UNIVERSITÀ CATTOLICA del Sacro Cuore

DIPARTIMENTO DI SCIENZE ECONOMICHE E SOCIALI

REFINING THE ASSESSMENT OF SOFT SKILLS IN PROJECT MANAGEMENT

Franca Cantoni
Camilla Capogreco
Marco Cerri
Emanuele Patti

Quaderno n. 164/settembre 2024

VP VITA E PENSIERO

Università Cattolica del Sacro Cuore

DIPARTIMENTO DI SCIENZE ECONOMICHE E SOCIALI

REFINING THE ASSESSMENT OF SOFT SKILLS IN PROJECT MANAGEMENT

Franca Cantoni
Camilla Capogreco
Marco Cerri
Emanuele Patti

Quaderno n. 164/settembre 2024

VP VITA E PENSIERO

Franca Cantoni, Dipartimento di Economia e Giurisprudenza, Università Cattolica del Sacro Cuore, Piacenza.

Camilla Capogreco, Facoltà di Economia e Giurisprudenza, Università Cattolica del Sacro Cuore, Piacenza.

Marco Cerri, Facoltà di Economia e Giurisprudenza, Università Cattolica del Sacro Cuore, Piacenza.

Emanuele Patti, Facoltà di Economia e Giurisprudenza, Università Cattolica del Sacro Cuore, Piacenza.

✉ franca.cantoni@unicatt.it

✉ camilla.capogreco01@icatt.it

✉ marco.cerri01@icatt.it

✉ emanuele.patti01@icatt.it

I quaderni possono essere richiesti a:
Dipartimento di Scienze Economiche e Sociali,
Università Cattolica del Sacro Cuore
Via Emilia Parmense 84 - 29122 Piacenza - Tel. 0523 599 342
http://dipartimenti.unicatt.it/dises

✉ dises-pc@unicatt.it

www.vitaepensiero.it

ISBN 978-88-343-5870-2

Abstract. Unlike hard skills, which are characterized by their quantifiability, evaluating soft skills—both in general and specifically within the realm of Project Management (PM) — poses a multifaceted challenge. Context (cultural, social and political-institutional) and project-specific elements in PM play a critical role, influencing situations that activate and shape the manifestation of soft skills, leading to varying assessment scores. A systematic literature review was conducted to identify the most frequently cited soft skills in PM. Subsequently, a novel architectural framework was developed to highlight the critical role of context in facilitating situations that necessitate the activation of various soft skills with distinct nuances. By incorporating contextual variables, this framework offers a more dynamic and accurate assessment of soft skills, tailored to the unique context of each project.

Keywords. Soft skills; Project Management; Measures; Context.
***J.E.L.* classification.** C33, I14, I32, J14

1. Introduction

Traditionally, PM was largely synonymous with technical prowess and proficiency in the intricacies of project methodologies. The emphasis was placed squarely on the mastery of tools, processes, and techniques, often overlooking the human element (Alvarenga et al., 2020). However, the recognition that projects are fundamentally social endeavors, shaped by the collaboration and interaction of diverse individuals (De Lima & Silva, 2020; Brunet, 2022) in ever-changing organizational landscapes (Martinsuo, 2013; Martens & Carvalho, 2017) has given way to a more holistic understanding that integrates technical competence with a rich tapestry of soft skills (Zhang et al., 2013). The contemporary PM landscape acknowledges that effective communication (Ziek & Anderson, 2015), leadership (Ahmad et al, 2022; Sunindijo & Zou, 2013; Drouin et al., 2021), teamwork (Lin & You, 2021) and adaptability are not merely complementary elements but rather essential pillars that support and enhance project outcomes.

Consequently, there has been a growing awareness that delineating the ideal profile for a project manager who can effectively contribute to project success or seamlessly integrate within a team dynamic involves a primary challenge that extends beyond merely assessing technical proficiency. Rather, it requires a comprehensive understanding of their repertoire of soft skills.

Unfortunately, unlike hard skills, which are characterized by their quantifiability and the availability of standardized assessment methods, assessing soft skills—both in general and specifically within the realm of project management—poses a complex challenge (Cimatti, 2016; Heckman & Kautz, 2012; Lacker & Powell, 2011). One primary impediment lies in their intangible and multifaceted nature. While hard skills are delineated by specific tasks, procedures, or knowledge domains, soft skills are often manifested through nuanced behaviors and socio-emotional competencies (Marin-Zapata et al., 2022). Secondly, by definition, soft skills are context-specific, meaning that they can manifest

differently depending on the context in which they are activated. General context in PM plays a critical role, influencing every stage of a project's lifecycle (Pellegrinelli et al., 2007; Buchanan, 1991; vom Brocket et al., 2016). It is multifaceted, encompassing various dimensions such as political/institutional, social, cultural and project-specific elements.

Political factors, including government policies and political stability, can influence project feasibility, funding, and risk management. Political changes may lead to shifts in priorities or regulatory frameworks, requiring project managers to remain adaptable and informed. Engagement with political entities and advocacy groups can also affect project approval and support, particularly in the public sector. The socio-cultural context encompasses social norms, values, and cultural differences that can affect team dynamics, communication, and collaboration. Managing these differences is vital for fostering effective teamwork and ensuring project success. Additionally, considering the impact of the project on the community and environment is essential for sustainable project management, aligning with broader societal values and corporate social responsibility.

Finally, the project-specific context should not be overlooked as it involves understanding the unique goals, scope, and constraints of each project. This context guides the selection of appropriate PM methodologies and tools, ensuring that the project is tailored to its specific demands. The imposition of strict timelines and deadlines by various contextual factors, such as market demands and regulatory requirements, further shapes project execution strategies.

Recognizing and adapting to these contextual factors (general and project-specific) is essential for effective project planning, execution, and successful outcomes. Understanding the context helps project managers to anticipate challenges, leverage opportunities, and make informed decisions that align with the overall strategic goals.

It is precisely the context, both general and specific, that generates a multitude of situations, activating the project manager's

soft skills in varied ways, which we might describe as "situational." This comprehensive awareness and adaptability are essential for navigating the complexities of modern PM, as the same soft skill may exhibit different characteristics, behaviors, or impacts depending on the context that shapes and defines each particular situation.

For example, communication skills might look different in an international team setting compared to a client meeting, or problem-solving skills might vary between a high-pressure emergency and a routine task. Understanding this context-specific nature of soft skills is crucial for accurately assessing them within different settings.

This study addresses the research gap in evaluating and quantifying soft skills in project management by highlighting the critical influence of context, which traditional methods that focus primarily on technical skills have often overlooked. To bridge this gap, we propose a novel framework that incorporates contextual variables, offering a more accurate and dynamic assessment tailored to the unique environments of each project.

To address these challenges, our study delineates two primary objectives. Firstly, we endeavor to ascertain the prevalent soft skills documented in the extant literature pertaining to PM. Secondly - recognizing the crucial role played by the context - we propose an architectural framework designed to make the assessment of soft skills context-sensitive.

The main contributions of our research are twofold. Firstly, we provide a comprehensive review and synthesis of the literature on soft skills in PM, highlighting the most studied ones. This review not only consolidates existing knowledge but also identifies gaps and areas for further research. Secondly, we present an innovative framework for assessing soft skills that incorporates contextual variables. This framework aims to enhance the precision and relevance of soft skill assessment by accounting for the specific situational factors that influence their manifestation and impact.

