers face diminishing demand due to automation and the adoption of digital processes. Similarly, traditional roles in accounting, customer service, and materials management are increasingly being replaced or supplemented by automated systems, leading to a reduced need for human involvement. Even managerial roles in business services and operations are experiencing a decline as companies streamline processes and restructure traditional hierarchies to adapt to the evolving workplace.

Table 9

Top 10 jobs with increased and decreased demand until 2025.

Increasing demand	Decreasing demand
Data Analysts and Scientists	Data Entry Clerks
AI and Machine Learning Specialists	Administrative and Executive Secretaries
Big Data Specialists	Accountants and Auditors
Digital Marketing and Strategy Specialists	Assembly and Factory Workers
Process Automation Specialists	Business Services and Administration Managers
Digital Transformation Specialists	Client Information and Customer Service Workers
Information Security Analysts	General and Operations Managers
Software and Applications Developers	Mechanics and Machinery Repairers
Internet of Things Specialists	Material-Recording and Stock-Keeping Clerks
Project Managers	Financial Analysts

Source: Future of Jobs Survey (2020)

Table 10 outlines the key digital skills needed across various sectors in Croatia, reflecting the country's efforts to adapt to technological advancements and global sustainability trends. In finance, skills such as programming, data analysis, and IT system development are essential for driving digital transformation. The construction sector emphasises digitisation, eco-sustainable building practices, and the use of robotics and advanced machinery. Similarly, the metalworking and food industries focus on automation, robotics, and sustainable practices to enhance efficiency and production. Trade relies heavily on digital work processes, virtual sales, and a blend of technical and digital knowledge to remain competitive. At the same time, the tourism and hospitality sector prioritises digital marketing, social media, and innovative digital solutions to enhance customer experiences. In the energy sector, green technologies,

automation engineering, and IT skills are critical for promoting renewable energy and sustainability.

Table 10

Digital skills relevant for sectors in Croatia

Sector	Digital skills
Finance	programming, data analysts, digital experts, programmers, IT system development digitisation of business, construction of eco-sustainable buildings, work on machines, robotisation
Construction	digitisation of business, construction of eco-sustainable buildings, work on machines, robotisation
Metalworking Industry	automation, sustainable development, programming and management of automatic machines, robotics
Food Industry	automation of production, robotisation of processes, organic production, work on modern lines
Trade	international trade, virtual sales, digitisation of work processes, unification of technical and digital knowledge
Tourism and Hospitality	digital marketing, social networks, digital solutions for tourist products, robotisation in the hotel industry
Electrical Industry/Energy	automation engineers, solar panel installers, IT, green technologies, green energy

Source: HGK research (2024)

Investing in the development of human resources skills

The research estimates that approximately 40% of workers will need retraining in the near future. According to the Future of Jobs survey (2023), 39% of training will be conducted internally within organisations, supplemented by online learning platforms (16%) and external consultants (11%). Training efforts will primarily focus on developing technological skills and design expertise. In contrast, soft skills are often underrepresented, except in targeted courses addressing leadership, managerial skills, strategic planning, and business communication (Doll, 2022).

Key stakeholders in human resource development include governments, educational institutions, and companies. Governments must identify and train individuals with skills that are future-ready to drive workforce preparedness and economic growth. Businesses need to prioritise transformation, talent retention, and employee motivation. Higher education institutions play a vital role in equipping students with practical, business-oriented skills to ensure successful career outcomes. Skills-based learning, which tailors learning experiences to individual needs, is increasingly favoured as it provides the specific knowledge required for career advancement or new job roles. Open learning models and guided learning modules are the most popular approaches.

Soft skills, or human skills, are essential to organisational success. While not technical, they are equally valuable and often as challenging to master as hard skills. They

enhance the effective and ethical use of digital and technical skills, creating a complementary dynamic. Soft skills include creativity, critical thinking, information interpretation, decision-making, and communication, all of which are crucial for navigating the complexities of modern work environments. Investing in both digital and soft skills ensures a well-rounded, adaptable workforce equipped for the demands of the future.

Table 11 presents a global perspective, emphasising the increasing importance of soft skills such as communication, change management, decision-making, and problem-solving, alongside digital skills like user experience design, cloud infrastructure, and supply chain systems. This combination reflects the need for workers who can navigate technological advancements while effectively leading, adapting, and collaborating within their organisations.

Table 11

List of the most in-demand digital and soft skills in 2022.

Soft Skills	Digital Skills
Communication	Product Design
Change Management	Potting Data
Professional Development	User Experience Design
Storytelling	Statistical Visualisation
Planning	Security Strategy
Influencing	Cloud Infrastructure
Decision Making	Supply Chain Systems
Problem-Solving	Social Media
People Development	Operations Management
Human Resources	Business Process Management

Source: Rogers & Karsten (2022)

Table 12 focuses on Croatia, offering a detailed comparison of the skills valued by citizens and employers. While soft skills such as problem-solving, adaptability, communication, and critical thinking are universally sought after, employers place additional emphasis on teamwork, reliability, and organisation. In terms of digital skills, citizens prioritise basic technical competencies like proficiency in Office programs and knowledge of foreign languages. In contrast, employers demand more specialised skills such as database management, project management, and expertise in specialised software (e.g., Adobe, AutoCAD, ERP systems). The inclusion of practical requirements, such as a driver's license, further reflects specific regional labour market needs.

