# Career Paths of IT Project Managers: Exploring Generic Competencies and Progression Patterns

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***Abstract.*** *This paper examines the career paths of IT project managers (PM) and the generic skills required. Based on a survey of 98 professionals in Croatia, the analysis shows that fewer respondents began their careers as junior PMs. In comparison, a larger number entered the field from either software development roles or entry-level non-technical positions. Once in project management, professionals typically remain in the role or progress to higher managerial positions. For junior PMs, the most important skills are rapid learning, teamwork, problem-solving, and adaptability. For experienced PMs, the key competencies are problem-solving, motivating others and guiding teams toward shared goals.*

**Keywords.** IT project manager; Career path; Generic skills

## 1 Introduction

With the rapid advancement of technology, career development within the IT field has expanded to include numerous new professional roles. For instance, the European framework of ICT professional profiles, introduced in 2018, identified 30 distinct roles (CEN-CENELEC, 2018), while the latest CEN initiative proposes 37 AI professional role profiles, including AI Project Manager and AI Product Manager (CEN, 2026). Generative AI is significantly influencing labour market changes. World Economic Forum (WEF, 2025) Future of Jobs Report points out that in the next 5 years, more than 92 mil. jobs will be displaced, 170 mil. jobs created, and that technological advancements urge permanent reskilling and upskilling. Project managers (PMs) are an occupation seeing growth and hold the 12th position among the largest growing jobs by 2030 (WEF, 2025). According to the U.S. Bureau of Labor Statistics, employment for Project Management occupations in United States is projected to grow by 6% from 2024 to 2034, faster than the average for all occupations (Bureau of Labor Statistics, 2025). Within this category, information technology project managers are among the core subfields, driven by continuous digital transformation and large-scale IT investments.

As evident from the literature, some previous research indicates that limited attention has been given to the careers and career pathways of project managers (Bredin and Söderlund, 2013), and this situation hasn't changed significantly recently (Alkhudary and Gardiner, 2021). A systematic literature review conducted by the last authors identified 42 relevant papers related to the query (career AND "project manag*") OR (career AND "program* manag*") OR (career AND "portfolio manag*") in Scopus and Business Source Ultimate (BSU). To see if the situation has changed in the last few years, we conducted the query TI=(career AND "project manag*") OR TI=(career AND "program* manag*") OR TI=(career AND "portfolio manag*") OR TI=(career AND "product* manag*") in Web of Science database in May 2026, which resulted in only 49 papers, 21 of which in the period from (2020-2026). The exact search in Scopus yields 56 documents, 26 of which were published between 2020 and 2026. Relevant papers are referenced further within the literature review sections. Based on the literature screening, it can be concluded that researchers have devoted limited focus to the careers and career frameworks of project managers, particularly in the information technology (IT) sector.

The present study, based on responses from 98 project managers, aims to enhance the understanding of project management careers, with a particular emphasis on the IT sector. Prior to presenting the empirical findings of this study, the introductory section defines the concepts of career and career path, followed by a review of prior research on project management careers, with particular attention to studies situated within the ICT context.

# 2 State of the Art

## 2.1 Definition of career and career path

As can be found in Alkhudary and Gardiner (2021) career research began in the 1950s, initially in psychology and later expanded to organizational studies. Arthur et al. (1989) define the concept of a career as "the evolving sequence of a person's work experience over time". Baruch (2004) highlights a shift from traditional linear career paths within one organization to shorter, multidirectional moves across multiple organizations, reflecting increased dynamism. Another key distinction is that in the traditional model, the primary responsibility for career development lies with the organization, while in the transformative models, it shifts to the individual (Baruch, 2004).

It is important to distinguish between career paths, which refer to the objective sequence of work experiences, and the subjective perceptions individuals have about their "career progress, personal development, status, or satisfaction" (Walker, 1976). A person's career path may evolve through changes in organization as well as through transitions in the workplace or professional role. This paper focuses on career paths in the context of professional roles.