The originality of this contribution is evident in its novel approach to soft skill assessment, which moves beyond traditional, one-size-fits-all evaluation methods.

The structure of this paper is delineated as follows. Following this introduction, Par. 2 provides a literature review on the primary measures employed in assessing soft skills in PM and explores the various definitions of context as applied to PM. Additionally, it delineates the research questions guiding this study. Subsequently, Par. 3 elucidates the methodology adopted. Following this, Par.4 expounds upon the results, which are subsequently analyzed in Par. 5 offering a new perspective on measurement. Conclusions and their implications ensue, culminating in an exploration of limitations and avenues for further research.

2. Literature Review

Soft skills play a pivotal role in the field of PM, contributing significantly to the success and efficacy of project outcomes (Elkbuli et al., 2024; Sunindijo, 2015; Stevenson & Starkweather, 2010; Azim et al., 2010; Pant & Baroudi, 2008). While technical expertise and domain knowledge are undoubtedly crucial, the ability to effectively navigate interpersonal dynamics, communicate clearly (Strohmeier, 1992), and lead teams with empathy and emotional intelligence is equally indispensable (Ahmad et al., 2022). Moreover, in the intricate landscape of PM (Locatelli et al., 2023), soft skills serve as the glue that binds together diverse stakeholders (Connor et al., 2022), facilitating collaboration conflict resolution and consensus-building (Magano et al., 2020). Effective communication skills enable project managers to convey objectives, expectations, and feedback transparently, fostering alignment and understanding among team members (Elkbuly et al., 2024). Furthermore, adept interpersonal skills empower project managers to navigate the complexities of team dynamics, harnessing individual strengths and mitigating conflicts to maintain cohesion and momentum (Ojiako et al., 2011). Additionally, soft skills are instrumental in leadership within

project contexts (Anderson, 2010). A project manager's capacity to inspire and motivate team members, fostering a culture of collaboration, resilience, and accountability, enhance team engagement and productivity, ultimately driving project success.

While technical competencies are undoubtedly crucial, the ability to effectively apply soft skills is often the differentiating factor between a good project manager and a truly exceptional one (Gustavsson & Hallin, 2014). Recognizing and cultivating these skills is paramount for project managers seeking to optimize performance, foster innovation, and deliver value in today's dynamic and interconnected business environment (Hefley & Bottion, 2021).

However, while technical competencies can be relatively easily measured through academic performance and certification results, the assessment of soft skills proves to be anything but straightforward. It requires nuanced observation (Fixen & Ridge, 2019), feedback from peers and supervisors (Ibrahim et al., 2017), self-assessment (Al-Sa' di A. et al., 2023), and possibly even psychometric assessments (Escolà-Gascón & Gallifa, 2022) or structured interviews (Kallio et al., 2016). Moreover, parameters and metrics for assessing soft skills are ambiguous and can often present challenges that include inconsistencies among different evaluation frameworks (Thornhill-Miller et al., 2023), potential inaccuracies in measurement (Heckman & Kautz, 2012), incomplete assessments that fail to capture the full range of soft skills (Barrera-Orosio et al., 2023), and redundancy in criteria that may overlap or duplicate efforts (Lavi et al., 2021).

The existing literature on the measures and parameters for assessing soft skills in PM reveals a notable gap, as there are no papers specifically addressing this specific topic. Several reasons contribute to this absence. Firstly, soft skills are inherently subjective and context-dependent. Quantifying these skills is challenging because they involve nuanced human interactions and behaviors that are not easily measured with traditional metrics. Historically, PM education and literature have emphasized technical skills and methodologies, such as scheduling, budgeting,

and risk management. These areas are easier to quantify and assess through standardized tests and objective criteria, leading to an underrepresentation of soft skills in research.

Moreover, collecting data on soft skills typically requires qualitative methods that can be time-consuming, subject to biases, and harder to validate compared to quantitative data collection methods. Furthermore, according to our knowledge, since most soft skill evaluations are conducted through self-assessment, the issue of measures and measurement is not as central as it should be in the literature. The recognition of the importance of soft skills in project management is also relatively recent. As the field evolves to acknowledge the critical role of these skills, more research may emerge. However, currently, the body of literature is still catching up to this shift in focus.

Additionally, most approaches used to assess soft skills do not fully or adequately consider the role of context, which can be historically defined according to a multitude of facets, as highlighted by several authoritative scholars. In 1992 Weber argued that the "political and institutional context" refers to the structures of authority and systems of governance within a society, including the formal institutions, legal frameworks, and informal norms that shape political behavior and decision-making (Baert, 2007).

According to Bronfenbrenner (1979) context as "environment" refers to the set of physical and material conditions in which an event occurs or an activity develops. It includes natural, built, and technological elements that influence behavior and interactions. The definition given concerns cultural, political-institutional and social aspects. Indeed, always according to the same author general context indicates the broad and inclusive environment in which events or actions occur, including economic, political, cultural, and social aspects that influence situations.

Goffman gives the context a more markedly "social" connotation where he claims that context as situation describes the immediate and specific circumstances in which an action or event occurs, considering temporal, spatial, and relational factors

(Goffman, 1964). Durkheim argues that the "social context" refers to the collective norms, values, beliefs, and practices that are shared by a group or society and that shape individual behaviors and interactions (Malik & Malik, 2022).

Bandura in 1986 identified the "individual" and "cultural" context that refers to the personal characteristics and experiences of an individual that influence their behavior and perceptions. It includes factors such as personality, cultural background, and personal history (Bandura, 1986) while Lewin described the dynamics and interactions within a group of people, including social norms, roles, power relations, and group cohesion as "group" context (Lewin, 1947). According to Tylor "cultural" context refers to the complex whole which includes knowledge, beliefs, art, morals, law, customs, and any other capabilities and habits acquired by man as a member of society (Tylor, 1871).

Drawing from these seminal definitions, we aim to align them with contemporary definitions used in current PM research (Tab. I).

Context definition	**Author(s)**
Political /Institutional	Packendorff, 1995; Martinsuo & Geraldi, 2020; Ben Mahmoud-Jouini, Midler & Silberzahn, 2016; Müller, Martinsuo & Blomquist, 2008; Morris & Geraldi, 2011
Social	Martinsuo & Geraldi, 2020; Martinsuo & Ahola, 2022; Besner & Hobbs, 2008; Joslin & Müller, 2015; Zeivots, Cram & Wardak, 2023; Müller, Martinsuo & Blomquist, 2008; Martinsuo, 2013; Manning, 2008; Morris & Geraldi, 2011; Fellows & Liu, 2016
Cultural	Kenny, 2003; Morris & Geraldi, 2011; Fellows & Liu, 2016

Table 1: Definition of "context" in PM reconducted to the classics

Several scholars have emphasized the importance of political and institutional factors in PM. Packendorff (1995) discussed how political environments profoundly influence the tasks and outcomes of projects. He argued that projects do not exist in a vacuum but are embedded within a broader political landscape that affects their design, execution, and success. Political factors such as government policies, regulatory frameworks, and political stability can dictate project feasibility, funding, and risk management strategies. For example, changes in government or shifts in policy priorities can lead to alterations in project goals or timelines, necessitating a high degree of adaptability from project managers.

