Preparing Future Project Managers for the Economy 4.0 Workplace: An Erasmus+ and IPMA ICB 4.0 Perspective

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Abstract

Economy 4.0 and the growing projectification of the working environment are raising a key question for universities: are their graduates truly prepared for the demands of a project-based labour market? This paper investigates whether — and to what extent — participation in the Erasmus+ mobility programme translates into the development of competences required by the IPMA Individual Competence Baseline 4.0 (ICB 4.0) standard. The analysis is grounded in a comparison of Erasmus+ learning outcomes with the ICB 4.0 competence matrix across three domains: Perspectives, People and Practice. The findings show that Erasmus+ has the strongest impact on competences in the People domain — including communication, teamwork, leadership and conflict resolution — and in the Practice domain, where respondents highlighted analytical thinking and risk management. The results suggest that well-designed mobility experience can genuinely prepare future project managers for the demands of an Economy 4.0 workplace.

Keywords

Project Management, Competences, Erasmus+ Mobility, IPMA ICB 4.0 Framework, Economy 4.0

Introduction

By 2030, almost 40% of employees' core skills are expected to change significantly, underscoring the need for universities to equip graduates with competences suited to a project-based economy [World Economic Forum, 2025]. Digital transformation and the rise of Economy 4.0 have accelerated what researchers describe as mass projectification — the widespread adoption of project-based work across professional sectors [Aguilar Velasco and Wald, 2022; Małecka-Dobrogowska, 2025; Schoper and Ingason, 2019; Tornjanski, 2023]. Against this backdrop, a key question emerges: do programmes designed to complement formal higher education — Erasmus+ in particular — effectively support the development of project-related competences such as communication, teamwork, risk management, and creativity, and if so, to what extent?

The main objective of this study is to compare project management competences developed by students through Erasmus+ international mobility with the standards defined by the IPMA Individual Competence Baseline (ICB 4.0)[IPMA, 2015]. The study draws on three key reference points: the World Economic Forum's forecasts for workforce skills up to 2030 (World Economic Forum, 2025), the Erasmus+ Competence Matrix [di Marzo et al., 2025], and the objectives of the PM STUDENT programme — a project management certification scheme aligned with the IPMA ICB 4.0 framework, implemented at Polish higher education institutions. This article addresses two research questions:

1. Do the learning outcomes of the Erasmus+ programme align with the project management competences defined in the IPMA Individual Competence Baseline 4.0 (ICB 4.0), across the Perspectives, People and Practice domains?
2. To what extent does Erasmus+ mobility experience contribute to the development of knowledge, skills and competences required of future project managers, as defined by the IPMA ICB 4.0 framework?

The study employed a qualitative and quantitative approach, comprising a review of the relevant literature, a case study of the competences of the Erasmus+ programme and their outcomes, and a comparison of the competences identified within the Erasmus Careers Framework with the IPMA ICB 4.0 matrix. The study also includes the results of a pilot survey of Erasmus+ mobility graduates, with the aim of conducting a comparative analysis of the educational experiences gained during their Erasmus studies. This research approach was designed to capture both the educational and practical dimensions of the Erasmus+ programme, as well as its potential in preparing students for the challenges of the project-based labour market of the 4.0 Economy and IPMA certification (PM STUDENT).

1. Literature review

Essentially, the project is a multi-stage undertaking involving a variety of resources - from financial and material to human - which together form interconnected activities aimed at achieving a clearly defined objective [Al-Nimer et al., 2026]. Effective project management requires the acquisition of a wide range of knowledge, competences and skills that will enable effective management and the achievement of project objectives; learning and the development of competences in this area should also extend beyond the scope of university education and into practical experience [Marnewick, 2023]. The project team comprises individuals with diverse backgrounds and specialisms who, through complementary collaboration and effective communication, are able to work together to achieve the project's objectives [Abejide, 2024, pp. 12-18]. Joint problem-solving, holding open discussions, collaborating with staff outside the project, and maintaining team cohesion and unity present numerous challenges in a constantly changing implementation environment. At the organisational level, the success of the project requires cooperation between different departments of the institution and the active participation of experts in the fields of science, teaching and finance, who are jointly responsible for the content, methodology, evaluation and coordination of activities [Han et al., 2025, pp. 6-9].