The present study analyses formalized career paths of project managers within the ICT sector. Accordingly, the focus is placed on careers in the objective sense, rather than on project managers' subjective perceptions of their careers.

## 2.2 Research on project manager careers

Project Management Institute (PMI) defines a project manager as „the person assigned by the performing organization to lead the team that is responsible for achieving the project objectives" (PMI, 2013, p. 555). The role of a project manager is highly complex, as it requires managing ten knowledge areas simultaneously - ranging from scope, time, and cost to quality, risk, resources, communications, procurement, integration, and stakeholder management (PMI, 2013). Moreover, the project manager acts like a maestro - coordinating diverse team members much like a conductor guiding musicians to deliver a harmonious performance (Abramovici, 2001).

Although the role of project manager is clearly defined, previous research (Alkhudary and Gardiner, 2021; Marion et al., 2014; Richardson et al., 2015) indicates that many individuals enter it informally and unintentionally, often advancing from technical positions and reliant on on-the-job experience, soft skill development or simply showing the right attitude - leading to the characterization of project management as an "accidental profession" (Richardson et al., 2015). Moreover, this situation highlights significant gaps in formal career structuring and the education of future project managers.

Based on a systematic literature review followed by focus groups with experienced project managers, Alkhudary and Gardiner (2021) identified that typical project manager career paths often start "by accident" or "by chance", often as a result of demonstrating the right attitude (i.e., the needed competencies for project managers). Mid-career project managers often stay engaged in projects, sometimes shifting to internal consulting between assignments. This reflects organizational reliance and limited career mobility outside project management. They usually end their careers in project management, consultancy, coaching, or their own businesses, rather than advancing to senior roles (Alkhudary and Gardiner, 2021).

According to the research by Chen et al. (2019), the levels of the PM career model are junior staff, junior supervisor, senior supervisor, project manager, and project/program director. They found that communication, teamwork, and organizing emerge as the key competencies across all levels of project management, while at the junior supervisor level, building relationships was ranked highest. Not surprisingly, the research results indicate that senior supervisors value a broader range of skills than junior supervisors, suggesting that more competencies are required at higher levels of project management.

The research conducted by Heilmann (2006) in 2002, through interviews with 30 managers from three Finnish ICT companies and three paper industry firms, supplemented by a short career anchor questionnaire, revealed three main career paths: general manager, specialist, and project manager, all of which start from a specialist role.

Hölzle (2010) recognized four stages in project managers career path, starting from project manager, then senior project manager, project director and program director, and aligned those with the leadership roles. However, the research results show that most of the studied companies do not differentiate between the leadership career path and the project managers' career path and the research advocates for organizations to design career paths for project managers or integrate those paths into the existing career path system.

As claimed by Alkhudary and Gardiner (2021), based on a systematic literature review, a gap exists between career path research and project management, which affects project managers' careers and well-being, as well as talent development in organizations, underscoring the need for future research on project managers' career development. Prior studies on project management career paths and progression rely primarily on respondents' reflections about how their careers developed (Alkhudary and Gardiner, 2021; Marion et al., 2014; Richardson et al., 2015), and not on concrete information about the professional roles that lead to the PM.

Therefore, this study examines the actual unfolding of project managers' career trajectories over the course of their professional lives – from entry-level positions

to their current roles, including all career changes and advancements.

### 2.3 Project manager competencies

As the „maestro“ orchestrating the team to deliver project outcomes, a project manager is required to have a wide range of competencies that can generally be divided into three categories: technical, managerial/ organization and people management skills (Schwalbe, 2019; El-Sabaa, 2001). Many of these skills are referred to as generic skills, which are frequently studied in the context of employability. Generic skills are not only recognized as important for a successful transition from higher education to the world of work (Jackson & Chapman, 2012; Pažur Aničić et al., 2023; Peng et al., 2016), but also for career progress in the workplace, especially within roles such as project managers (Chen et al., 2019; El-Sabba, 2001).

