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ENHANCING PROJECT MANAGER COMPETENCIES IN STUDENTS: A CASE STUDY OF THE PROJECT ACADEMY OF REGIONAL DEVELOPMENT AND EU FUNDS

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ABSTRACT

Project management is characterized by improvisation, unexpectedness, and unpredictability. This is precisely what students encounter when they find themselves in the implementation of a project for the first time, therefore the primary goal of the research is to establish the effects of active student engagement in the project for the empowerment and development of their competencies, as well as the coverage of competencies based on International Project Management Association (IPMA) standards. In this article, the authors used the example of the project (Academy of Regional Development and EU Funds implemented by the Ministry of Regional Development and the European Union). Empirical research was conducted using the in-depth interview method with 20 respondents who participated in the selected project as leaders of their student group. Namely, participation in the Project fully or partially covers 89,48% of key competencies for further development and guidance in excellent project managers, as shown by the empirical research conducted in this article. The results of the research are also significant because they are the results of the students' participation in the Project, which is financed by EU funds, so, due to the possibility of franchising and implementation of the Project throughout the EU countries, it provides the opportunity for a large number of students to significantly improve their competencies and become more competitive on the labor market. The significance of this research comes from determining the usefulness of participating in real projects for students and future project managers.

KEY WORDS

Academy of Regional Development and EU Funds, project managers' student competencies, coverage of competencies, IPMA standards

CLASSIFICATION

JEL: H43, M11, O22

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INTRODUCTION

Students can participate in numerous projects, workshops, and courses during their studies. It is assumed that these extracurricular activities contribute to their differentiation from those students who do not participate in them and strengthen their competencies. Although there are numerous education programs for future project managers, they are often based on acquiring technical skills and competencies. In addition, students with a formal education in project management often fail to get a job in the field right away, given that superiors generally consider project management too complex for young people. For this reason, an increasing number of students – after introspection and reflection on their strengths, weaknesses and opportunities offered in the environment – during their education turn to work on projects, in student associations and the like, with the hope that in this way they will refine their portfolio of competencies and gain practical experience, e.g. [1, 2]. The scientific community also recognizes this problem, so numerous authors, e.g. [3-6], try to emphasize how vital project-based learning is for young experts. The competence of the workforce is crucial for success on the international labor market, which is why trends in higher education are also changing.

The main objective of the research is to present and analyze the effects of active student engagement in the project for the empowerment and development of their competencies, during the implementation of projects intended for students, and in this way to fill the gap in recent scientific literature that analyzes the issue above, especially in the Republic of Croatia, as well as to bring new knowledge based on the conducted empirical research in the context of project management during the implementation of projects intended for students. The point of view of student group leaders on the competencies they acquired through participation in the Academy of Regional Development and the EU funds project, and which were key competencies for their further career development, is discussed. Using the example of the Academy of Regional Development and EU Funds project implemented by the Ministry of Regional Development and EU Funds, the effects of project management were discussed from the point of view of the leader of a particular student group participating in the Project. It was pointed out that one of the project managers' key roles is in terms of project limitations, when resolving conflicts, conducting meetings, and considering the consequences for the entire project. Another research objective is to establish the coverage of the Project's competencies through learning outcomes. It is assumed that participation in the Project will exceed the number of fully covered competencies compared to those in formal education (research hypothesis).

Conducted research contributes to the scientific discussion in the context of students' and future project managers' participation in project management, which results in personal development and empowerment of young people in this challenging activity. This work's importance and scientific contribution are evident in the determination of adopted and improved competencies: it is confirmed that participation in the project covers 89,48% of competencies key to further development and guidance into excellent project managers. Especially within the Republic of Croatia, this is filling the scientific gap and bringing new knowledge.

The article is divided into five parts. The first part of the article is the introduction with literature review, objectives of the article, and research hypothesis. In the second part of the article, the research methodology is explained. The third part of the article presents the results of the research. Discussion of the research results is explained in the fourth part of the article, while in the fifth part, the conclusion with research limitations and directions for future research is presented.

THEORETICAL BACKGROUND

The problem of the competence gap in the labor market is a constant challenge. At the same time, more and more entrepreneurs are looking for more specially educated employees [7]. The

need for constant updating of competencies, especially in the era of digital transformation, e.g. [8-10], has placed lifelong learning at the focus of research, and in developed countries at the top of the political agenda at the international level [11]. Nijhuis already noticed almost a decade ago that the education process of future project managers focuses more on technical-technological competencies than on those related to the bigger picture (perspective) and personal relationships (people), which is mainly the focus during advancement [12]. In a later work, Nijhuis goes so far as to ask what needs to be taught to students in project management, which is most important in the modern environment that quickly changes [13]. Higher education has a key role to play in answering these questions. However, in Croatia, there are many challenges in harmonizing the learning outcomes of courses related to project management with existing standards, with the Croatian Qualification Framework, and in terms of unifying these learning outcomes at all institutions where these courses are held [14].

BRIDGING THE COMPETENCE GAP: THEORETICAL FOUNDATIONS FOR PROJECT-MANAGEMENT EDUCATION

In this context, significant differences in project management across different periods and their association with economic development have been highlighted [15]. Active learning places great emphasis on learning through practice. Namely, it has been asserted that during work, the level of qualification of post-graduates who had course(s) related to project management during their studies and now work as project managers increases across various areas of technical, behavioral, and contextual competence in project management [16]. In many organizations and industries, project work is now a common practice and a significant catalyst for change [11]. Therefore, high levels of competence in project management are highly desirable. This resulted in the introduction of numerous courses related to project management at various higher education institutions [11]. In his work, the last-mentioned author focuses on expanding the offer of courses on project management and project work offered by public universities and educational institutions in Norway. The research shows to what extent students' active learning is implemented in designing the course by examining the assessment methods used. This assessment method is limiting because it is not measurable how much it is implemented in practice. However, the results still show that students are actively involved in learning [11]. Additionally, Åsgård confirms that this approach to teaching is mainly associated with engineering and technical sciences and business administration [11]. In this regard, it should be devised how to validate in class the successes that students gain in extracurricular activities closely related to the application of learning outcomes in project management, at least in developing countries where such matters have not yet been officially resolved.