The challenges of 4.0 Economy, the rapid adoption of digital tools, remote working solutions and advanced technologies - such as machine learning and generative artificial intelligence - are shaping the key competences of project managers in an environment of rapid technological change. On the one hand, the COVID-19 pandemic, combined with rapid technological development, has led to major changes in the world of work [Salcedo-López and Cuevas-López, 2021], on the other hand, uncertainty regarding the long-term impact of generative AI - from the perspective of project management and project managers - necessitates a redefinition of skills in order to collaborate more effectively with digital systems and adapt to project-based work environments [Mariani and Mancini, 2025]. In the face of these challenges, forecasts suggest that by 2030, 39% of workers' core skills will have changed, highlighting the growing importance of lifelong learning, upskilling and reskilling programmes that help companies foresee future skills requirements and manage their human resources [World Economic Forum, 2025, pp. 12-18]. This phenomenon is observed in almost all sectors of the economy [OECD, 2025, pp. 45-52]. These competences can be divided into three areas: cognitive, self-efficacy and interpersonal. Today's work environment in the 4.0 Economy demands a balanced development of these competences [De La Torre et al., 2022; World Economic Forum, 2025, pp. 35-36]. Analytical thinking is considered the most important skill - deemed crucial by

70% of companies. Mental resilience, flexibility, adaptability, leadership, social influence, creativity, motivation and self-awareness are also highly valued (Figure 1).

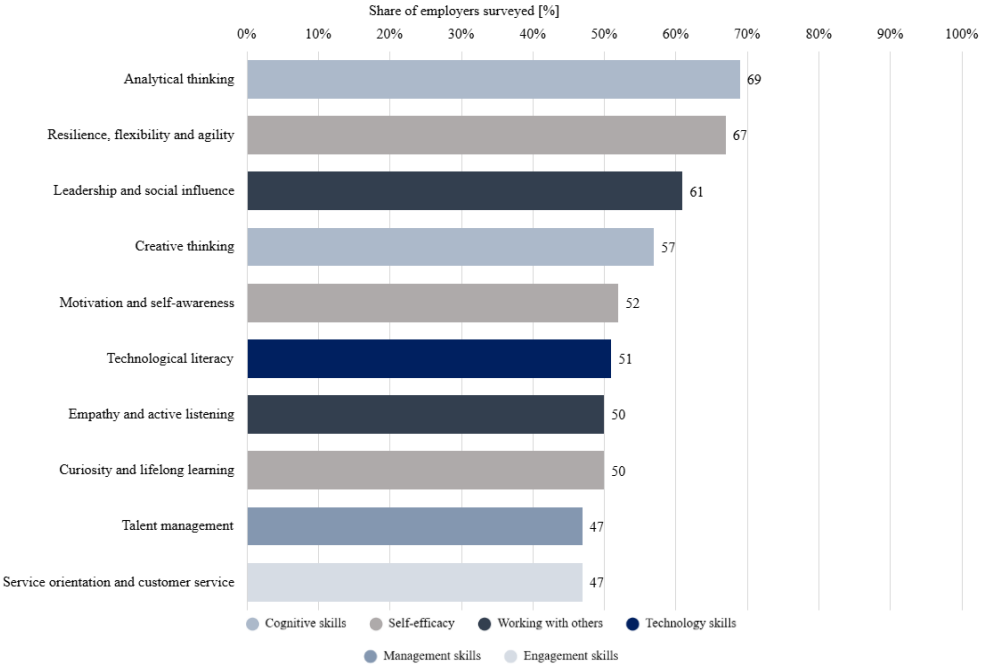


Fig. 1. Main competences and skills in 2025

Source: [World Economic Forum, 2025, p. 35].