Research conducted by Hölzle (2010), which involved a qualitative study of 20 companies that have implemented career paths for project managers, revealed that 80% of these companies recognize social competence (including communication and cooperation skills) as the most important skill for a project manager. This was closely followed by leadership competence, valued by 50% of the companies surveyed.

According to El-Sabaa (2001), human skills (85.3%) emerged as the most critical for project managers for all sectors (including information system projects), including communication, mobilization, delegation, coping, political sensitivity, self-confidence, and enthusiasm. Conceptual and organizational skills (79.6%) ranked second, covering planning, organizing, goal orientation, holistic project vision, understanding industry context, and problem-solving. By contrast, technical skills (50.46%) were viewed as least essential, involving specialized knowledge of tools, techniques, methods, processes, required technologies, and computer use.

Chen et al. (2019) found that higher competency scores indicate greater importance for effective job performance. At the junior supervisor level, building relationships, communication, and teamwork ranked highest, while at the senior supervisor, project manager, and project/program director levels, communication, teamwork, and organizing were most critical. Overall, communication, teamwork, and organizing emerge as the key competencies across all levels of project management. Not surprisingly, their research as well indicates that senior supervisors value a broader range of skills than junior supervisors, showing that more competencies are required at higher levels of project management.

Borg and Scott-Young (2020) examined the work readiness of junior project managers from the perspective of employers in the Australian construction industry, identifying three key dimensions of readiness: empathetic communication, passion, and construction knowledge. However, graduates were seen as strong in professional presentation, meeting conduct, and use of technology, but weak in seeking help, handling confrontation, applying basic construction knowledge, and professional writing.

Given the focus of this paper on the ICT industry, it is essential to consider the specific characteristics of IT projects. In some sectors, project management is regarded as a temporary managerial assignment (Bredin & Söderlund, 2013), reflecting the inherently temporary nature of projects as endeavours with a defined end. By contrast, the ICT industry is predominantly project-oriented, where project managers frequently oversee multiple projects simultaneously, and their role extends beyond the boundaries of individual projects. Furthermore, IT project management is closely intertwined with IT product management, as project outcomes often take the form of IT products such as software. As Demirel and Camcı (2022) note, project and product scopes frequently overlap, with product lifecycles typically extending well beyond the duration of individual projects.

Although the present study focuses on a single industry, prior research indicates that differences in project management research are not strongly industry-specific. For example, El-Sabaa (2001) reported no significant variation in the relative importance of project management skills across information systems, electricity, and agricultural projects. Similarly, Crawford et al. (2013), based on in-depth interviews with project managers in the engineering, construction, and IT sectors in Australia, concluded that generational differences among project managers were more pronounced than those attributable to industry context. Moreover, the analysis of previous research reveals that authors employ different classifications of project management skills (Borg and Scott-Young, 2020; Chen et al., 2019; El-Sabaa, 2001; Hölzle, 2010), particularly for soft or generic skills. In general, there is a lack of conceptual clarity regarding competencies that are often referred to as soft, generic, transversal, or employability skills/competencies. In this study, we applied a list of generic competencies previously used to examine the importance of students' and recent graduates' generic skills (Pažur Aničić & Bušelić, 2021; Pažur Aničić et al., 2023).

## 3 Methodology

The present study aims to answer three research questions: 1) From which entry positions do IT project managers come?, 2) What are the typical career paths of IT project managers? and 3) Which generic competences are needed for entry level and experienced IT project managers?

This study is based on data collected from a study conducted among IT project managers in Croatian companies, between the beginning of October and the

beginning of December 2024. The survey was distributed via the authors' contacts and social networks, with the support of Project Management Institute Croatia (PMI Hrvatska), and relevant IT associations like Croatian Independent Software Exporters (CISEx), Croatian Employers' Association - Information and Communication Industry Association (HUP-ICT), IT Association at Croatian Chamber of Economy (HGK–IKT), and Agilist IT.