In-depth interviews were also used to question eight students about the factors that, in their opinion, contribute to success in event management based on a project they conducted themselves [17]. The Norwegian students agreed that in the project's initial phase, it is essential to create support and commitment to the project idea [17]. Implementing a well-planned concept and regular reporting are the basis for the activities that will occur and are key factors in the project's initial phase. Another critical success factor is establishing a clearly defined project organization with a project manager, deputy manager, and group leaders for each work area, where group members can choose tasks and roles based on their experience, knowledge, and skills [17]. The results of the Sidetrack project depend on factors such as good infrastructure (allowing efficient flow of information and communication) and regular meetings for implementation status reports, exchange of views, learning, and further progress within and between project groups, linked to a well-designed project plan. Common goals and good information, communication, and interaction among project members are factors that create committed high-performance teams, which also contribute to the success of the Sidetrack project [17].

Research conducted at Reykjavik University in Iceland demonstrates the importance of active learning and real-world project experience as integral to students' educational journeys. Additionally, it was discovered that recognizing altruism, i.e., the desire to do good and contribute to the greater good of society, significantly boosted student motivation [18]. Liikamaa surveyed 750 young project managers and students (it is assumed that the study itself is their project) to determine which competencies they consider key [19]. Based on the results of this analysis, the most critical competencies were Achievement Drive, Leadership, Conflict Management, and Initiative. Another observation of this research is that the competences are Drive for Achievement, Leadership, and Conflict Management. However, the individual already possessed them in practice and still wants to improve them, i.e., there was a willingness to develop them.

Soroka-Potrzebna observes how quickly identifying and assessing project opportunities and threats becomes a key competence of project managers. Four hundred sixty-eight students from different Polish universities participated in the research. The conclusions of that article are of practical importance because they enable the identification of the level of competence, which has a significant impact on the success of the implemented project. The key conclusion is that within the competent element Risk (threats and opportunities, scope of tools and techniques for quantitative assessment of threats and opportunities), it is necessary to strengthen tools and techniques for identifying threats and opportunities [20]. Souza, Lima, and Mesquita developed an assessment of competencies from the People domain (according to IPMA's ICB 4.0) based on different scenarios in project management [21]. The scenarios were developed in cooperation with long-term experts and scientists in the field. Scenario-based assessment enables the presentation of situations related to professional project management practices and, in this sense, enables the assessment of competencies in a context inspired by professional environments. As a result of the analysis, a competency assessment was obtained through dynamic, interactive scenarios that promote reflection and are aligned with professional project management practices. The second result indicates the potential of scenario application as a complementary strategy to traditional assessments.

Similarly, Kline, Kumar, and Ritzhaupt conducted research through in-depth interviews with 13 project managers from higher education institutions across the US [22], guided by the Project Management Body of Knowledge (PMBOK). During the data analysis, three dominant themes emerged: "knowledge", "skills", and "abilities". Their results indicate that project managers must possess many competencies to fulfill their roles and responsibilities.

EMPIRICAL INSIGHTS INTO BUILDING PROJECT-MANAGEMENT COMPETENCIES

An opportunity to suggest possible improvements to curricula and learning outcomes in the Project Management course has been identified [23]. Pasławski, Nowotarski, Milwicz and Dubas also came up with this idea. They believed that the need to modernize the curriculum grows with the development of new technologies and changes in the construction market worldwide. The research shows how EU funds influence the construction and managerial competence study at the Faculty of Civil Engineering and Environmental Protection Engineering at one of the largest universities in Poland – Poznań University of Technology [24]. The European Commission invests a lot of funds in the modernization of higher education, and they grabbed this opportunity with both hands at a Polish university. These funds made it possible to change the competencies of project managers due to changes in the construction industry. Some new subjects were introduced, and preparations were made to launch a postgraduate professional study in construction organization, technology, and management [24]. In addition, these projects, aimed at strengthening cooperation with industry, helped graduates find jobs. In a

broader sense, the offer and competitiveness of the university, cooperation with the real sector, the interest of foreign students in studying their increases, and the employees of the institute and faculty involved in the preparation and implementation of these projects had the opportunity to create new contacts in Europe and the world, which had a positive effect on research and teaching potential, creating opportunities for development and joint projects [24].

Other authors in Poland also testify to the modernization of such programs, which shows that Poland strives to be at the very top when it comes to the education of students in project management. Several years of experience in cooperation between the academic community and the IPMA branch in Poland have proven that implementing the IPMA student program at universities improves the quality of academic education in project management [25]. Upon completion of their studies, students receive IPMA's certificate, which is recognized in the global labor market, and thus, their academic education is improved. The goal is that upon graduation, students will have competencies that will enable them to compete on the labor market and which they will meet the demands and needs of the market. According to the Bologna system, the basis for managing the competences of educated students is educational effect matrices, which cover knowledge, skills, and social competences, depending on the field in which they are educated [25]. All these elements must be based on the national qualification framework (in the Republic of Croatia, therefore, with the Croatian Qualification Framework, HKO). Improving student competencies can also be achieved through non-formal education programs, such as courses, workshops, training, and activities organized by various associations. Enabling students to include and actively participate in such extracurricular programs significantly increases their value on the labor market [14, 25].

A table of competencies necessary for certified project managers and their coverage has been published [14, 26]. Introducing the so-called serious games can improve teaching and student competencies regarding project management. It has been concluded that such games encourage the development of student-professor relationships, change the way of teaching in project management, help acquire social and soft skills, and trigger pedagogical changes in project management education [27]. They defined serious games as all digital and simulation games intended for learning [27]. This research topic provides an opportunity to see the broader picture and provides guidelines for future research.