The above observation is confirmed by numerous reports and articles on the 'future of work', which indicate that technological skills are becoming increasingly important, particularly in the fields of AI and data analysis, as well as networking, cybersecurity and general technological proficiency [Kraus et al., 2023]. At the same time, the importance of social and emotional attitudes such as resilience, flexibility, intellectual curiosity and lifelong learning is growing, and the ten competencies gaining the most prominence also include leadership, social influence, talent management, analytical thinking and environmental responsibility [World Economic Forum, 2025, pp. 38-40]. These skills play a key role in team management, change management and adapting to sustainable and green transformation, including in the context of the cross-functional competences required in the field of modern project management within the project-based labour market of the 4.0 Economy.

2. Research methodology

International competency standards, such as IPMA ICB 4.0, provide a framework for knowledge and practice in the field of project management. In the context of IPMA ICB (Individual Competence Baseline 4.0), competences are not merely a set of theoretical principles, but a practical set of elements necessary for effective operation within project, programme and portfolio environments, analysed from the perspective of knowledge as a collection of information and experiences that an individual acquires and understands. An example might be knowledge of the principles of creating a Gantt chart. They also relate to skills, i.e. technical abilities enabling the performance of specific tasks, such as independently creating a Gantt chart. The third area comprises abilities understood as practical competences, enabling the effective application of knowledge and skills in specific situations, e.g. when planning and managing a project schedule [IPMA, 2015]. In the international IPMA ICB 4.0 standard, project management competences are organised into three interrelated areas, which highlight both the strategic context of activities and the role of people and technical aspects of project management.

The first of them - *Perspectives* - emphasises the importance of situating the project within a broad organisational and social context. Competences in this area include the ability to align the project's objectives with the institution's strategy, ensure compliance with regulations and standards, and take sustainability considerations into account. It is also important to understand internal and external relationships and the impact of cultural and social factors on the course of project activities [IPMA, 2015, pp. 36-65]. Research conducted in Poland suggests that contextual competences are the most difficult for students to develop, due to their limited practical experience in project work [Rzempała and Wiśniewski, 2019, pp. 58-67].

The second area - *People* - focuses on personal and interpersonal skills, which determine the quality of teamwork. It encompasses leadership, communication, the ability to work in a team, a constructive approach to conflict and negotiation, as well as creativity, innovation, and ethics and values. The importance of self-development and reflection is also emphasised here, as these enable the conscious improvement of one's own skills and adaptation to a changing project environment. The results of the IPMA-Student (PM STUDENT) certification conducted at Polish universities show that it is precisely behavioral competences (such as commitment, motivation and assertiveness) that are best developed among students [Rzempała and Wiśniewski, 2019, pp. 58-67]. Similar conclusions emerge from international research, which shows that students' active participation in projects develops leadership skills, conflict management and a results-oriented approach, whilst also boosting motivation through a shared sense of purpose [Markasović et al., 2025, pp. 447-48].

The third area - *Practice* - focuses on the technical competences that form the foundation of effective project management. These include managing scope, time, costs, risk and quality, as well as organising resources and engaging stakeholders. These competences emphasise the importance of planning, monitoring and controlling activities, as well as the practical application of tools and methods that support the achievement of objectives in an organised, predictable and resilient manner. Analysis of IPMA-Student (PM Student) exams indicates that students perform best in problem-solving and communication, whilst their performance is weakest in risk and quality [Rzempała and Wiśniewski, 2019, p. 63]. Meanwhile, research carried out in Croatia shows that participation in real-world projects funded by the EU enables students to develop as much as 89.48% of key technical competences, including risk, cost and quality management [IPMA, 2015, pp. 66-75; Markasović et al., 2025, pp. 450-51].

Effective project management requires a simultaneous focus on strategic vision, interpersonal skills and technical expertise. It is only by integrating these elements that sustainable results can be achieved, ensuring that the project becomes an integral part of the organisation's development and that of its environment. The interrelationships between these components are crucial: competence presupposes the possession of relevant knowledge, whilst capability requires not only knowledge and skills, but also their appropriate application in the right context and at the right time [IPMA, 2015, pp. 13-20].