Martinsuo and Geraldi (2020) expanded on this by exploring the unique conditions under which project portfolios are managed. They highlighted the interplay between internal and external political factors, noting that project managers must navigate not only the internal politics of their organizations but also the external political environment. Internal political factors might include power dynamics, resource allocation conflicts, and strategic priorities within the organization. External political factors could involve interactions with governmental bodies, regulatory agencies, and other external stakeholders. The authors argued that successful project portfolio management requires a keen understanding of these political landscapes to align projects with broader organizational and political goals.

Ben Mahmoud-Jouini, Midler, and Silberzahn (2016) focused on the role of stakeholder mobilization in building supportive political contexts for projects. They emphasized that effective stakeholder engagement is crucial for garnering the political support needed for project success. This involves identifying key stakeholders, understanding their interests and influence, and actively engaging them to build a coalition of support. By mobilizing stakeholders, project managers can create a favorable political environment that facilitates project approval, funding, and sustained support throughout the project lifecycle.

Müller, Martinsuo, and Blomquist (2008) further examined how institutional factors and governance structures influence project success and methodologies. They argued that the institutional context, including formal governance structures, organizational policies, and established procedures, provides a framework within which projects are executed. Effective governance structures can enhance project performance by providing clear guidelines, accountability mechanisms, and decision-making frameworks. Conversely, rigid or poorly designed governance structures can hinder project flexibility and responsiveness, leading to suboptimal outcomes.

Morris and Geraldi (2011) added to this by exploring the broader institutional factors that shape project management practices. They highlighted how institutional norms, values, and routines influence the way projects are conceived, planned, and executed. Institutional factors such as corporate culture, industry standards, and historical precedents can shape project methodologies and impact their success. The authors stressed the importance of aligning project management practices with the institutional context to ensure that projects are not only technically sound but also institutionally viable.

Also, the social dimension of PM has been extensively studied, recognizing the critical role of interpersonal and organizational dynamics.

Martinsuo and Geraldi (2020) examined the role of social interactions within project portfolios. They emphasized that managing a portfolio of projects is not just a technical task but also a social one. Project managers must navigate relationships with various stakeholders, including team members, senior management, and external partners.

Martinsuo and Ahola (2022) extended this discussion by addressing multi-project management in inter-organizational contexts. They explored how projects that span multiple organizations require project managers to engage with a broader array of stakeholders, each with their own interests and objectives. The study highlighted the importance of building strong inter-

organizational relationships and networks to facilitate coordination and collaboration across organizational boundaries.

Besner and Hobbs (2008) conducted a comparative study on practices between innovative and non-innovative projects, focusing on the social dynamics at play. They found that innovative projects often require more intensive social interactions due to their inherent uncertainty and the need for creative problem-solving. In contrast, non-innovative projects may follow more standardized procedures with less emphasis on social dynamics. The study underscored that fostering a collaborative and open social environment is particularly critical for innovative projects, as it encourages experimentation and the exchange of new ideas.

Joslin and Müller (2015) investigated how project governance and social factors impact project success. They argued that effective project governance structures must consider the social context in which projects operate. This includes understanding the social norms, values, and expectations of stakeholders and ensuring that governance practices facilitate rather than hinder effective social interactions. The study demonstrated that governance practices that promote transparency, accountability, and stakeholder engagement are associated with higher project success rates.

Zeivots, Cram, and Wardak (2023) highlighted the importance of stakeholder engagement for sustainable project outcomes. They emphasized that engaging stakeholders early and often throughout the project lifecycle is crucial for building trust, securing buy-in, and ensuring that projects meet the needs and expectations of all stakeholders. The study pointed out that effective stakeholder engagement requires project managers to possess strong social skills, such as empathy, active listening, and the ability to negotiate and mediate conflicts.

Contributions by Martinsuo (2013), Manning (2008), and Fellows and Liu (2016) further enriched the understanding of social contexts in PM. Martinsuo (2013) explored how organizational practices and social interactions influence project management processes and outcomes. Manning (2008) provided a

structuration perspective on embedding projects within multiple social contexts, highlighting how social practices shape project execution. Fellows and Liu (2016) examined cross-cultural interactions in project management, emphasizing the need for cultural competence to navigate the social complexities of international projects.

To conclude, the cultural context in PM is a vital dimension that influences project strategies, decision-making processes, and team dynamics. The literature underscores the need for project managers to develop cultural competence and adapt their management styles to align with the cultural norms and values of their organizational and social environments.

Kenny (2003) delved into how organizational and cultural contexts affect project strategies and implementation. He argued that organizational culture significantly influences how projects are planned and executed. Morris and Geraldi (2011) expanded on this by exploring the impact of cultural norms and institutional values on PM. They pointed out that cultural norms, which are the unwritten rules and behaviors expected within a society or organization, can significantly affect project execution. These norms dictate how team members interact, communicate, and make decisions. Institutional values, which are the fundamental beliefs and principles upheld by an organization or society, also play a crucial role.

Fellows and Liu (2016) investigated sensemaking in cross-cultural project contexts, emphasizing the importance of cultural understanding in managing international projects and construction networks. Sensemaking refers to the process by which individuals interpret and give meaning to their experiences. In cross-cultural projects, sensemaking becomes particularly complex due to the diversity of cultural backgrounds among team members. Fellows and Liu argued that project managers need to be adept at interpreting and bridging cultural differences to foster effective communication and collaboration. They highlighted that cultural misunderstandings and misinterpretations can lead to conflicts, delays, and even project failures. Therefore, cultural competence—

understanding, respecting, and effectively working with cultural differences—is crucial for managing international projects successfully. Their study also pointed out that cultural differences impact various aspects of project management, such as leadership styles, conflict resolution approaches, and team dynamics.

While the broader social, political/institutional, and cultural contexts provide a vital backdrop for understanding the environment in which a project operates, Schön (1983) focuses on the "specific context" that focuses on particular and detailed aspects of an environment or situation, providing an in-depth view of immediate conditions and circumstances that is the "project-specific context" that brings in the nuanced details crucial for successful project execution (Martinsuo & Geraldi, 2020).

Understanding the various elements of a project is crucial for its successful execution. These elements, including the project background (Besner & Hobbs, 2008, Bucher, et al., 2007), information technology elements (Ives, 2005), stakeholders (acceptance criteria) (Karlsen, 2015), constraints (time, budget, quality, resources, …) (Atkinson, 1999), risk management (potential risks and mitigation strategies) (Monteiro de Carvalho & Rebechini Junior, 2015), and the stages of the project's life cycle (Pinto, J. K. & Slevin, D. P. (1988), each play a distinct role and influence the project in different ways.

Therefore, balancing both the broader and specific contexts ensures comprehensive and effective PM. From these foundations, we derive our research questions, which are as follows:

RQ1. *What are the most frequently cited soft skills in PM literature?*

RQ2. *How to overcome the limitations of applying static measure systems in dynamic PM contexts?*

3. Methodology

One of the primary objectives of this research was to identify the predominant soft skills documented in the existing literature

concerning PM. The initial phase of the study involved a systematic approach to keyword selection, encompassing a comprehensive range of terminology related to soft skills.