METHODOLOGY

BACKGROUND: PROGRAM SETTING AND STAKEHOLDER LANDSCAPE

Research conducted in this article is based on empirical research of a project manager's competencies in students at the example of the "Academy of Regional Development project and EU funds". The project "Academy of Regional Development and EU Funds" came to life in 2014 as a pilot project of the Ministry of Regional Development and EU Funds in the Republic of Croatia and has been continuously implemented every year since then, educating more and more students about all aspects of using EU funds. The project includes cooperation between the competent Ministry (MRRFEU), regional coordinators (regional development agencies), and student groups. The public call is published at the beginning of each year. The project lasts almost an entire calendar year. The participants of the Project so far have been various student associations and informal groups from faculties and schools in Zagreb, Osijek, Rijeka, Zadar, Vrbovac, Split, Dubrovnik, Požega, Čakovec, Varaždin, Zaprešić, Šibenik, Gospić, Bjelovar [28].

As shown in Table 1, different stakeholders assume different roles in the Project's phases (conceptualization, definition, execution).

Table 1. Roles of stakeholders in the Project through the Project phases.

Phase 1: Conceptualization			
Stakeholder	Ministry of Regional Development and EU Funds (MRRFEU)		
Role	Holder, organizer		
Phase 2: Defining			
Stakeholder	Student group (association or informal group)	Regional development agencies and other information centers, Consultant companies	Ministry of Regional Development and EU Funds (MRRFEU)
Role	Candidates	MRRFEU partners	Coordinator
Phase 3: Implementation			
Stakeholder	Student group (association or informal group), Faculty employees whose students participate in the Project, Businessmen participating in the activities of the Project, Consulting companies, Representation of the EC in the Republic of Croatia, Regional development agencies and other information centers, Ministry of Regional Development and EU Funds (MRRFEU) – implementer		
Role	Participants		

The Ministry of Regional Development and EU Funds is the holder and organizer of the Project and designs it. Students will participate in the phase of defining the Project. Of course, the central coordinator is the Ministry of Regional Development and EU Funds, which, in agreement with regional development agencies and other information centers, considers the schedule of activities related to the tour of implemented projects from EU funds. Depending on the amount provided for the education of students, a public procurement procedure is carried out, and a consulting company is hired to carry out the education. In the project's implementation phase, the students involve many new stakeholders to help them realize the tasks. One of the tasks that requires the active involvement of students in searching for and finding other Project stakeholders is the organization of the EU Funds (Week). Entrepreneurs who have withdrawn funds for their projects are happy to respond and share their experiences with curious students. There are also employees of colleges and higher education institutions whose students participate in the Project and are happy to meet and instruct the students on solving a task [28].

Regarding the research sample, this research included 20 students who, from 2014 to 2024, held the position of student group leader in the project Academy of Regional Development and EU Funds in Croatia. The participants were chosen based on different academic backgrounds and experiences. However, all participants contributed to the results' diversity and reliability and provided a deeper understanding of the importance of understanding the financing and implementation of EU projects. The competent ministry implemented the project, i.e., the Ministry of Regional Development and EU Funds. Since the project is competitive, it is considered that each of these students had the task of directing the team towards victory, that is, winning as many places as possible for the award trip to Brussels (their internal project) [28].

DATA-COLLECTION PROCEDURE: SEMI-STRUCTURED INTERVIEWS

Empirical research was conducted for this article. An in-depth interview was used as the research instrument. In addition to generalities (e.g., the gender of the respondent), respondents were asked to answer questions about age, i.e., how old they were when they first became leaders of student groups in the Project, to state the county where they studied, where they are currently employed and the county they come from, and to state how long they were student group leaders at the Academy. Also, the authors of this article were interested in the

composition of their teams, e.g., whether the team members were from the same faculty or from different faculties, which qualities and skills of the team members were considered by the leaders of the student groups to be a valuable asset, i.e., a valuable addition. In addition, the leaders of the student groups were supposed to answer when the most remarkable success was achieved, that is, which place (rank) was won in the competition, and how many students from their group then managed to go on the prize trip. Ultimately, student group leaders were to self-assess, according to the IPMA Competency Table (Individual Competence Baseline (ICB) version 4.0, Appendix D, p.414), the level of competencies acquired or honed through the Project [29]. Respondents were asked to be guided by the six proposed levels to determine at which level they adopted or acquired one of the competencies. At the lowest level, it is about knowledge, then comes understanding, then application, analysis, synthesis, and finally, evaluation. This means they are students who consider that they have fully adopted some competence at a level that allows them to be evaluated. At the end, more questions related to the respondents, e.g., what are their interests and hobbies, how long did it take to get their first job after completing their studies, and do they think they enabled all their colleagues and team members to show their full potential in the Project. Respondents could add other observations.

Respondent profiles

Table 2 summarizes the profile of respondents who participated in the research. All respondents played key roles and led their teams within the Project. Note: Both respondents, whose teams were ranked first, also won the right to go on a prize trip, which in both cases was Brussels. In the first case, it is about 2014, when the Project was a pilot project, while in the second case, it is about 2018. These data are interesting because these leaders in their self-assessment expressed a discrepancy in adopted competencies - in the first case, the leader believed that his greatest strengths were resourcefulness and communication. In contrast, in the second case, it was analytical thinking and a focus on results.

According to IPMA's table of competencies [29], respondents had to self-assess the competencies acquired or perfected through the Project.