Experience is a factor that significantly supports the development of competences; even though it does not directly define competences, it forms an indispensable foundation for them. Without practical experience, it is impossible to effectively demonstrate or improve competences. It is, among other things, through participation in exchange programmes such as Erasmus+ that future project managers prepare themselves to fulfil professional tasks and roles by developing their competence potential. The Erasmus programme, which is one of the European Union's key tools in tackling social issues such as high youth unemployment, marginalisation and low levels of qualifications [Poszytek, 2021, p. 9]. Virtual exchanges are also often part of the programme, where, under the supervision of teachers, pupils work together in international teams. This promotes the exchange of knowledge and the development of soft skills, which include communication, interpersonal, digital, social and intercultural skills. Virtual exchanges have a positive impact on the educational process, strengthening cooperation, intercultural communication, motivation and student satisfaction. The online environment provides favourable conditions for implementing innovative teaching methods, such as gamification, project-based learning, teamwork, micro- and nano-learning, and other innovative educational approaches. These

are the key competences required in today's labour market [Crnko and Pavelić, 2024, p. 101].

Analyses carried out as part of the Erasmus Careers project show that programme participants most often develop skills such as self-reliance, independence, interpersonal and language skills, and flexibility, whilst also enhancing their appeal in the labour market. This is consistent with earlier research indicating that key skills valued and considered during recruitment, including in projects - such as adaptability, communication, teamwork, creativity and self-belief - are closely linked to the experiences gained during an international exchange [Dias et al., 2025, p. 6; Dec and Szydło, 2023].

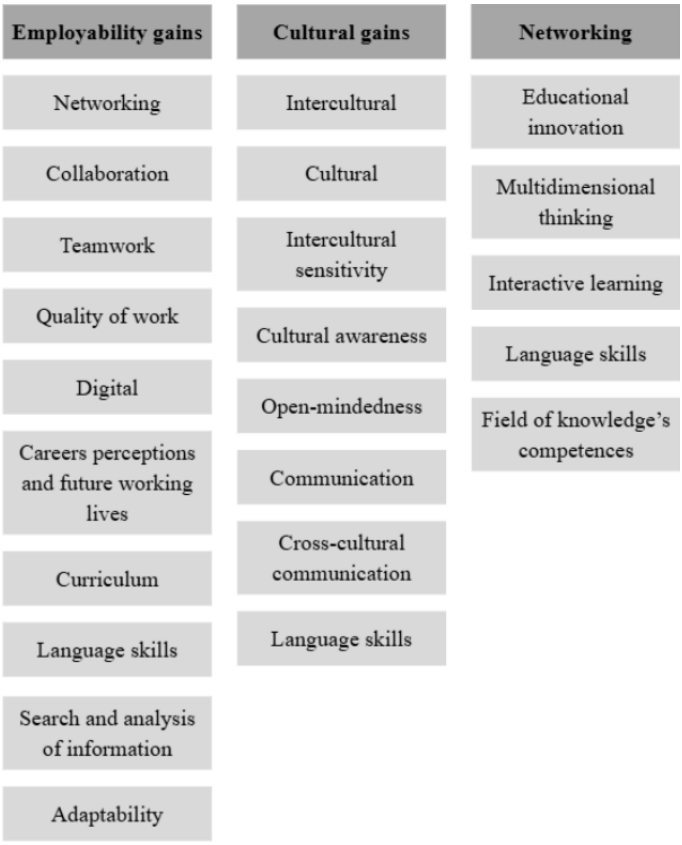


Fig. 2. Classification of key competences acquired by students whilst studying or working abroad

Source: [di Marzo et al., 2025, p. 6].

International mobility under the Erasmus+ programme fosters the development of five key areas of competence: intercultural communication, social responsibility, personal development and resilience, professional skills, and the ability to adapt to new trends [di Marzo et al., 2025, pp. 6-8]. These areas can be aligned with the three competency pillars of IPMA ICB 4.0 (*Perspectives*, *People*, *Practice*), which allows for a comprehensive coverage of competences. Competences related to intercultural communication and social responsibility correspond to the *Perspectives* pillar, which emphasises the strategic and social context of projects. Personal development, resilience, teamwork and leadership fall within the *People* area, which focuses on interpersonal and behavioural competences. In turn, professional skills and adaptation to new trends, including digitalisation and innovation, align with the *Practice* pillar, which covers the technical aspects of project management [IPMA, 2015, pp. 36-65]. A comparison of the two approaches shows that Erasmus+ not only supports the development of soft skills but also prepares participants to take on project roles in line with international management standards.