The intentional selection of Scopus as the primary database, coupled with the inclusion of document types such as articles and early access materials, was a methodological decision aimed at facilitating a thorough and exhaustive review process. To further enhance the comprehensiveness of the review, inclusion criteria were strategically formulated to concentrate on specific Scopus categories pertinent to the fields of management, education, business, and engineering. By doing so, the interdisciplinary nature of the research endeavor was accentuated, allowing for a holistic examination of relevant literature spanning multiple domains. Moreover, the establishment of language criteria, with a preference for English-language publications, was intended to promote inclusivity within the global academic community. To answer RQ1 we will apply the following string: *(("project management" AND ("soft skill*" OR "transversal skill*" OR "personal skill*" OR "interpersonal skill*")).*

The abstracts of the papers retrieved through the search string will undergo a screening process to determine their eligibility. These abstracts will be independently reviewed by the authors and filtered based on their relevance to the research objectives. Papers that meet the criteria will be read in full, and the soft skills mentioned within them will be mapped accordingly. Additionally, a representation of these findings will be created using VOSviewer.

Furthermore, to ensure the paper has both scientific and practical relevance, the soft skills identified in the literature will be aligned – through a coding activity - with the People Competence Areas defined by the International Project Management Association (IPMA). The IPMA framework was chosen due to its comprehensive and widely recognized competency-based approach, which offers a robust structure for evaluating and developing PM skills. The IPMA's emphasis on People Competence (PC) is particularly pertinent, as it provides a detailed categorization of soft skills essential for effective PM. This

alignment not only enhances the practical applicability of our findings but also ensures consistency with established industry standards.

To conduct the coding activity, the following procedure will be employed: first, each IPMA skill within the PCAs will be identified. Next, the soft skills to be integrated will be defined based on the reference papers. A match will be created between the integrated soft skills, using the definitions found in the reference papers, and the corresponding IPMA soft skills. This process will ensure that each soft skill from the literature will be accurately mapped to its equivalent in the IPMA framework, facilitating a coherent and structured analysis of the soft skills relevant to PM.

(Coding activity included in the supplementary material)

Futhermore, since the context—understood as politic and institutional, cultural and social—affects the manifestation and expression of soft skills, we will consider it a distinctive feature of our measurement approach. Consequently, the second objective of the research will focus on making the measurement process context-sensitive.

The IPMA employs a structured classification system with various measures, aiming to standardize and streamline PM practices. However, this approach is inherently static and rigid, which may not align well with the dynamic and evolving nature of real-world contexts. The discrepancy between the static classification of IPMA measures and the fluid, dynamic characteristics of practical contexts can lead to suboptimal outcomes. Specifically, applying stringent classifications of measures associated with PCAs within a dynamic context can yield only partially satisfactory results. When these characteristics are constantly changing, as is often the case in dynamic environments, the rigid application of pre-determined classifications can constrain the adaptability and responsiveness needed for accurate and meaningful analyses. Therefore, it is essential to recognize the limitations of applying static classification systems in dynamic and processual contexts. A more flexible and adaptive approach, which allows for continuous refinement and adjustment of measures

based on evolving contextual factors, may be more effective. This adaptability can enhance the relevance and accuracy of the analyses and improve the overall quality of the outcomes.

To work on RQ2 we will rely on the assumption that, as depicted in Figure 1, the connections between measures and PCAs may manifest in two distinct ways: a measure can be associated with multiple PCAs, and conversely, a PCA can concurrently be linked with several measures giving rise to reticular relationships.

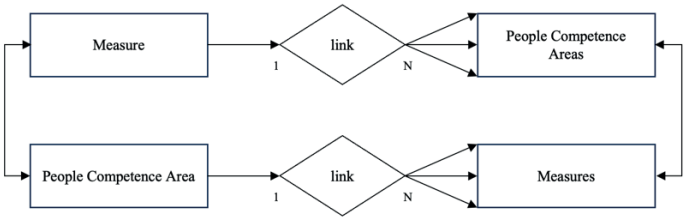


Figure 1. Reticular relationships between measures and PCAs

This entails to consider that IPMA specifies a total of 223 measures for the competence area "People" and it's crucial to acknowledge potential connections (referred to as links or dependencies) between different measures and skills.

In this classification, we eliminate the notion of confining the measures within defined blocks and instead consider the overall list as defined by the IPMA. By utilizing the enriched soft skill set as “mediators”, we will define a new architectural framework that associates the measures with the PCAs. This endeavor serves to expedite the resolution of the previously delineated quandary, fostering a heightened efficacy and coherence in the interconnection between measures and PCAs. Simultaneously, it safeguards the maintenance of pertinence and integrity.

Given that measures strictly categorized—as proposed by the IPMA—can marginally overlap and influence each other, and that a single measure may pertain to disparate skills, a dual-directional matching process will be implemented.

To construct the network of relationships between measures and PCAs, three steps will be defined:

- linking soft skills to PCAs (step1): the initial step will involve identifying and linking each skill to the corresponding PCAs as defined by the IPMA framework;
- assigning the mediating role to soft skills (step 2): the second step will be crucial in bridging the gap between PCAs and measures. In this phase, each skill will be assigned the role of a mediator. By doing so, soft skills serve as the intermediary entities that facilitate the connection between the PCAs and the respective measures. This mediation is essential for establishing coherent and meaningful relationships within the network;
- creating the network of relationships (step 3): the final step will involve synthesizing the information from the previous steps to construct a network relationship between the PCAs and the measures. With soft skills functioning as mediators, this step is aimed to integrate all components into a cohesive network, illustrating the interdependencies and interactions between PCAs and measures.

By following this structured approach, it will be possible to create a robust network that not only delineates the relationships between measures and PCAs but also highlights the pivotal role of soft skills as mediators.

4. Results

As shown in Figure 2, a total of 182 papers were initially identified. Upon a detailed review of the abstracts, it was determined that only 54 papers were directly relevant to the specific objectives outlined in our research framework. A comprehensive analytical examination of these selected papers enabled the systematic identification and mapping of 82 distinct soft skills within the context of PM.

The sheet "paper code" (**included in the supplementary material**) provides a comprehensive synthesis of the outcomes, encompassing 54 papers ascertained from the literature that

correspond to the research query, following scrutiny of their abstracts.

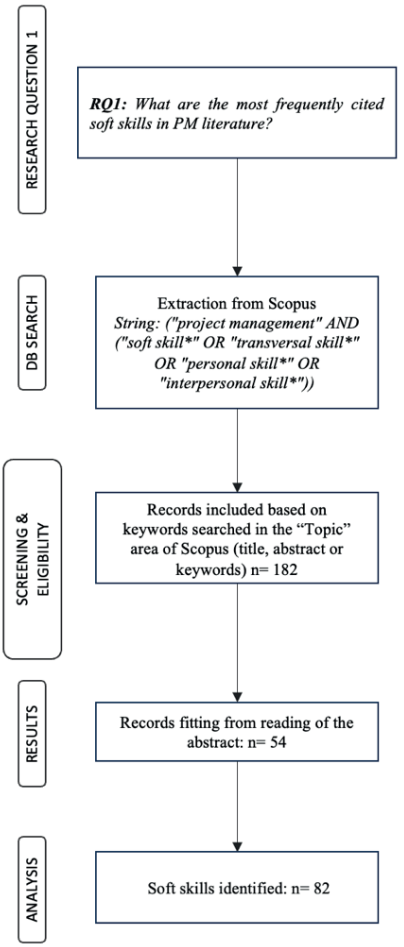


Figure 2. Flow-chart RQ1

Using VosViewer, Fig. 3 provides a visualization of the 82 identified soft skills.