Operationalizing Competencies: Variables and Definitions

Main variables can be seen in [29] (5 perspective competencies, 10 people competencies, and 14 practice competencies). As [26] combined some competencies, they and [14] do not have the following competencies: Strategy, Management, structures and processes, Compliance, standards and processes, Power and interest (all from the Perspective area), Teamwork, Relationships and involvement, Personal integrity and reliability, Self-reflection and self-management (all from the People area), Financing, Time, Procurement and partnership, Organizing and informing, Requirements, goals and benefits (all from the field of Practice).

The following competencies were selected as variables considered by [26], and [14]: Stakeholder relations management (proxy for Stakeholders), Project Scope Management (proxy for Scope), Project Planning (proxy for Planning and Control), Resource Management (proxy for Resources), Change Management (proxy for Change and Transformation), Flexibility (proxy for Resourcefulness), Risk Management (proxy for Risk and Opportunity), Quality Management (proxy for Quality), Cost Management, Results Orientation, Analytical Thinking (proxy for Design), Communication (proxy for Personal Communication), Conflict Management (proxy for Conflicts and Crisis), Cultural Awareness (proxy for Culture and Values), Emotional Intelligence, Leadership, Motivation, Team Building (proxy for Selection and Balance), Negotiation (table 3). The significance of these variables in the context of the success of student groups in the Project is considered. Also, the coverage of competencies in the Project and formal education was compared.

Table 2. Respondent profile.

Gender	40% M (8)	60% F (12)
The age at which the respondents first became leaders of their student teams	70% < 25 years	30% ≥ 25 years
The university that the respondents attended	75% University of Zagreb	25% Josip Juraj Strossmayer University in Osijek
The faculty that the respondents attended and the number of respondents from each faculty	Faculty of Economics in Zagreb (7) Faculty of Civil Engineering in Zagreb (2), Faculty of Medicine in Zagreb (2), Faculty of Agriculture in Zagreb (2) Faculty of Mechanical Engineering and Shipbuilding in Zagreb (2)	Faculty of Economics in Osijek (3) Faculty of Civil Engineering in Osijek (2)
Origin of respondents and number of respondents	City of Zagreb or Zagreb County (4), Split-Dalmatia County (4), Zadar County (4), Osijek-Baranja County (4), Sisak-Moslavina County (4)	
Place of employment of respondents and number of respondents	Split-Dalmatia County (2), Primorje-Gorski Kotar County (2), Brod-Posavina County (2), Zadar County (2), Osijek-Baranja County (6), City of Zagreb (6)	
First employment of the respondent	followed, on average, 1-2 years after graduation (permanent job).	
Inclusion of students from other faculties in your team in the Project	25% of respondents included students from other faculties in their student groups (eg, the head of the student group from the Faculty of Medicine included colleagues from the Faculty of Economics and the Faculty of Architecture). 75% of the leaders of student groups, however, stuck to associates from the same faculty.	
Traits and competencies that managers considered necessary in their colleagues	proactivity, diligence, creativity, promptness, curiosity, self-confidence, resourcefulness, and loyalty	
Hobbies of respondents	sports (e.g., yoga, fitness, hiking), photography, performances with local KUDs, learning a foreign language, reading, etc.	
Placement in the overall ranking in the tender part of the Project		
1. Place	2 respondents*	
2. Place	4 respondents	
3. Place (or lower)	14 respondents	

Table 3. Description of variables (continued on p.454).

Variable	Definition
Management of relations with stakeholders	The ability of the student in the role of project manager to define, analyze, and manage different interest groups that influence or are influenced by the project. This competence includes effective communication, negotiation, and project finalization adequately and acceptably [31].
Project scope management	Control of all project tasks so that all the necessary products, services, and results defined by the project are delivered within the predetermined deadline
Project planning	Defining all the key elements of the project to ensure its successful finalization. Keil, Lee, and Deng indicated in their work that a reasonable and logical division of high-level goals into less measurable tasks is essential for this variable [32].
Resource management	The resource management variable refers to identifying the necessary human, material, and financial aspects and their optimal allocation to ensure that the project is executed within the given deadlines and budget [33]. Kerzner says that no matter how scarce resources are, they should be adequately and efficiently managed [34].
Change management	It refers to planning and monitoring changes within the project to adapt it to all possible new conditions and requirements.
Flexibility	Ahsan, Ho, and Khan say that adaptation to different situations and circumstances of the project is essential for quality execution. This includes adapting plans, resources, and strategies to the project's requirements. In today's digitization and digital transformation age, all projects are subject to change [35].
Risk management	It refers to the proactive definition, analysis, and resolution of potential risks that may arise during the project's implementation and thereby cause greater or lesser damage. Zielinski says that risk management is an activity that is important throughout a project's life cycle [36].
Quality management	Ensuring consistency and process improvement to meet project needs and expectations. It implies continuous and precise monitoring of project quality and performance within the project itself [37].
Cost management	Keil et al. say that this variable implies managing and analyzing the costs associated with the project to ensure the accuracy and reality of the budget and minimize unexpected costs [32].
Orientation to results	Dainty, Cheng, and Moore describe this variable as an activity primarily related to the team's focus on achieving specific project goals and outcomes. For a reason, the student in the role of project manager is the most responsible for the project's success, which can be measured by this variable [38].
Analytical thinking	Ability to think critically and rationally about information, which includes analyzing and evaluating data to make informed and timely decisions [39].
Communica-tion	Communication is key to a project's successful and timely implementation from start to finish. Each person in the team must have timely and well-directed work tasks within the project itself, and everyone should communicate successfully with each other to realize the project itself [40].
Conflict management	It is a variable that primarily refers to the student as the project manager, who is in charge of maintaining a pleasant working atmosphere within the team without conflicts and events that can damage the project itself.

Table 3. Description of variables (continuation from p.453).