## 3.1 Instrument

The survey was prepared in Google Docs, consisting of four parts: 1) Respondents' professional experience in IT project management, 2) Using PM methodologies, methods and tools, 3) Project manager competencies and 4) AI in project management. The first part of the study, which explores project management practices among IT project managers in Croatia, focusing on their use of traditional and agile methodologies, prevalent tools, and generative AI integration within project management processes, was reported by Pažur Aničić & Bušelić (2025). The current study focuses on respondents' professional careers in IT project management and the generic competencies required for such careers. In particular, the study analyses answers to survey questions related to years of working experience and years of experience in managing IT projects, career paths from early career stages to the present, generic competencies required in their current position, and competencies required for junior project managers. The list of competencies assessed by respondents included 25 skills, identical to those used by Pažur Aničić & Bušelić (2021) in the study on the importance of generic skills of ICT graduates from the perspectives of employers, teaching staff, and students.

## 3.2 Sample

A total of 98 respondents participated in the research. However, not all of them provided detailed information about their career path. The sample for analysis includes 69 project managers from Croatia with experience in leading IT projects. Within the sample, 26 (38%) were females and 43 (62%) were males. Regarding years of experience, three-quarters of respondents (75%) had more than 11 years of work experience, with the largest group (N=26, 38%) having more than 20 years of experience. Regarding years of experience in IT projects, most respondents (N=45, 65%) have 3-15 years of experience. The sample generally covers both junior and senior positions. Another point supporting the representativeness of the sample is that 48 respondents hold certifications or education related to project management. Most of the respondents, 19 of them, hold certification in project management, 8 have a specialised education in PM, 17 have some kind of agile PM certification and 4 have other types of certifications.

## 3.3 Data analysis

Since respondents were allowed to provide information about their career path in any form, preparing the data for analysis involved coding and categorizing their responses. Although there are established theoretical classifications of roles in the ICT field, such as the e-CF professional profile (CEN-CENELEC, 2018) that divides roles into 30 categories, this complexity hinders analysis. Therefore, for this paper, we have developed a simplified classification that includes 10 ICT roles, as shown in Table 1.

These roles encompass positions across software development, non-technical areas, IT/technical roles, and management. Each role is further divided into two levels: entry/junior and senior. The roles of project managers and product managers, which are the primary focus of this research, are analyzed as separate roles.

**Table 1.** Categories of ICT roles

| Category code | Category explanation | Example of roles |
|---|---|---|
| L1-swd | Level 1 - Software development | Software developer, web developer, software engineer, web admin, junior developer |
| L2-swd | Level 2 – Software development | Software developer team lead, solution architect, software implementation consultant, Quality Assurance (QA) |
| L1 -nT | Level 1- non-technical role | Call center agent, business analysis, project associate, specialist, customer service agent, sales representative... |
| L2-nT | Level 2 – non technical role | Team lead, senior/lead consultant, senior billing agent, key account manager, business development manager... |
| L1 IT | Level 1 – IT role | Network specialist, system engineer, IT support specialist, junior infrastructure specialist... |
| L2 IT | Level 2 – IT role | System engineer team lead, IT support team lead, technical lead, ITSM specialist |
| L1-M | Level 1 – management (manager) | Department manager, Operations manager, service delivery manager, QA manager, sales manager, head of department... |
| L2-M | Level 2 – management (director) | Director, QA director, CTO, consulting director, director of IT, director of operations |
| ProjectM | Project management | Project manager, Lead project coordinator, PMO manager, Senior project manager... |
| ProductM | Product management | Product manager, Product owner, Group product manager... |

Another challenge in preparing the data for analysis was related to assigning years to specific positions. For example, some respondents indicated overlapping time frames for different roles (e.g., 2000–2002 for one position and 2002–2005 for another). To ensure that the total duration of a career path was accurately represented, each year was allocated to only one role.