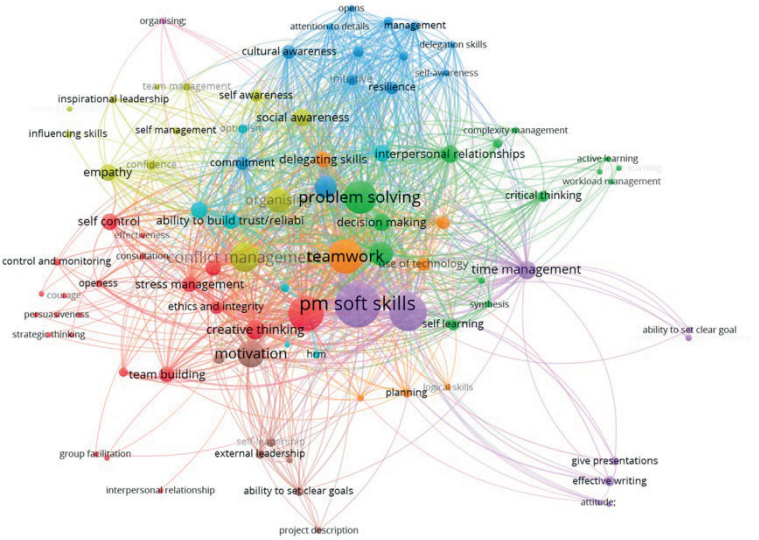


Figure 3. Soft Skills found with the literature review

The sheet soft skills mapped (included in supplementary materials) provides a comprehensive summary of the soft skills documented in the literature, along with the corresponding paper IDs for each soft skill. This structured organization facilitates a systematic exploration of the diverse range of soft skills discussed in the referenced scholarly works. Then, we undertook a meticulous process of aligning the identified soft skills with the 10 PCAs delineated by the IPMA. This process, conducted with the expert guidance of a certified professional, ensures the accuracy and relevance of the mappings. The resulting mappings are detailed in the sheet "PCAs & soft skills reconduction" (included in supplementary materials), providing a clear and structured correspondence between the identified soft skills and the established IPMA competence domains. This mapping work has significantly enhanced the soft skill set delineated by the IPMA.

As far as RQ2 a systematic alignment was conducted between the 223 identified measures and the 10 PCAs (considering the

integrations performed) by using the array of soft skills as mediators. Therefore, it was considered advisable to identify an architectural approach that effectively interconnects the 223 measures with the 10 PCAs. The complete procedure and the resulting architectural framework are elucidated in Fig. 4. The architectural framework - at the core of the alignment process - is based on the networked relationship between PCAs and measures. This endeavor was undertaken with the dual objectives of enhancing the user-friendliness of the measures-PCA set while concurrently preserving their substantive significance and acknowledging the contextual factors.

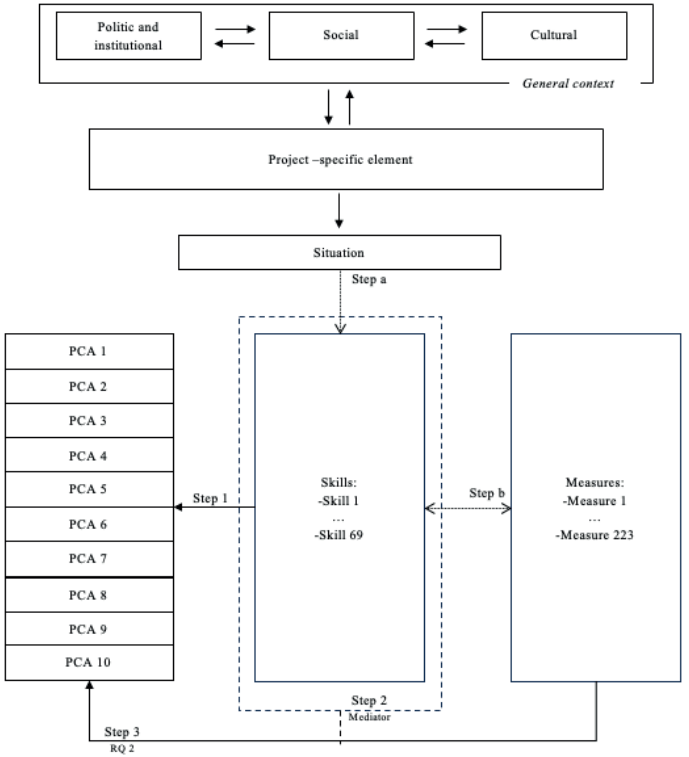


Figure 4: The architectural framework: matching process between soft skills, measures, and PCA.

The measurement process is not an isolated procedure but is embedded within a general context that both influences and is influenced by the specific context, subsequently triggering a series of related situations. Each situation can activate soft skills in a different way, thereby influencing the overall dynamics and outcomes of the project. The activated soft skills will allow the measures to manifest differently, thereby recognizing their versatility or multifaceted nature (step b). The architectural framework is designed as follows: the first column lists the 10 PCAs identified by IPMA; the second column includes the skills previously linked to the PCAs (step 1); the last column lists the 243 measures, without considering how IPMA has categorized them into PCAs in the ICB4 (see the sheet “Architectural Framework” in supplementary material).

As far as the functioning, the soft skills activated by each specific situation will be recognized the role of "mediators," as they facilitate the connection between measures and PCAs, creating a network structure that reflects the multiple interconnections that can arise in the context (see Figure 4).

This framework not only represents the existing relationships between the various measures and PCAs but also allows for the dynamic assessment of measures according to the activated soft skills enacted by the context. The following is a concrete example (see Figure 5) that highlights how the role and characteristics of the general context (political-institutional, social, and cultural) influence the project and, in turn, are influenced by it. Each project, characterized by specific elements, generates various situations in which soft skills can manifest differently, assume varying degrees of importance, and consequently hold different values (or scores). To concretize this, consider the measure "Demonstrates ownership of both positive and negative results" as an example. This measure, following the mapping activity, falls into three different PCAs listed below (4.1.1; 4.2.2; 4.4.7). The manifestation (and consequently evaluation) of this measure will vary depending on the situation in which it arises.