Variable	Definition
Cultural awareness	Ahsan et al. [32, 35] describe this variable as a key factor in the successful implementation of the project. It implies the acceptance of cultural differences between people and team members, as well as the requirements and goals of the project, which must be by the ethical principles of cultural differences.
Emotional intelligence	This variable has a somewhat more profound meaning than the communication variable. It refers to the ability to recognize, understand, and manage one's emotions and the emotions of other participants within the team and the project itself. Obradović, Jovanović, Petrović, Mihić, and Mitrović note that people with developed emotional intelligence understand the project requirements and, for this reason, create a pleasant, motivated, and efficient environment during the project's execution [41].
Leadership	According to [35], leadership is a variable that can be described as a process of influence of an individual (leader) on a group to achieve common goals.
Motivation	Fisher says that motivation is a process that directs and maintains the desired behavior of an individual and a group, all to achieve the desired results. It can be internal or external and is influenced by various material, emotional, and other factors [42].
Team building	Fisher says that "Team building" is a broad term that is most often described as a process that encourages team members to cooperate better, more adequately, and more sincerely [42].
Negotiation	According to [43], negotiation is a communication process between two or more entities to reach an agreement on common or opposing interests.

Additional competencies that, guided by [29], this article considers are shown in Table 4.

Table 4. Additional variables as defined in [44-46] (continued on p.455).

Variable	Definition
Strategy	A comprehensive plan of guidelines by which decision-making takes place, based on the requirements and objectives of the project.
Management, structures, and processes	This variable defines every successful project's key elements, and practically every well-managed project must have this part well developed.
Compliance, standards, and processes	This variable ensures that the project complies with legal regulations and that all aspects meet the set standards.
Power and interest	Two aspects form one connected whole. They play a key role in social and economic structures, and through this variable, the project's interests and demands are realized.
Teamwork	It is a variable that represents the joint effort of team members to achieve project goals.
Relationships and involvement	It implies commitment, motivation, and engagement, combined with interpersonal relationships, to achieve the project's goals.
Personal integrity and reliability	They are traits that individuals possess that shape how they act in society and the project itself. These traits represent one variable of our research that significantly affects the previously mentioned interpersonal relationships, consequently affecting professional performance.
Self-reflection and self-management	It is a key variable for personal validation and successful project management. This variable implies understanding one's wishes and goals and integrating them with the goals of the entire project team, and thus the project itself.

Table 4. Additional variables as defined in [44-46] (continuation from p.454).

Variable	Definition
Financing	In a business sense, it is undoubtedly the most crucial variable. However, the project team with the most financial resources is not guaranteed to be the most complete. This term refers to grants, subsidies, loans, and the like used to implement the project successfully.
Time	Time is a variable that must be respected in full, except in extraordinary circumstances. It defines the deadline and all the deadlines by which certain segments of the project must be delivered.
Procurement and partnership	These processes enable organizations and project subjects to optimize their resources, improve the quality of the project, and successfully finalize it.
Organizing and informing	Quality information and organization are essential to achieve project goals and ensure the successful use of resources.
Requirements, goals, and benefits	Requirements, goals, and benefits are key elements in project planning and implementation, and their proper definition and management can significantly affect an organization's success.

The coverage of these variables is considered in the context of student participation in a real project. The coverage of competencies in the Project and formal education was also compared.

Research instrument

A total of 20 respondents were examined using the in-depth interview method, which is the main instrument of the research. An in-depth interview is a qualitative research method that is appropriate to use when we want to get detailed information about someone's thoughts and behavior. Interviews often provide context to other data (such as outcome data), offering a more complete picture of what happened in the project and why. In this case, an in-depth interview was chosen instead of a focus group because the researchers felt that potential participants might not feel comfortable talking openly in a group and to differentiate individual (as opposed to group) opinions about the project. The process by which in-depth interviews were conducted in this research is as follows: a) interview planning (who will be the participants, when the interview will be conducted, etc.); b) agreeing on the interview protocol (e.g., taking notes, etc.); c) data collection; d) data analysis; e) interpretation and shaping of research results [30].

RESULTS

The results of the empirical research are observed through two phases: a) the level of adoption of a particular competence; b) coverage of competencies through the Project. The results are presented through a case study in the first part, while the context of the scientific contribution is given in the second part.

Phase 1 – Self-Assessed Competency Levels

When asked how they rate their knowledge regarding the Strategy variable, 40% of respondents rated this competency at the level of understanding. For the variable Management, structures and processes, as many as 70% of respondents evaluate it at the application level. Compliance, standards, and regulations are variables that 80% of respondents rated at the level of analysis. 60% of respondents evaluated the Power and Interest variable at the level of synthesis. The last variable examined through the prism of Perspective was Culture and value, which 60% of respondents said was at the level of synthesis. Through the prism of relationships with people, the first variable was Self-Reflection and Self-Management, where 55% of respondents indicated they were in control at the evaluation level.

For the variable Personal integrity and reliability, as many as 80% of respondents opted for the evaluation level. In the case of the Teamwork variable, the results are exciting because they mainly come down to application (90%). In comparison, only 10% of respondents opted for the level of understanding, which could indicate that, in reality, they are more inclined to work independently and that it is not easy for them to work in a team. However, the variable relationships and involvement clearly show how student group leaders understand their groups' dynamics and monitor their interpersonal relationships. As many as 75% of the respondents declared that it is at the level of analysis. The dispersion of responses is also visible in the orientation to results: 35% of respondents chose the level of understanding, 25% chose the level of knowledge, 25% chose the level of application, and 15% chose the level of analysis. This may also indicate that the cultural focus on results is associated with aggressiveness, which may correlate with the dominant gender of the respondents. On the other hand, personal communication is self-assessed at very high levels: as many as 80% of respondents claim it is at the evaluation level. Interestingly, conflicts and crises were marked with 70% of the votes at the analysis level. This shows that conflict and conflict management are definitely what student group leaders spend a lot of their time on. Negotiation achieved the highest percentage at the level of understanding: 50%. 10% of respondents are at the level of knowledge, while 40% are at the application level. This weak percentage of the application of negotiation indicates that young leaders either in a greater number of cases lean towards team members (which could correlate with their age, e.g., it can be assumed that younger leaders lean towards the team more easily), or they go their way, that is, as they imagined, with 2-3 closest associates. There is considerable room for improvement in this competence, and participation in such an informal project is the first step. Leadership is marked chiefly at the application level (80%). It is also possible because for most of the respondents, this is perhaps the first such project in which they participated and where they had to show leadership.