Tab. 1. A comparison of project-related competences with the skills of Erasmus+ Mobility participants

IPMA ICB 4.0 project competences	Skills acquired through Erasmus+ mobility	IPMA area
Analytical thinking	Problem-solving, planning, risk analysis	Practice
Creativity	Creativity, innovation, approach to conflict	People
Leadership	Leadership, team motivation, results-oriented approach	People
Social impact	Communication, negotiation, stakeholder engagement	People
Mental resilience, flexibility	Team resilience, adapting to a changing environment	People
Adaptability	Adapting flexibly to change, risk management	Practice
Self-awareness, motivation	Self-development, reflection, ethics and values	People
Talent management	Resource management, teamwork	Practice/People
Environmental responsibility	Incorporating sustainability considerations into projects	Perspectives
Digital skills/AI/data analysis	Planning, monitoring, and the use of digital tools	Practice

Source: Own study based on [di Marzo et al., 2025; Dałkowski et al., 2015].

The comparison presented in Table 1. highlights the strongest links between the competences developed under the Erasmus+ programme and the IPMA ICB 4.0 standard in the *People* domain, which covers interpersonal and behavioural competences. International mobility most effectively supports the development of skills such as communication, teamwork, leadership, creativity and conflict resolution. Erasmus+ creates the conditions for the intensive development of social and emotional attitudes, which, in project practice, determine the quality of cooperation and the effectiveness of teams.

The *Practice* area, which relates to technical competences, manifests itself in skills such as analytical thinking, the ability to adapt to changing conditions, and risk management. Students on mobility programmes do not always acquire formal project tools; however, the experience of working in new environments and the need to cope with uncertainty develops practical skills which, in later stages of development, can be supplemented with the methodology and tools required for project management.

Meanwhile, the *Perspectives* section, covering the strategic context of project activities, is linked to competences related to environmental responsibility and sustainable development. Erasmus+ promotes cultural, social and environmental awareness, enabling participants to better understand the impact of projects on their surroundings and the importance of their compliance with European values and regulations.

3. Research findings

A pilot survey of 52 Erasmus+ programme graduates from 2020-2025 was conducted between January and February 2026. Purposive sampling (Erasmus+ programme graduates from 2020-2025) was carried out using the snowball technique, drawing on available databases and forums for Erasmus+ graduates. The majority (57,7%) were women, and in terms of age, the largest group consisted of respondents aged 22-25. The respondents were students or those combining study with work, representing a variety of fields, including: IT, logistics, education, medicine, finance, engineering, architecture, marketing, manufacturing and services. The vast majority of respondents were Erasmus+ participants from Poland (57,7%). The second-largest group were participants from Turkey (9,6%), followed by students from France and Italy (5,8% each). Other countries, such as Germany, the Czech Republic, Greece, Portugal, Romania, Estonia, the Netherlands and Brazil, accounted for over 25% of the survey respondents (26,9%).

As part of the survey, participants were asked to indicate the country in which they had undertaken a mobility placement under the Erasmus+ programme. The responses reveal a geographical diversity in educational experiences. The most frequently mentioned country was Portugal, which accounted for the largest share of responses. Italy came second, followed by Spain, Greece, Slovenia, England, Ireland, the Netherlands and Hungary. Some respondents indicated more than one country, which indicates that they had taken advantage of the Erasmus+ student exchange programme on several occasions. Such experiences foster the development of intercultural competences, flexibility and adaptability, which - as noted earlier - are key in the context of the project-based competences under study.

The geographical diversity of mobility destinations indicates that the Erasmus+ programme enables students not only to acquire academic knowledge, but also to gain cultural and social experiences in a variety of national contexts. It is precisely these environmental differences that constitute a key factor in fostering the development of project-related competences, particularly in the *Perspectives* and *People* area, according to the IPMA ICB 4.0 model.