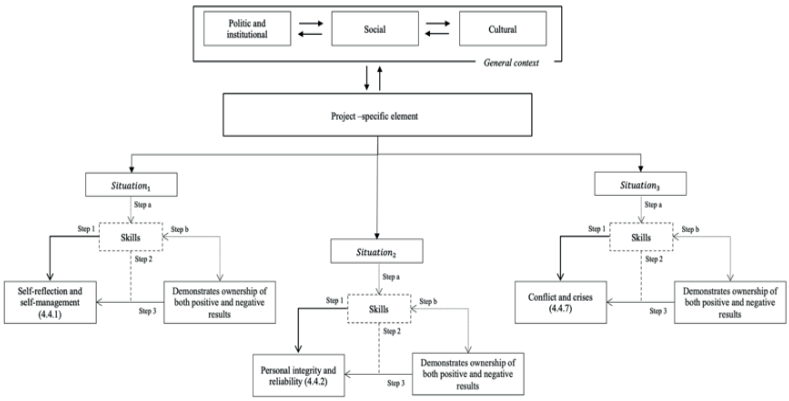
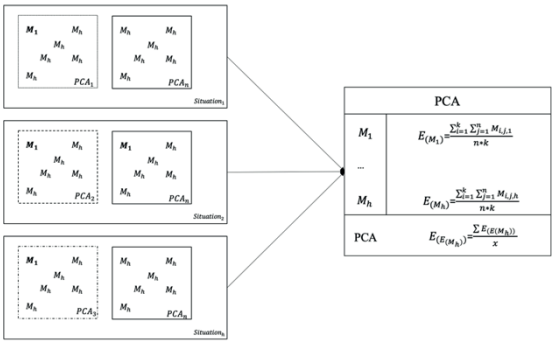


Figure 5. An example of the architectural framework applied to three different contexts

Regarding the evaluation process (see Figure 6), each individual will receive a specific assessment for each PCA. The measures associated with a particular PCA will be evaluated uniformly.



Legend:

M_h= Any measures

k = N. situation

n = N. PCAs

x = N. PCA measures

Figure 6. The evaluation of PCA

To account for the interconnectedness between PCAs and measures during the evaluation phase, a backward approach was adopted. The measure, which in the preceding phase had been linked to multiple PCAs, is, in the evaluation phase, incorporated

into the PCA under which IPMA classified it in the ICB4. This process allows each measure to accumulate multiple assessments, and a unique rating for each measure is then derived by calculating the arithmetic mean of these assessments. The use of the mean in data analysis provides a comprehensive assessment by incorporating all data points and moderating the impact of extreme values. By balancing the effects of positive and negative outliers, the mean offers a single, straightforward metric that accurately reflects the overall dataset, making it an effective tool for evaluation.

Here follows an example:

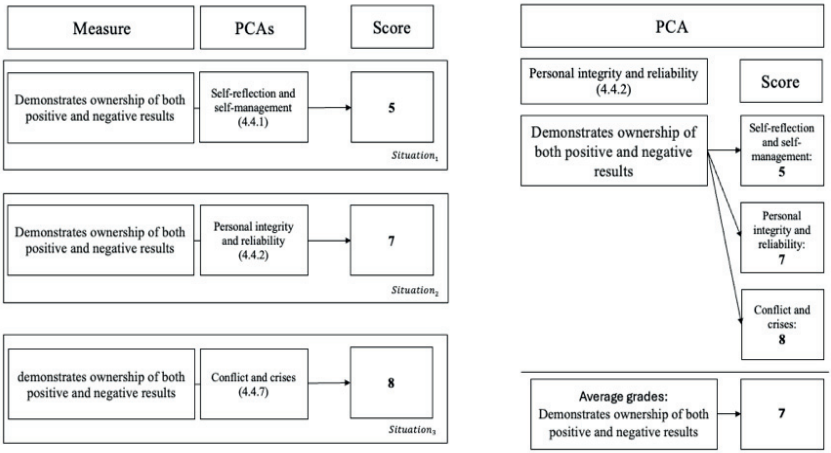


Figure 7. An example of PCA (i.e. personal integrity and reliability) evaluation

To determine an overall numerical assessment for each PCA, the average value of the ratings for all measures comprising that specific PCA is calculated. This method integrates both the evaluation of individual measures and the interrelation between PCAs and measures, thereby providing an accurate representation of the competencies assessed.

5. Analysis

As far as RQ1, the literature review on soft skills has allowed the identification of 82 additional skills compared to those mentioned in the People Competence Areas. Through the coding activity, some soft skills found in the literature have been traced back to and aligned with the existing soft skills mapped by IPMA. The following is a concrete example (see Table II):

PCA	**Soft skill IPMA**	**Paper Title Soft skill integrated**	**Soft skill integrated**	**Definition Soft skill integrated**
Leadership 4 4 5	*Personal self - awareness*	Impact of the project manager's transformational leadership, influenced by mediation of self-leadership and moderation of empowerment, on project success Authors: Ahmad M.K.; Abdulhamid A.B.; Wahab S.A.; Nazir M.U.	*Self-leadership*	"…self-leadership is argued to be a leadership technique in its own right, thus motivating themselves and monitoring their own performance" (Hauschildt and Konradt, 2012).
Resourcefulness 4 4 8	*Use different ways of communicating and different styles for*	Soft skills of construction project management professionals and project success factors: A	*Communicative skills*	"Project practitioner understands explicitly the content of communication. Project practitioner maintains effective

	effective communication	structural equation model Authors: Zuo J.; Zhao X.; Nguyen Q.B.M.; Ma T.; Gao S.		formal lines of communication in the project. Project practitioner maintains effective informal lines of communication involved in the project."
Result orientation 4 4 10	*Efficiency, effectiveness and productivity*	Project managers as knowledge workers: Competencies for effective project management in developing countries Authors: Amoah A.; Marimon F.	*Time management*	"…the ability to manage scarce resources and monitor time overruns and other ad hoc situations..." (Abbasi and Al-Mharmah 2000; PMI 2017)

Table II: Coding activity between soft skills and PCAs

In Figure 8, the integration made in addition to those proposed by IPMA is shown. PCAs are weighted according to the number of citations received by the soft skills they refer to (in blue the PCAs not integrated; in orange the PCAs integrated with the literature review).

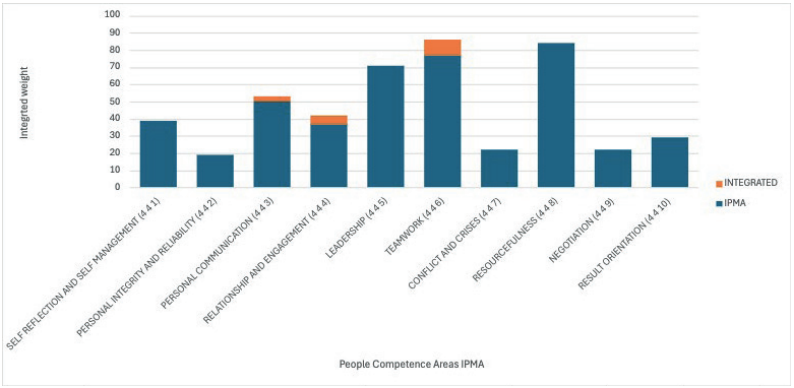


Figure 8: Integration made to IPMA competence areas

The integrated PCAs are personal communication, relationship and engagement and teamwork.

This activity holds significant relevance for several reasons. First, involving a certifying expert added an additional layer of validation, ensuring that the alignment of soft skills with IPMA's competence areas meets professional and industry standards. This endorsement enhances the credibility and acceptance of the framework among practitioners and stakeholders. Furthermore, the reconduction process ensures that soft skills, which are critical for effective PM, are systematically mapped to IPMA's competence areas. This comprehensive integration allows for a more holistic evaluation and development of PM capabilities, acknowledging the importance of both technical and interpersonal skills. Additionally, the enrichment of IPMA's 10 PCAs with updated and contextually relevant soft skills, as detailed in the sheet “PCAs & soft skills reconduction” (included in supplementary materials) , reflects contemporary developments and insights from recent literature. This ensures that the competence areas remain current and relevant, addressing the evolving needs of the PM field.