# 4 Results

The study results are presented in two main sections – career paths of project managers and generic competencies needed for PM roles. It is important to emphasize that, at some point in their career, each respondent was in a role of either project or (in a smaller number of cases) product manager. At the time of the survey, 44 respondents were in a project manager position, while 10 were in a product manager position and 15 in other positions.

## 4.1 Project managers career paths

Fig. 1 shows visually the career paths for all 69 respondents, ordered based on the first appearance of a PM role. The vertical axis shows each respondent's career position, while the horizontal axis shows years of career. It is evident that only 10 respondents began their careers in project management positions, likely as junior PMs. Additionally, 9 respondents were not in a PM role in their careers but worked as product managers. Moreover, the visual representation in Fig. 1 shows that once reaching a PM position, a person usually remains there for a longer period.

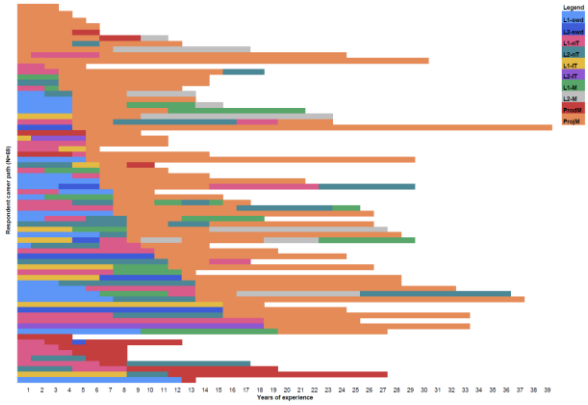


**Figure 1.** Career paths of IT project managers according to years, sorted according to the first appearance of PM role (N=69)

As evident from Table 2, 27,54% of future PMs start their careers as junior software developers (L1-swd) and 27,54% (N=19) in non-technical junior roles (L1-nt), which makes up more than 50% of the total sample. Within the total sample, only 14,49% (N=10) of respondents start their careers as PMs and 4,35% (N=3) as product managers. Even though in total more respondents started their career on level 1 (N=47), smaller number starts on level 2 positions (N=9). In Table 2, the total number of respondents decreases over the years because some of them have not yet reached 5 or 10 years of experience.

**Table 2.** Respondents' entry positions and positions in 5 and 10 years

| Year / Role | Y1 (N) | Y1 (%) | Y5 (N) | Y5 (%) | Y10 (N) | Y10 (%) |
|---|---|---|---|---|---|---|
| L1-swd | 19 | 27.54 | 10 | 15.15 | 1 | 1.75 |
| L2-swd | 3 | 4.35 | 5 | 7.58 | 3 | 5.26 |
| L1 -nT | 19 | 27.54 | 12 | 18.18 | 3 | 5.26 |
| L2-nT | 5 | 7.25 | 7 | 10.61 | 7 | 12.28 |
| L1 IT | 8 | 11.59 | 6 | 9.09 | 1 | 1.75 |
| L2 IT | 1 | 1.45 | 2 | 3.03 | 1 | 1.75 |
| L1-M | 1 | 1.45 | 3 | 4.55 | 5 | 8.77 |
| L2-M | 0 | 0 | 0 | 0 | 5 | 8.77 |
| ProjM | 10 | 14.49 | 17 | 25.76 | 28 | 49.12 |
| ProductM | 3 | 4.35 | 4 | 6.06 | 3 | 5.26 |
| Sum | 69 | | 66 | | 57 | |

Sankey diagram in Fig. 2 shows respondents' entry positions on the left side and their position in the fifth year of their careers on the right side. The term END in visualization reflects the respondents who have less than 5 years of working experience so only the information about their entry position is used. The percentage of PMs rose from 14,49% at career entry to 25,76% in five years. Moreover, it is evident that PMs come from all entry positions, except product management and L2-IT, and only one PM switched a role to product manager in a five-year time span.