As part of the study, participants self-assessed selected competences before and after completing their Erasmus+ mobility. The assessment covered nine areas of competence, which were then mapped to the three pillars of IPMA ICB 4.0: *People, Practice* and *Perspectives*. The results clearly indicate an increase in the level of all competences following participation in the Erasmus+ programme, confirming its significant impact on the development of both soft and technical skills. Of the nine competences analysed, five were assigned to the *People* area, three to *Practice*, and one to *Perspectives*, reflecting the structure of the competences developed during the mobility. The survey results indicate that the competences developed during Erasmus+ mobility correspond most closely to the *People* area in the IPMA ICB 4.0 model.

Tab. 2. Project management skills in the experiences of Erasmus+ Programme Graduates - IPMA competency area: People

No	Question	Average value before the Erasmus exchange	Average value after the Erasmus exchange	IPMA area
2	How would You rate Your creativity skills (creativity, innovation, approach to conflicts) ... Erasmus+ exchange?	3,13	3,92	People
3	How would You rate Your leadership skills (leadership, team motivation, results orientation) ... Erasmus+ exchange?	2,98	3,75	People

No	Question	Average value before the Erasmus exchange	Average value after the Erasmus exchange	IPMA area
4	How would You rate Your social influence skills (communication, negotiation, stakeholder engagement) ... Erasmus+ exchange?	2,92	4,08	People
5	How would You rate Your mental resilience and flexibility (resilience, adaptation to a changing environment) ... Erasmus+ exchange?	2,90	4,02	People
7	How would You rate Your self-awareness and motivation skills (self-development, reflection, ethics, and values) ... Erasmus+ exchange?	3,27	3,87	People

Source: Own study based on the survey results.

Respondents rated the development of communication skills, teamwork and the ability to adapt to new situations most highly. Competences in the *Practice* area developed to a lesser extent, which is consistent with previous analyses indicating that international mobility primarily fosters the development of soft skills.

Tab. 3. Project management skills in the experiences of Erasmus+ Programme Graduates - IPMA competency area: Practice

No	Question	Average value before the Erasmus exchange	Average value after the Erasmus exchange	IPMA area
1	How would You rate Your analytical thinking skills (problem solving, planning, risk analysis) ... Erasmus+ exchange?	3,33	4,02	Practice
6	How would You rate Your adaptability skills (flexible response to change, risk management) ... Erasmus+ exchange?	3,00	3,98	Practice
9	How would You rate Your digital/AI/data analysis skills (planning, monitoring, use of digital tools) ... Erasmus+ exchange?	3,02	3,67	Practice

Source: Own study based on the survey results.

The lowest-rated competence following mobility was environmental responsibility (3,50), which falls under the *Perspectives* domain; this is consistent with earlier observations that strategic competences develop most slowly. The *Perspectives* area was mainly represented by an increase in cultural and social awareness.

Tab. 4. Project management skills in the experiences of Erasmus+ Programme Graduates - IPMA competency area: Perspectives

No	Question	Average value before the Erasmus exchange	Average value after the Erasmus exchange	IPMA area
8	How would You rate Your competence in environmental responsibility (taking sustainability aspects into account in projects) ... Erasmus+ exchange?	3,21	3,50	Perspectives

Source: Own study based on the survey results.

An analysis of the average scores before and after the Erasmus+ mobility indicates an increase, as reported by respondents, across all nine competence areas. Average self-assessment scores rose from 0,48 to 1,16 points, with the greatest increase observed in the area of social and adaptive competences.

The highest-rated competence developed during mobility was social influence (4,08), encompassing communication, negotiation and stakeholder engagement. Analytical thinking (4,02), mental resilience and flexibility (4,02) and creativity (4,02) were also highly rated, confirming the strong influence of the international environment on the development of interpersonal and cognitive skills.

Leadership (3,75) and digital and analytical skills (3,67) also received relatively lower scores, which may be due to limited access to formal project tools during mobility programmes.

Respondents rated that participation in Erasmus+ had improved their readiness for future employment, particularly in terms of adaptability to change (3,98), creativity (4,02) and analytical thinking (4,02). These results are consistent with the Future of Jobs 2025 forecasts, according to which soft, cognitive and adaptive skills will be key in the labour market by 2030. International mobility can be analysed as a significant factor supporting the development of future-oriented skills, particularly in the *People* and *Practice* domains according to the IPMA ICB 4.0 model.