Table 12

List of the most sought-after digital and soft skills in 2022 in Croatia

Soft Skills		Digital Skills	
Citizen	**Employers**	**Citizen**	**Employers**
Solving problems	Reliability	Driver's license	Knowledge of at least one foreign language

Organisation	Teamwork	Using the Office program package (Word, Excel, PowerPoint, etc.)	Driver's license
Communication skills	Willingness to learn	Knowledge of at least one foreign language	Using the Office program package (Word, Excel, PowerPoint)
Creativity	Solving problems	Technical skills	Technical skills
Willingness to learn	Adaptability	Management skills	Work on working machines.
Teamwork	Communication skills	Analytical skills	Project management
Critical thinking	Organisation	Using other specialised programs (Adobe, AutoCAD, AVI programs, ERP, etc.)	Analytical skills
Reliability	Critical thinking	Database management	Using other specialised programs (Adobe, AutoCAD, AVI programs, ERP)
Adaptability	Empathy	Project management	Management skills

Source: HGK research (2024)

During the 1980s and 1990s, employer investments in employee training were substantial, driven by the transformative impact of personal computers and the Internet on the workplace. However, this trend slowed at the turn of the century as the global recession led to a decline in employer spending on workforce development. Table 13 illustrates the year-by-year investment in human resource skill development, revealing a clear downward trend in training expenditures over time.

Table 13

Investment in the development of human resources skills

1996.		**2001.**		**2004.**		**2008.**	
Employer paid training	Job training (paid by the organisation)	Employer paid training	Job training (paid by the organisation)	Employer paid training	Job training (paid by the organisation)	Employer paid training	Job training (paid by the organisation)
19.4 %	13.1 %	16.7 %	11.7 %	12.4 %	8.6 %	11.2 %	8.4 %

Source: Deloitte Human Capital Trends (2020)

Microsoft has introduced initiatives aimed at fostering new digital skills through three key areas (Microsoft, 2020): leveraging data to identify high-demand jobs and the skills required for them, providing free access to educational content to help individuals acquire these skills, and offering affordable certifications and tools to support job seekers in their skill development journey.

Similarly, the Pact for Skills, launched in 2020 as a flagship action under the EU Skills Agenda, addresses the future skill needs of the European workforce. Over 1,000 organisations across the EU have joined this initiative, focusing on strategic investments in training and retraining programs to equip the working population with the skills necessary for evolving labour market demands. Table 14 outlines the significant progress and investment milestones achieved under this initiative.

Nearly two million individuals (1,999,277) participated in upskilling or reskilling activities, reflecting significant progress in addressing workforce skill gaps. A total of 12,275 training programs were developed, with an additional 3,250 programs updated to align with evolving skill demands. The initiative reached an impressive audience of over 18.7 million people through communication and awareness campaigns, emphasising its broad outreach and engagement efforts. Moreover, 21,577 stakeholders were involved in cooperative partnerships or networks, showcasing the extensive collaboration among organisations to drive skill development. The financial investment of nearly €160 million underscores the EU's commitment to equipping its workforce with the skills required to navigate technological advancements and labour market shifts.

Table 14

Research on training and retraining in 2022.

Key Performance indicator	Total value
People who took part in upskilling or reskilling activities	1,999,277
Training programmes developed	12,275
Training programmes updated	3,250
People are reached by communication activities or awareness raising on upskilling and reskilling	18,774,753
Stakeholders reached in cooperation partnership or networks	21,577
Financial investment into upskilling/reskilling	159,955,721

Source: Pact for Skills annual report (2022)

As technology reshapes work, the focus must shift toward equipping individuals with the right mix of digital and soft skills to remain competitive. Governments, businesses, and educational institutions have a shared responsibility to create opportunities for lifelong learning and skill development. By fostering collaboration and investing in training, we can ensure that workers are not only prepared for the future but also thrive in it.

Conclusion

The digitisation of workplaces and the growing collaboration between humans and machines have reshaped the labour market, created new realities and increased demand for specific skills and talents. This transformation presents an opportunity to redefine the economic value of work by enhancing productivity. As societal perceptions and attitudes evolve, diversification in human resources has emerged as a response to digitalisation. The key to this process is planning adaptation and accepting lifelong learning, with a growing emphasis on digital and soft skills.

This research, conducted among Croats both domestically and abroad, reveals that respondents overwhelmingly view individual responsibility as central to human potential development. However, they are generally unwilling to invest in the development of their own digital and soft skills, instead favouring independent research and experimentation as the most desirable form of education. This study's practical implications lie in its reflection on the current state of the Croatian labour market, providing insights and guidelines on emerging trends.

Limitations of the study include the accessibility of target and focus groups. The research incorporated responses from individuals in Croatia's entrepreneurial sector as well as Croatian emigrants, offering a comprehensive perspective on local labour market dynamics. These findings are also compared with data from research conducted by the Croatian Chamber of Commerce on similar topics. Future research will aim to identify additional factors that can further support the development of employee skills, contributing to the ongoing evolution of workforce capabilities.

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