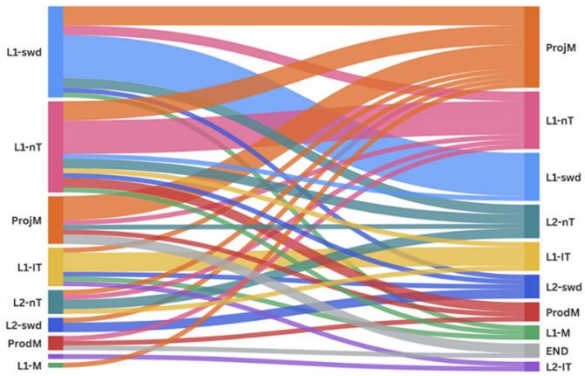



**Figure 2.** Sankey diagram for career change from year 1 to year 5 (created in Flourish, 2024)

Sankey diagram in Fig. 3 shows the situation after 10 years of career. There is an evident growth in number of PMs (49,12%), which accounts for almost 50% of all roles. Moreover, it is evident that the number of respondents working as L1-swd or L1-IT specialists is nearly negligible. Additionally, after 10 years, there are more respondents in managerial positions (L1-M and L2-M). After 5 years of career, there were no respondents with the L2-M role.

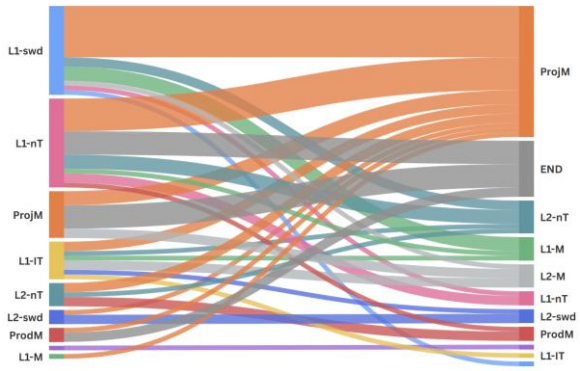



**Figure 3.** Sankey diagram for career change from year 1 to year 10 (created in Flourish, 2024)

Further, we analyse career paths of project managers after the PM role, which is evident from graphical representation in Fig. 1. There is a significant number of respondents who, once they enter the PM role (N=37), remain there, as well as those who become product managers (N=7). Three project and product managers (N=3) entered that role in the year of the survey, so their career path after that could not be observed. There is also a notable number of respondents who pursued other careers after project management (N=15) and did not return to the PM role. Approximately half of them (N=7) advanced to higher management positions, becoming directors (Level 2 – M), either directly or through a product management role or a Level 1 management position. Two respondents moved from PM to Level 1-M (N=2) and remained there, while a few continued their careers as product managers (N=2). There are also a few cases of project managers who transitioned to non-technical positions, either Level 1-nT or Level 2-nT, after their project management careers (N=4). Additionally, some respondents moved from PM to another position and then returned to the PM role (N=6).

## 4.2 Generic competencies needed

To analyse the importance of generic competencies, all responses were included (N=98), not only those from respondents who reported their career paths. During data preparation, however, responses indicating more than five generic competencies were excluded, as the questions were as follows:

Q1: On a scale of 25 generic competencies, please select the 5 that are personally most important to you when managing IT projects.

Q2: On a scale of 25 generic competencies (the same as in the previous question), please select the 5 most important generic competencies for individuals at the beginning of their careers who wish to start a career in IT project management (our students).

Consequently, 87 responses were analysed to identify generic skills required for entry-level PM positions, and 85 to determine the key skills for respondents' current positions. Table 3 presents the overall importance of the ten most relevant generic skills, both for entry-level PM positions and for respondents' current positions.