The alignment of soft skills with established PCAs serves to fortify the evaluative framework within PM contexts, thereby imbuing it with both comprehensiveness and pragmatic utility. This alignment engenders heightened versatility in application

across a spectrum of project management scenarios. Furthermore, this endeavor fosters targeted initiatives for the cultivation of requisite soft skills. The delineation of precise correspondences between individual soft skills and competency domains empowers organizations and individuals to channel their training and developmental endeavors with precision, thereby fostering enhanced project outcomes.

As for RQ2, we propose an architectural framework that overcomes the limitations of static approaches to measurement. Our architectural framework offers several key strengths:

- it addresses the need for a networked relationship between measures and People Competence Areas (PCAs). This is represented through an N relationship, reflecting the complex interdependencies within and between the contexts;
- it captures the dynamic nature of measures, which can vary depending on the soft skills activated by the specific context. The context acts as an "activator" influencing how these measures are expressed.
- it recognizes the pivotal role of context in shaping the outcomes of the measurement process. Different contexts activate soft skills in varied ways, highlighting the importance of considering contextual factors in any assessment.

By overcoming the limitations of static measurement approaches, our architectural framework provides a more nuanced and adaptable method for evaluating soft skills in PM.

In the current Section, we discuss the main findings for the estimates of our benchmark model (Section 5.1), as well as the results from the estimates by subgroup (Section 5.2) with the aim of identifying the profile of disadvantage in Italy, with a particular attention to material deprivation and disability.

6. Conclusion

This research addresses the inherent limitations of traditional, static approaches to assessing soft skills by proposing a novel framework that incorporates contextual variables into the evaluation process. Our findings suggest that a dynamic and context-aware assessment model provides a more comprehensive and accurate representation of an individual's competencies.

The proposed framework allows for a nuanced understanding of soft skills by recognizing the influence of varying contexts on their manifestation and effectiveness. By integrating contextual variables, the assessment process becomes more reflective of real-world scenarios where soft skills are applied, thereby enhancing the validity and reliability of the evaluation.

Furthermore, this research contributes to the field by offering a methodological advancement that bridges the gap between theoretical constructs of soft skills and their practical assessment. The use of contextual variables ensures that the assessment is adaptable and sensitive to the specificities of different environments, leading to more personalized and relevant evaluations.

7. Implication

It becomes evident that the evolving professional landscape of PM necessitates a nuanced understanding of the dual competencies demanded of project managers and other business professionals, wherein proficiency in both technical acumen and interpersonal skills is imperative for success. However, when it comes to evaluation, unlike technical competencies, which often possess tangible benchmarks and standardized assessment criteria, the multifaceted nature of soft skills presents challenges in devising accurate and objective measurement. Moreover, contextual variations and subjective interpretations further compound the difficulty in achieving a standardized assessment framework.

Despite these challenges, our framework represents a significant step forward in the assessment of soft skills, offering a robust, flexible, and contextually informed approach that better captures the complexities of human competencies. This advancement holds the potential to improve educational practices, inform policy decisions, and enhance workforce development strategies.

8. Limitation

While our framework aims to integrate contextual variables, the theoretical nature of this study means that we have not yet explored how these variables interact with soft skills in diverse project settings. Empirical research is necessary to understand the nuances and complexities of these interactions.

9. Further avenues for research

While our framework accounts for contextual variables, future studies could refine and adapt this framework for specific industries or types of projects. This would involve testing and validating the framework in diverse project settings to enhance its applicability and robustness. Moreover, given the theoretical scope of this study, the generalizability of our findings across different industries and project types is yet to be established. Empirical studies across various sectors will be crucial to determine the broader applicability of our proposed framework.

References

Ahmad, M. K., Abdulhamid, A. B., Wahab, S. A., & Nazir, M. U. (2022), 'Impact of the project manager's transformational leadership, influenced by mediation of self-leadership and moderation of empowerment, on project success', *International Journal of Managing Projects in Business*, **15**(5), pp. 842-864.

Al-Sa' di, A. et al. (2023), 'Assessing Educators' Soft Skills: Developing a Self-Assessment Instrument', *Administrative Sciences*, **13**(9), pp.1-21.

Alvarenga, J.C. et al. (2020), 'The project manager core competencies to project success', *International Journal of* Managing Projects in Business, **13**(2), pp.277-292.

Anderson, B. (2010), 'Project leadership and the art of managing relationships', *American Society for Training and Development*, **64**(3), 58-63.

Atkinson, R. (1999),'Project management: cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria', *International Journal of Project Management*, **17**(6), pp. 337-342.

Azim, S., Gale, A., Lawlor-Wright, T., Kirkham, R., Khan, A., & Alam, M. (2010), 'The importance of soft skills in complex projects', *International Journal of Managing Projects in Business*, **3**(3), pp.387-401.

Baert, P. (2007), 'Contextualizing Max Weber', *International Sociology*, **22**(2), pp.119-128.

Bandura, A. (1986), 'Social foundations of thought and action', *Englewood Cliffs*, NJ

Ben Mahmoud-Jouini, S., Midler, C., & Silberzahn, P. (2016), 'Contributions of design thinking to project management in an innovation context', *Project Management Journal*, **47**(2), pp.144-156.

Besner, C., & Hobbs, B. (2008), 'Discriminating contexts and project management best practices on innovative and noninnovative projects', *Project management Journal*, **39**(1_suppl), S123-S134.

Besner, C., & Brian, H. (2008), 'Project Management Practice, Generic or Contextual: A Reality Check', *Project Management Journal*, **39**(1), pp.16–33.

Brady, T., & Maylor, H. (2010), 'The improvement paradox in project contexts: A clue to the way forward?', *International Journal of Project Management*, **28**(8), pp. 787-795.

Bronfenbrenner, U. (1979), 'The ecology of human development: Experiments by nature and design', Harvard University Press.

Brunet, M. (2022), 'On the relevance of theory and practice in project studies', *International Journal of Project Management*, **40**(1), pp.22-24.

Buchanan, D. A. (1991), 'Vulnerability and agenda: context and process in project management', *British Journal of Management*, **2**(3), pp.121-132.

Bucher, T. et al. (2007), 'Situational Method Engineering On the Differentition of "Context" and "Project Type"', *IFIP International Federation for Information Processing*, **244**, pp. 33-48.

Cimatti, B. (2016), 'Definition, development, assessment of soft skills and their role for the quality of organizations and enterprises', *International Journal for Quality Research*, **10**(1), p.97.

De Carvalho, M. M., & Rabechini Junior, R. (2015), 'Impact of risk management on project performance: the importance of soft skills', *International Journal of Production Research*, **53**(2), pp.321-340.

De Lima, L.F. and Silva, S.Q. (2020), 'Emotional intelligence and success of project management: the mediating effect of interpersonal skills', *International Journal of Project Organisation and Management*, **12**(1), pp.54-73.