The greatest increase was observed in the area of interpersonal and behavioural competences (*People*). This applies specifically to skills such as social influence (an increase from 2,92 to 4,08), mental resilience and flexibility (from 2,90 to 4,02) and

leadership (from 2,98 to 3,75). These results confirm that international mobility creates conditions conducive to the intensive development of social, communication and adaptability skills, which are key in project work and in a multicultural environment.

In the *Practice* area, which covers technical and operational skills, a marked improvement was also observed. Analytical thinking rose from 3,33 to 4,02, adaptability from 3,00 to 3,98 and digital and analytical skills from 3,02 to 3,67. This indicates that mobility participants are developing not only soft skills but also practical abilities related to planning, analysis and the use of digital tools - competences that are particularly important in the 4.0 Economy.

The smallest increase was recorded in the *Perspectives* area, represented by environmental responsibility (from 3,21 to 3,50).

Analysis of the survey data clearly indicates that the Erasmus+ programme supports the development of key competences for project management in 4.0 Economy. The greatest increase relates to interpersonal, adaptability and communication competences, which form the foundation of project work in a multicultural environment. International mobility also fosters the development of technical competences, including digital and analytical skills, albeit to a lesser extent than soft skills.

Real support in the recruitment process, tailored to the needs of today's employers, lies in the ability to work in international teams, adapt flexibly to change and solve problems effectively. Erasmus+ plays not only an educational role, but also a practical one, preparing participants for the demands of the labour market in 4.0 Economy. The results confirm that Erasmus+ not only broadens cultural horizons but can also serve as an important platform for supporting future project management professionals and enabling them to fulfil project roles in line with the challenges of the project-based market.

4. Discussion of the results

The results of a pilot study conducted among graduates of the Erasmus+ programme confirm the findings of Croce and Ghignoni, which indicate that participation in the Erasmus+ programme facilitates a smoother transition from education to employment, although the intensity and nature of mobility influence the extent of these effects. They confirm that experience gained abroad can improve graduates' chances of entering the labour market, particularly through the development of soft and adaptive skills [Croce and Ghignoni, 2024, p. 733].

Although the Erasmus+ programme is widely regarded as a tool for supporting students' personal and professional development, research also highlights a number of challenges faced by participants in mobility schemes. Students often encounter

cultural difficulties, language barriers, financial constraints and complex administrative procedures, which can complicate the entire experience [Aksay Aksezer et al., 2021, pp. 63-67]. The paradox of the programme lies in the fact that it is precisely these obstacles that provide an opportunity to develop key competences. Participants learn to operate under pressure and in conditions of uncertainty, which strengthens their psychological resilience, flexibility and ability to adapt. As a result, the process of acquiring project-related skills, such as risk management, communication and teamwork, takes place in an environment that is demanding yet conducive to developing the skills valued in today's job market.

The literature on projects, including Erasmus+, increasingly emphasises the importance of sustainability plans, which are designed to ensure that results are maintained after funding has ended; in this context, developing a strategy for the project's intellectual results, taking into account both internal and contextual factors, is crucial for their continued use and impact on the wider community [Vo, 2021, pp. 18-22]. In this context, the development of competences in the *Perspectives* area of the standard takes on particular significance, as it requires project participants to think in terms of long-term outcomes, alignment with the organisation's strategy, and the social and environmental responsibility outlined in the IPMA project management standard [Dałkowski et al., 2015, pp. 36-65]. Erasmus+ is therefore becoming not only an educational tool, but also a platform for developing strategic awareness and the ability to assess the impact of projects on their surroundings, which meets the contemporary requirements of the Fourth Industrial Revolution. Projects implemented under Erasmus+ are not only a tool supporting education and mobility, but also a channel for implementing the European Union's broader political agenda, whilst project managers act as intermediaries between European institutions and local partners, enabling EU priorities to be translated into operational and local action [Salamone, 2022, pp. 7-9]. In this context, the development of project management skills within Erasmus+ takes on a strategic dimension - mobility participants learn not only how to manage tasks and teams, but also to understand the broader political and social context in which projects are embedded. Such experiences reinforce the Perspectives domain in the IPMA ICB 4.0 standard, which emphasises the need to link project activities to the organisation's strategy, regulations and aspects of sustainable development [IPMA, 2015, pp. 36-65]. Erasmus+ thus becomes a space where project management skills are combined with the ability to interpret and implement European policy objectives, thereby preparing participants to take on leadership roles in an international context.