**Table 3.** The ten highest-rated generic competencies for project managers

| Skills name | Entry position N=87 | Current position N=85 |
|---|---|---|
| 05. Ability to rapidly acquire new knowledge | 58.62 % | 28.24 % |
| 14. Ability to work in a team | 51.72 % | 30.59 % |
| 07. Ability to identify and resolve problems | 48.28 % | 74.12 % |
| 09. Ability to adapt and act in new situations | 47.13 % | 41.18 % |
| 02. Ability to apply knowledge in practical situations | 28.74 % | |
| 20. Taking responsibility and assessing the quality of one's work | 26.44 % | |
| 08. Ability to perform well under pressure | 25.29 % | 40.00 % |
| 12. Ability to manage projects | 22.99 % | 40.00 % |
| 04. Analytical thinking that includes mathematical skills | 21.84 % | 22.35 % |
| 17. Ability to argument and make reasoned decisions | 19.54 % | 24.71 % |
| 15. Ability to motivate people and move toward common goals | | 56.47 % |
| 13. Ability to use time effectively | | 28.24 % |

The survey results revealed that, from the perspective of all 87 respondents, the most valued skills for entry-level project managers are the ability to rapidly acquire new knowledge (58.62%), work effectively in a team (51.72%), identify and resolve problems (48.28%), and adapt and act in new situations (47.13%), emphasizing the importance of agility, collaboration, and problem-solving in early project management careers. For respondents in their current positions, however, the most important skills shift toward the ability to identify and resolve problems (74.12%) and motivate people and move toward common goals (56.47%), followed by adapting and acting in new situations (41.18%), performing well under pressure (40.00%), and managing projects (40.00%). This result highlights the growing need for leadership, resilience, and advanced problem-solving as responsibilities increase with experience. Interestingly, eight of the top ten skills overlap between the entry-level PM positions and respondents' current positions. The only difference is that, at the entry level, the ability to apply knowledge in practical situations (28.74%) and taking responsibility while assessing the quality of one's work (26.44%) are emphasized, whereas later in the career, greater importance is placed on the ability to motivate people and move toward common goals (56.47%) and the ability to use time effectively (28.24%).

# 5 Discussion

This study contributes to a better understanding of project management career paths in the IT industry and generic competencies needed in project management position.

Three main patterns of project management career paths can be observed. The first comprises professionals who begin their careers as software developers and subsequently progress to project management roles. The second includes those who start in entry-level, non-technical positions such as business analyst, project associate, specialist, customer service agent, or sales representative. The third, though less common, involves professionals who enter the field directly as junior project managers. These findings are not unexpected and are consistent with previous research (Alkhudary & Gardiner, 2021; Marion et al., 2014; Richardson et al., 2015), which highlights that many individuals enter project management informally and unintentionally - often transitioning from technical positions and relying on on-the-job learning, soft skill development, or demonstrating the right attitude. However, in the context of the IT industry, it is difficult to speak of 'accidental project managers.' Due to the specific nature of IT projects (Schwalbe, 2019), particularly in the development of software solutions, it is desirable for project managers to possess certain knowledge of programming, client needs analysis, and related areas. Such competencies enable them to make informed decisions on time planning, budgeting, risk management, and other key project aspects. According to Pažur Aničić & Bušelić (2025), based on the analysis of the same sample of respondents as in the present study, the majority of projects typically span 6 to 12 months. The next most common are projects lasting 12 to 24 months. Accordingly, a certain amount of time is required for early-career professionals to experience all phases of the project life cycle in other roles (e.g., as software developers or business analysts) and to become familiar with its various aspects. In this context, it can be argued that, although perhaps unintentionally, one does not become a project manager in the IT industry by chance; rather, the necessary skills are acquired through experience in other entry-level positions.