Almost all respondents highlighted resourcefulness as something they immediately recognized in other colleagues, which is why 90% ranked it at the evaluation level. In addition, the two variables that [29] did not distinguish as separate (Motivation, Emotional Intelligence) also have 90% of respondents who opted for the evaluation level, which means that student group leaders believe that they have a high EQ, as well as that they understand the motivation triggers of their colleagues and other stakeholders. They differ somewhat from the rest of the respondents. Namely, for Motivation, 10% of respondents opted for the level of synthesis, while for Emotional Intelligence, 10% opted for the application level. Team building, as the last variable considered in this section and which is also not specifically singled out as a competency in [29], is mainly at the application level (65%). The last part considers the variables through the prism of Practice. In the context of the Designing variable, the most significant part of respondents, 70% of them, agreed that they are at the level of application.

The results for the Time variable showed a slightly lower percentage regarding the application level (60%). This shows that most respondents are still aware of the importance of time as an irreplaceable resource, that is, they strive to manage their own and other people's time well. The variables Requirements, goals, and benefits were marked mainly by most respondents at the level of understanding (90%). Financing was primarily marked at the application level (70%). The respondents' opinion regarding the Procurement and partnership variable was mainly at the level of understanding (60%). Most respondents agree that the variable Organizing and Informing is at the application level (60%). A large percentage of respondents indicated that the variable interest participants were at the level of application (60%). This shows that student group leaders have no difficulty identifying interested participants and including them in those implementation phases when optimal. Change and transformation is a variable with an identical distribution of respondents' attitudes as with the variable Interest participants. The respondents' attitude regarding the variable Selection and balance shows a

slightly different distribution. It is really about choosing the people who will make up the team, building it, and maintaining the delicate balance of different characters and personalities. Here, respondents mostly opted for the level of synthesis (70%). The variable Resources was marked by the majority of respondents at the level of analysis (70%). The Quality variable was mainly marked at the level of understanding (75%), while the rest of the respondents opted for the level of knowledge (25%). Ultimately, the variable Risk and opportunity for most respondents is at the level of understanding (60%). In addition to Scope, planning, and control are other variables that remain somewhat neglected. Respondents say that there can be a clear plan. Still, they do not have enough mechanisms of control, rewards, and punishments to evaluate the work of individuals without resenting those who work less. Because of this, the level of knowledge predominates with these variables, but the application problem appears. The project's scope was not in the domain of the respondents. The results for all variables are presented in Table 5.

Thus, the results in this research consider all the competencies suggested by [29], while, for example, [26] considers only some competencies. These findings provide valuable insights into the self-assessment of project managers' competencies in students and indicate areas where there is a high level of knowledge and those that require further development. The young leaders of student groups are also aware of this - some of them, with time, believe that they could have given some colleagues the opportunity, that is, enabled them to show their full potential. There are also those leaders of student groups who emphasize that, in their role as project leaders, they were very focused on checks and controls, which is why they performed a large part of the work (avoidance of delegation). These additional valuable observations show that it is really about active learning, i.e., learning through practice, that changes the project participants.

As one of the interviewees noted: "I learned that sometimes people should cooperate between several faculties so that they complement their knowledge and skills rather than stick to our college and force the creation of a team if there are not enough motivated and ambitious people. I later applied that vital lesson to other projects (student, Erasmus, EU, city, county projects)". The results can help shape future educational programs and provide valuable information for existing educational programs and initiatives to support project managers' competencies in students, improving their skills and abilities.

Table 5. Overview of Competency Attainment: share of respondents per Proficiency Level (continued on p.458).

Area of competence	Variables	Knowledge	Understanding	Application	Analysis	Synthesis	Evaluation
Perspective	Strategy		40		30	30	
	Management, structures, and processes			70	15	15	
	Compliance, standards, and regulations		20		80		
	Power and interest	20	20			60	
	Culture and values		20			60	20
People	Self-reflection and self--management					45	55
	Personal integrity and reliability					20	80

Table 5. Overview of Competency Attainment: share of respondents per Proficiency Level (continued from p.457).

Area of competence	Variables	Knowledge	Understanding	Application	Analysis	Synthesis	Evaluation
People	Personal communication					20	80
	Relationships and involvement		15		75		10
	Leadership	10	10	80			
	Teamwork		10	90			
	Conflict and crisis				70		30
	Resourcefulness				10		90
	Negotiation	10	50	40			
	Orientation to results	35	25	25	15		
	Team building		10	65	15	10	
	Motivation				10		90
	Emotional intelligence			10			90
Competencies: Team Building, Motivation, and Emotional Intelligence were considered when assessing this competence area, although [29] does not consider them separately; some authors single them out, e.g. [26].							
Praxis	Designing		25	70	5		
	Requirements, goals, and benefits	10	90				
	Extent	85	15				
	Time	20	20	60			
	Organizing and informing	15	20	60	5		
	Quality	25	75				
	Financing	15	15	70			
	Resources			15	70	15	
	Procurement and partnership	40	60				
	Planning and control	80	20				
	Risk and opportunity	40	60				
	Interested participants			60	20	20	
	Change and transformation			60	20	20	
	Selection and balance					70	30

Phase 2 – Competency Coverage within the Academy Project

According to the competencies identified and recognized by [26] as key in the modern business environment, those in Table 6 were selected. Therefore, the summarized result of the research is the model of competency coverage in the Academy Project. The model compares the competencies students should acquire in their formal education with the impression of the leaders of student groups in the Academy Project about what competencies and to what extent they acquired through it, Table 6.