The study is subject to a number of limitations stemming from its pilot nature. First and foremost, the limited sample size prevents the results from being generalised to the other dimensions of the IPMA - in particular, the set of competences

within the Perspective dimension is under-represented. Furthermore, the collected responses relate to a period in which ERASMUS+ mobility was partly implemented in the post-pandemic period, which undoubtedly influenced the perception of experiences of participating in this programme. At the same time, future research could focus on a comparative analysis of the perspectives of users of the Erasmus+ Programme and IPMA STUDENT (PM STUDENT). A review of the literature on Erasmus+ reveals challenges associated with participation in mobility, such as cultural, linguistic and financial barriers. Paradoxically, it is precisely these difficulties that could foster the development of desirable competences, including flexibility and adaptability, which are key in project work, and their analysis could complement the present study.

Conclusions

According to the Future of Jobs Report, the modern world is experiencing rapid growth in global connectivity, the widespread use of smart technologies, and universal access to social media. Forecasts by the World Economic Forum suggest that over the next 15 years, almost half of all jobs could be subject to automation. In the face of these changes, it is essential to equip future workers, regardless of their professional role or economic sector, with the skills that enable employability. The expectations of the project-based labour market go far beyond purely technical skills. The analysis confirms that the experience of Erasmus+ programme graduates fosters the development of key competences for project management in the context of the challenges of the Economy 4.0 labour market. The strongest effects of international mobility undertaken through Erasmus+, as noted by survey participants, are in the *People* domain according to the IPMA ICB 4.0 standard, covering interpersonal and behavioural competences such as communication, teamwork, leadership, creativity and conflict resolution. At the same time, participation in Erasmus+ fosters the development of technical competences (*Practice*), including analytical thinking, adaptation to changing conditions and risk management. In the *Perspectives* area, Erasmus+ strengthens cultural, social and environmental awareness, which allows for a better understanding of the strategic context of project activities.

The results of the analysis confirm that Erasmus+ serves not only an educational function but also a competence-building one, supporting the development of key skills for future project managers in the context of the Economy 4.0.

The findings indicate that the competences acquired through mobility are linked to international project management standards and forecasts regarding future employee skills. Erasmus+ mobility not only supports the transition from education to employment, but also prepares graduates to take on project roles in the Economy 4.0

workplace, which is dominated by digitalisation, innovation and sustainable development.

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Przygotowanie przyszłych kierowników projektów do pracy w warunkach gospodarki 4.0: perspektywa Erasmus+ i IPMA ICB 4.0

Streszczenie

Gospodarka 4.0 i rosnąca projektyzacja środowiska pracy sprawiają, że uczelnie coraz częściej stają przed pytaniem: czy ich absolwenci są rzeczywiście gotowi na wymagania projektowego rynku pracy. Artykuł bada, czy i w jakim stopniu mobilność w ramach programu Erasmus+ przekłada się na rozwój kompetencji wymaganych przez standard ICB 4.0 Międzynarodowego Stowarzyszenia Zarządzania Projektami (IPMA). Podstawę analizy stanowi porównanie efektów kształcenia Erasmus+ z macierzą kompetencji ICB 4.0 w obszarach Perspektywy, Ludzie i Praktyka. Z badania wynika, że Erasmus+ najsilniej wpływa na kompetencje z obszaru Ludzie — komunikację, pracę zespołową, przywództwo i rozwiązywanie konfliktów — oraz Praktyka, gdzie respondenci wskazywali na myślenie analityczne i zarządzanie ryzykiem. Wyniki sugerują, że dobrze zaprojektowana mobilność może wspierać przyszłych kierowników projektów do pracy w warunkach gospodarki 4.0.

Słowa kluczowe

zarządzanie projektami, kompetencje, mobilność w ramach programu Erasmus+, ramy IPMA ICB 4.0, Gospodarka 4.0