The analysis of generic competencies required of project managers provides valuable insights into their career paths and progression. When these results are considered in relation to previous studies, certain patterns emerge. Pažur Aničić & Bušelić (2021), drawing on the same set of 25 generic competencies to examine their relevance for ICT graduates, found that the ability to rapidly acquire new knowledge was ranked highest by all three stakeholder groups - teachers, employers, and students. The next two competencies were the ability to identify and resolve problems and the ability to apply knowledge in practical situations. Both employers and students ranked ability to work in teams in fourth place. These findings suggest that acquiring new knowledge is consistently perceived as the most important generic competency, while other highly ranked competencies identified as essential for ICT graduates are equally applicable to future project managers. Little research can be found in the literature, particularly on IT project manager skills. Among the few earlier studies on project management competencies, El-Sabaa (2001) identified desirable traits of project managers across several sectors in Egypt, highlighting human skills as the most prominent, followed by organizational and technical skills. Napier et al. (2009), based on qualitative interviews with 19 professionals, identified Planning and Control as the most prominent skill category for IT project managers, followed by General Management, Leadership, Communication, Team Development, Client Management, System Development, Problem Solving, and Personal Integrity. Therefore, this study contributes to the understanding of important generic skills for project managers, both at the entry level and later as experienced professionals.

Furthermore, the paper demonstrates the changes in the importance of generic competencies in career progression. By linking project managers' career paths with the importance of specific generic competencies for entry PM roles and more mature roles (according to the respondent's current position), this research bridges career theory and competency-based perspectives, thereby extending previous studies on the development of generic skills. In particular, the findings resonate with earlier research on graduates' competencies (Jackson & Chapman, 2012; Pažur Aničić et al., 2023; Pažur Aničić & Bušelić, 2021; Peng et al., 2016), highlighting the relevance of these skills for students preparing for careers as IT project managers. This perspective adds to the literature on graduate employability and offers useful guidance for higher education, indicating key competencies needed for future project managers.

Additionally, the study builds upon and refines previous research (e.g., El-Sabaa, 2001; Napier et al., 2009) by situating competencies within the IT context and stressing the importance of particular generic skills for project managers. Most notably, those are the ability to acquire new knowledge, teamwork, problem-solving, and adaptability to new situations at entry-level positions, as well as problem-solving and motivating others at more senior levels.

# 6 Conclusion

This study enhances the understanding of IT project management careers, from early stages to maturity, by empirically examining career paths within the IT industry, where the concept of the "accidental project manager" may not be entirely applicable. The findings reveal distinct patterns of career entry, which include

transitions from software development roles, non-technical roles, and junior project management positions. This approach provides a more nuanced understanding of how IT project managers develop their professional identities and advance in their careers, while also adding a complementary perspective to previous research on project manager career development (Alkhudary and Gardiner, 2021; Bredin and Söderlund; 2013; Marion et al., 2014; Richardson et al., 2015). Moreover, the existing literature appears to provide limited insight into project management career paths in detail, particularly in terms of specific positions held and the time spent in each.

Despite the recognized theoretical and practical contributions of this study, several limitations should be noted. First, the research is based on a sample from a single country, which limits the generalizability of the findings. However, the IT industry is relatively consistent worldwide, and Croatian companies and project managers frequently participate in both national and international projects of varying size and complexity. Moreover, prior studies on project management careers have also been primarily qualitative, typically based on smaller samples and focused on single-country contexts (Bredin & Söderlund, 2013; Crawford et al., 2013).

A second limitation is the lack of a strong theoretical model on which to ground the study, as research on project managers' career paths, particularly within IT, remains scarce. As a result, the empirical component of this study followed an inductive approach, aiming to identify patterns of career progression that can inform future research. By contrast, the part of the study focused on the importance of generic competencies relied on established frameworks and methodologies already applied in previous research (Pažur Aničić & Bušelić, 2021; Pažur Aničić et al., 2023).

The results of the present study may serve as a basis for developing a project manager career model in the IT industry, grounded in the observed empirical patterns and aligned with the work of Bredin & Söderlund (2013), who conceptualize career models in terms of defined levels, their relation to project complexity, and corresponding competence requirements and training programs.

Moreover, future research could further examine the career paths of project managers entering the profession from different starting positions - for example, how those who began as software developers navigate their careers compared to those from non-technical backgrounds. Such studies could shed light on which knowledge and skills support their progression as project managers and which gaps may hinder their development.

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