Drouin, N., et al. (2021). Balancing leadership in projects: Role of the socio-cognitive space. Project Leadership and Society, 2, 1-12

Elkbuli, M., Azmy, N., & Lee, C. K. (2024), 'Enhancing project manager communication soft skills and risk management practices in Libyan oil and gas construction projects: the role of

experience', *Journal of Engineering, Design and Technology*.
Ercikan, K., & Oliveri, M. E. (2016),' In search of validity evidence in support of the interpretation and use of assessments of complex constructs: Discussion of research on assessing 21st century skills', *Applied Measurement in Education*, **29**(4), pp.310-318.
Escolà-Gascón, A. and Gallifa, J. (2022), 'How to measure soft skills in the educational context: psychometric properties of the SKILLS-in-ONE questionnaire', *Studies in Educational Evaluation*, **74**, pp.1-14.
Fellows, R., & Liu, A. (2016), 'Sensemaking in the cross-cultural contexts of projects', *International Journal of Project Management,* **34**(2), pp.246-257.
Fixsen, A. and Ridge, D. (2019),' Shades of Communitas: A Study of Soft Skills Programs', *Journal of Contemporary Ethnography*, **48**(4), pp.510–537.
Goffman, E. (1964), 'The neglected situation', *American Anthropologist*, **66**(6), pp.133-136.
Heckman, J. J., & Kautz, T. (2012), 'Hard evidence on soft skills', *Labour Economics*, **19**(4), pp.451-464.
Hefley, W. E., & Bottion, M. (2021), 'Skills of junior project management professionals and project success achieved by them', *International Journal of Information Systems and Project Management*, **9**(1), pp.56-75.
Ibrahim, R. et al. (2017). The effect of soft skills and training methodology on employee performance. European Journal of Training and Development, 41 (4), 388-406.
Ives, M., (2005), 'Identifying the contextual elements of project management within organizations and their impact on project success', *Project Management Institute*, **36**(1), 51-50.
Joslin, R., & Müller, R. (2015), 'Relationships between a project management methodology and project success in different project governance contexts', *International Journal of Project Management*, **33**(6), pp.1377-1392.
Kallio, H. et al. (2016), 'Systematic methodological review: developing a framework for a qualitative semi-structured

interview guide', *Journal of Advanced Nursing*, **72**(12), pp.2954– 2965.
Karlsen, J., T. (2015), 'Project Stakeholder Management', *Engineering Management Journal*, **14**(4), pp.19-24.
Kendall, P. C. (1984), 'Behavioral assessment and methodology', *Annual Review of Behavior Therapy: Theory & Practice*.
Kenny, J. (2003), 'Effective project management for strategic innovation and change in an organizational context', *Project Management Journal*, **34**(1), pp.43-53.
Laker, D. R., & Powell, J. L. (2011), 'The differences between hard and soft skills and their relative impact on training transfer', *Human Resource Development Quarterly*, **22**(1), pp.111-122.
Lewin, K. (1947), 'Frontiers in group dynamics: II. Channels of group life; social planning and action research', *Human Relations*, **1**(2), pp.143-153.
Lin, H. Y. & You, J. (2021), 'Teamwork-performance prediction by using soft skills and technological savvy skills', *Journal of University Teaching & Learning Practice*, **18** (8), pp.1-24.
Locatelli, G., Ika, L., Drouin, N., Müller, R., Huemann, M., Söderlund, J., ... & Clegg, S. (2023), 'A Manifesto for project management research', *European Management Review*, **20**(1), pp.3-17.
Magano, J., Silva, C., Figueiredo, C., Vitória, A., Nogueira, T., & Pimenta Dinis, M. A. (2020). Generation Z: Fitting project management soft skills competencies—A mixed-method approach. Education Sciences, 10(7), 187.
Malik, H. A., & Malik, F. A. (2022). Emile Durkheim contributions to sociology. Sociology, 6(2), 7-10.
Manning, S. (2008). Embedding projects in multiple contexts–a structuration perspective. International Journal of Project Management, 26(1), 30-37.
Marin-Zapata, S. I., Román-Calderón, J. P., Robledo-Ardila, C., & Jaramillo-Serna, M. A. (2022). Soft skills, do we know what we are talking about?. Review of Managerial Science, 16(4), 969-1000.
Martens, M. L., & De Carvalho, M. M. (2017). Key factors of

sustainability in project management context: A survey exploring the project managers' perspective, International Journal of Project Management, 35(6), 1084 –1102.
Martinsuo, M. (2013). Project portfolio management in practice and in context. International Journal of Project Management, 31(6), 794 - 803.
Martinsuo, M., & Ahola, T. (2022). Multi-project management in inter-organizational contexts. International Journal of Project Management, 40(7), 813-826.
Martinsuo, M., & Geraldi, J. (2020). Management of project portfolios: Relationships of project portfolios with their contexts. International Journal of Project Management, 38(7), 441-453.
Morris, P. W., & Geraldi, J. (2011). Managing the institutional context for projects. Project Management Journal, 42(6), 20-32.
Müller, R., Martinsuo, M., & Blomquist, T. (2008). Project portfolio control and portfolio management performance in different contexts. Project Management Journal, 39(3), 28-42.
Ojiako, U., Ashleigh, M., Chipulu, M., & Maguire, S. (2011). Learning and teaching challenges in project management. International Journal of Project Management, 29(3), 268-278.
Packendorff, J. (1995). Inquiring into the temporary organization: new directions for project management research. Scandinavian Journal of Management, 11(4), 319-333.
Pant, I., & Baroudi, B. (2008). Project management education: The human skills imperative. International Journal of Project Management, 26(2), 24-128.
Pellegrinelli, S., Partington, D., Hemingway, C., Mohdzain, Z., & Shah, M. (2007). The importance of context in programme management: An empirical review of programme practices. International Journal of Project Management, 25(1), 41-55.
Pinto, J. K. & Slevin, D. P. (1988). Critical success factors across the project life cycle: definitions and measurement techniques. Project Management Journal, 19(3), 67-75.
Stevenson, D. H., & Starkweather, J. A. (2010). PM critical competency index: IT execs prefer soft skills. International

Journal of Project Management, 28(7), 663-671.
Strohmeier, S. (1992). Development of interpersonal skills for senior project managers. International Journal of Project Management, 10(1), 45-48.
Sunindijo, R. Y. (2015). Project manager skills for improving project performance. International Journal of Business Performance Management, 16(1), 67-83.
Sunindijo, R. Y., and Zou, P. X. (2013). The roles of emotional intelligence, interpersonal skill, and transformational leadership on improving construction safety performance, Construction Economics and Building, 13(3), 97–113.
Tylor, E. B. (1871). Primitive culture: researches into the development of mythology, philosophy, religion, art, and custom (2). J. Murray.
vom Brocke, J., Zelt, S., & Schmiedel, T. (2016). On the role of context in business process management. International Journal of Information Management, 36(3), 486-495.
Zeivots, S., Cram, A., & Wardak, D. (2023). Developing project management principles by examining codesign practices in innovative contexts. Project Management Journal, 54(6), 651-664.
Zhang, F., Zuo, J., & Zillante, G. (2013). Identification and evaluation of the key social competencies for Chinese construction project managers. International Journal of Project Management, 31(5), 748-759.
Ziek, P., and Anderson, J. D. (2015). Communication, dialogue and project management". International Journal of Managing Projects in Business, 8(4), 788-803.

Printed by
Gi&Gi srl - Triuggio (MB)
September 2024


9788834358702