Table 6. Competency Coverage Matrix: Curriculum vs. 'Academy' Project: O – partial coverage; X – not covered; ● – full coverage; ∗ – not considered as separate elements of competences by IPMA ICB).

Competence	Competence coverage [26]	Competence coverage [14]	Competence coverage in the Academy Project
Management of relations with stakeholders	●	O	●
Project scope management	O	O	X
Project planning	●	●	X
Resource management	●	O	●
Change management	O	×	●
Flexibility	●	∗	●
Risk management	O	O	O
Quality management	●	O	O
Cost management	O	O	O
Orientation to results	●	×	O
Analytical thinking	●	∗	●
Communication	O	×	●
Conflict management	×	×	●
Cultural awareness	×	×	●
Emotional intelligence	×	∗	●
Leadership	●	×	●
Motivation	●	∗	●
Team building	×	O	●
Negotiation	×	×	O
Number of fully covered competencies	9/19	1/19	12/19
Number of partially covered competencies	5/19	7/19	5/19
Number of competencies not covered	5/19	11/19	2/19

IPMA ICB does not consider flexibility, analytical thinking, emotional intelligence, and motivation as separate elements of competences [14]. Respondents were asked to self-assess the level of competences acquired or honed through the Academy Project, with the following being the levels of acquisition, from least to greatest: 1) knowledge; 2) understanding; 3) application; 4) analysis; 5) synthesis; 6) evaluation. The coverage of competencies in the considered Academy Project was validated so that those that the respondents emphasized were at least at the level of application (3) and above, and were classified as fully covered competencies by at least 50% of the respondents. Partially covered are those in which the respondents stated that they are in the majority at the level of understanding and knowledge, while those in which the respondents marked the first level - knowledge - with a minimum of 80% are classified as competencies that are not covered. As for the coverage of competencies that leaders of individual student groups in the Academy Project can develop by participating in it, it is evident that they have full coverage of mostly soft skills, for example, emotional

intelligence, communication, motivation, leadership, managing relations with stakeholders, flexibility, and team building. In addition, analytical thinking skills are fully covered because managers must think analytically before making decisions and weigh the risks to achieve the best possible results. However, risk management has partial coverage because the entire Academy Project has other risks, which can have significantly more disastrous consequences for the entire Academy Project and are in the domain of the Academy Project Holder's management. Like risk management, quality management follows the same principles. Negotiation is also partially covered because it can be considered mainly within the framework of negotiations within the team and with individual interested participants who want to be included in the implementation of project activities, however, negotiation at a higher level, for example in the context of collecting funds to realize the Academy Project, is in the domain of the Academy Project Holder. All leaders of student groups declared that they respect the culture and values of all participants. Cost management is also partially covered, as the leaders of student groups mainly take care of securing financial resources for implementing individual activities and allocating collected resources. However, managing resources (which are not exclusively financial) is fully covered by participation in the Academy Project. Unfortunately, it has been observed that the higher education institutions' capacities are used negligibly and should be more actively included in the Academy Project. Results orientation is also marked as fully covered. However, some respondents pointed out that having a good time and socializing with colleagues and friends is essential. In this context, the award itself (e.g., a study trip to Brussels) is not a significant result, but knowledge, networking, socializing, and long-term creation of good relationships with colleagues.

However, although the leaders of individual student groups have different visions of the result of the Academy Project, as well as different intrinsic motivations for participating in it, the focus on results is not in doubt. Project scope management is not covered because the Academy Project Holder determines it. Conflict management is fully covered by participation in the Academy Project. On the contrary, this is perhaps one of the competencies that stands out, because in every student group there is inevitably a conflict that needs to be managed satisfactorily and that needs to be channeled so that it is constructive, i.e., to contribute to greater team cohesion, or to generate new ideas through conflict that will contribute to the execution of project activities. Change management is closely related to conflict management because conflicts certainly bring changes. That is why this competence is also fully covered. As the interviews showed, teams with more members who found it more challenging to adapt to changes had more difficulties realizing the set goals. Project planning is not covered at all, but planning individual activities through the assignment and delegation of tasks to individual team members is covered.

Ultimately, the Academy Project has the most fully covered competencies, as many as 12 out of 19 (63,16%), while five are partially covered (26,32%). In summary, participation in the Academy Project covers 89,48% of the key competencies for further development and guidance into excellent project managers. This is understandable, given that practical participation requires demonstrating the most significant number of competencies to achieve success and results. At the same time, this can motivate young participants to get involved in the Academy Project.

DISCUSSION, IMPLICATION, AND CONCLUSION

SUMMARY OF THE RESEARCH

This article examines the project manager competencies in students and their coverage in the Academy of Regional Development and the EU Funds project. Through participation in the Project, students improved numerous competencies in the IPMA standard. The key result of the article is an insight into the self-assessment of the project manager competencies in

students, which indicates areas in which there is a high level of knowledge, as well as those that require further development. The research showed the highest average results regarding competencies in the People domain in [29]. This means that participation in this type of project empowers students mostly in terms of communication and cooperation with others. In addition, the variables Culture and values from the Perspective domain and Selection and balance from the Practice domain also have high values. Such findings were expected considering modern project management's global changes and challenges. Thus, participation in a project during studies has proven to be important for the development of so-called soft skills. Another key result is related to the leader's assessment of his own greatest strengths – namely, in the first case (when the team was ranked first, in 2014), the leader believed that his greatest strengths were resourcefulness and communication, while in the second case (also when the team was ranked first, in 2018) it was analytical thinking and focus on results.

These reflections have shown the importance of adaptation to the environment and the relevance of key competencies. A leader, a future project manager, who can adapt and adopt a set of the most critical competencies at that moment, lead the team through the change, and ultimately successfully implement the change, will be successful. The article has an additional value in terms of showing the coverage of project manager competencies in students in the Project, which is a valuable scientific contribution that speaks about the meaning of student participation in the Project. The hypothesis of the article, that the participation of students in project management will exceed the number of competencies fully covered in formal education, was confirmed. It is based on 20 in-depth interviews with directly involved participants in the Project, i.e., leaders of student groups. The result shows that participation in the project covers 89,48% of the key competencies for further development and guidance into excellent project managers. In comparison, the coverage for learning outcomes is only 42,11%, with the limitation that this applies to learning outcomes related to project management in construction education programs. Especially within the Republic of Croatia, this is filling the scientific gap and bringing new knowledge.

THEORETICAL IMPLICATIONS

Project-based learning has become popular in higher education as a practical pedagogical approach that promotes active learning, critical thinking, and practical application of knowledge. Research based on in-depth interviews has also been conducted [17]. However, the main difference is that in their research, the students were the ones who fully designed and implemented the project. In contrast, the competent institution designed the subject project discussed in this article (Project). This difference in roles in the projects also results in different importance of the considered competencies - while the Norwegian students concluded that the key competencies for successful implementation were those from the Perspective and Practice domains, the Croatian students were more focused on the competencies from the People domain. However, this differs from the conclusions of the students who participated in the research conducted by [19], where they believed they also developed a drive for achievement. As for this domain, the Norwegian students emphasize communication and interaction between team members as crucial for the project's success. Similarly, Croatian students highlighted motivation and emotional intelligence as key.

Therefore, the participant's role in the project defines which competencies for that person must be more pronounced and at higher levels. However, the level of competence of the students who participated in the research conducted by [20] also showed the need to strengthen tools and techniques for identifying threats and opportunities, which are competencies from the Practice domain. Although the competencies from this domain are relatively well represented in this research, there is still room for improvement. A gap has been noted between the competencies project management students should acquire and the competencies emphasized

during their education [12]. Namely, especially in developing countries and less developed countries, as shown by the research conducted by Ika, a visible correlation exists between project success and modern development, which can consequently be connected to the gap in the competencies of young project managers that the market demands and what higher education offers [15]. In Croatia, the situation is not significantly different and, although there are defined learning outcomes for courses related to project management, there is significant room for their reconsideration, modernization, and improvement in favor of acquiring the necessary skills and competencies required by the market, exactly as [16] showed in their research with Polish students. This research highlighted which competencies the respondents acquired and/or improved by participating in the project and which they consider crucial for their future development and advancement. For this reason, the connection between the results of these research is apparent here and results in the crystallization of the key backbone: the need to participate in real projects is inevitable for young project managers because in this way problem-solving skills are improved, and the competencies expected by the labor market are acquired and/or improved.

MANAGERIAL IMPLICATIONS

In addition to working on improving their competencies, all the student group leaders emphasized that the student group members have the opportunity to develop and/or improve specific competencies through participation in the Project. This is significant information when considering the employability of graduates - research has already shown that professional practice has positive effects, that is, it increases the employability of graduates and that it connects the education sector and the economy [47]. This was also shown in the research of [24] on the Polish case, where projects aimed at strengthening cooperation with industry helped graduates find a job. This is precisely what is achieved by the active participation of students in non-formal education through this type of project, as stated by [18] and [23]. As already mentioned, the results of this research have implications for the approach to education and education of younger ages, as already shown by [11] and [25]. Although there are efforts to create standards for the education of the youngest in the matter of project management (e.g. IPMA Kids, IPMA Teens, IPMA Juniors) and to include them in school curricula, it is also necessary to design and actively implement project education and learning through projects in schools, because in this way the skills and competencies of young people are strengthened and developed, which can have far-reaching consequences on a macroeconomic, global level (e.g. optimal use of resources, teamwork, mutual tolerance, inclusiveness, and other values that ultimately lead to a happier society).

The results of conducted research are also significant because these are the results of students' participation in the Project, which is financed by EU funds, so, due to the possibility of franchising and implementation of the project throughout the EU countries, it provides the opportunity for a large number of young people to significantly improve their competences and become more competitive on the labor market. At the same time, in a macroeconomic sense, the consequent connection with the increase in the human capital index of the EU itself can be assumed. In this context, it can be stated that this group is particularly advised to participate in the considered Project and other forms of building the required competencies.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The research limitations primarily refer to the time frame, access to specific databases and available works (so-called open access), and the sample of respondents. The theoretical review of the literature would be supplemented by supplementing the search with new keywords. Also, for future research, expanding the sample, i.e., increasing the number of respondents, is necessary.

In this regard, future research can examine the learning outcomes of other study programs and, based on this, make valid recommendations about the participation of students in the implementation of various projects. The practical implications of the research are numerous. The Academy project can be implemented in any member of the European Union, which is why the Ministry would be interested in the research results. There are numerous possibilities in sharing know-how and franchising this project. The results of this article can serve as predictors of the success of hiring student group leaders. For future research, it is suggested that the research be extended to the students who participated as members of the project teams and to the employers and their satisfaction with the Academy participants as employees. In addition, the proposal checks the correlation between project implementation success, i.e., individual student groups' success, and student group leaders' competence. In this case, it could be assumed that students of older generations and those who participated in earlier editions of the Project could have more pronounced competences, such as resourcefulness and communication. In contrast, those competences concerning digital skills would be more pronounced in leaders of the newer generation. Furthermore, it is suggested that official protocols be designed to validate the participation and success of students in practical activities and projects through courses related to project management, as this has not been practiced until now. So, the applied contribution of the work is reflected in the suggestion for improvement of educational programs.

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