

KNOWLEDGE MANAGEMENT COMPETENCES FOR RESEARCH MANAGERS IN EUROPEAN HIGHER EDUCATION: A MIXED-METHODS STUDY AND ALIGNMENT WITH RM COMP

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ABSTRACT

What is new?	As higher education institutions (HEIs) operate in increasingly project-based and complex research environments, the ability to coordinate, share, and mobilise knowledge has become critical for research management (RM). Yet the knowledge management (KM) competences underpinning this work remain under-conceptualised and largely unexplored. This paper addresses this gap by empirically examining KM competences in research management and their representation within the European Competence Framework for Research Managers (RM Comp).
What was the approach?	This exploratory sequential mixed-methods study combined a qualitative analysis of three KM competence frameworks with a survey of 119 research managers from HEIs across Europe. KM competences identified in the qualitative phase were translated into survey items and quantitatively assessed for their perceived importance in practice. The integrated findings were subsequently compared with the European Competence Framework for Research Managers (RM Comp) to examine competence

	representation and areas of alignment and of limited representation.
What is the academic impact?	The findings demonstrate that knowledge management competences are highly relevant to RM practice, with learning, facilitation, and knowledge coordination emerging as particularly important dimensions. Although many of these competences are reflected within RM Comp, they are represented largely in an implicit and fragmented manner. The study provides one of the first empirically grounded examinations of KM competences in research management and suggests that knowledge management should be understood not merely as an additional competence required by research managers, but rather as a conceptual lens through which many of the profession's core activities can be understood.
What is the wider impact?	The study highlights the need to strengthen KM-related training, professional development, and competence frameworks within research management. Recognising research managers as key actors in knowledge coordination and organisational learning can support more effective knowledge flows, collaboration, and institutional capacity-building. More explicit integration of KM competences into frameworks such as RM Comp may help align professional development with contemporary RM practice and support future professionalisation initiatives.
Keywords	Knowledge management; research management; competence frameworks; higher education; RM Comp

INTRODUCTION

Higher education institutions (HEIs) operate in increasingly complex, knowledge-intensive environments shaped by profound transformations in the research and innovation (R&I) ecosystem. Global competition for funding and talent, the rise of academic capitalism, and growing expectations regarding societal impact and accountability have significantly altered how research is organised, managed, and evaluated (Quarchioni et al., 2020: 304; European Commission, 2022: 1; Schützenmeister, 2010: 3-4; 10; Labuschagne, 2024: 1). Simultaneously, universities are increasingly expected to act as strategic actors within interconnected innovation ecosystems, contributing not only to scientific production but also to societal problem-solving, innovation, and knowledge valorisation (Compagnucci and Spigarelli, 2020: 1ff). In this context, knowledge is not only the central output of HEIs but also a strategic resource that underpins institutional performance, competitiveness, innovation, and organisational adaptability (Nonaka and Takeuchi, 1995; North and Kumta, 2018).

Despite their role as knowledge-producing organisations, HEIs continue to face persistent challenges in systematically managing, preserving, and mobilising scientific and procedural knowledge across projects, departments, and institutional boundaries. Project-based research structures, disciplinary silos, and staff mobility often result in fragmented learning processes and knowledge loss (Kasvi et al., 2003: 571f; Sokhanvar et al., 2014: 1826). At the same time, the shift towards Knowledge Work 4.0 – value creation enabled through digital technologies – is transforming how data, information, and knowledge are generated, processed, and used (North and Maier, 2018: 667).

Together, these developments highlight the growing importance of knowledge management (KM) as both a strategic and an operational capability in higher education (Kidwell et al., 2000: 31ff; Quarchioni et al., 2020: 304-305; Galgotia and Lakshmi, 2022: 1ff). As a socio-technical capability, KM supports the creation, sharing, integration, and application of knowledge to achieve organisational goals (Anand and Singh, 2011: 926; Lehner, 2014: 121ff). In higher education institutions, it extends beyond information systems to encompass organisational learning, knowledge integration, and facilitation across institutional boundaries, particularly in project-based and interdisciplinary research environments.

Although knowledge creation and dissemination have always been core missions of HEIs, research on KM in this context remains relatively fragmented and underdeveloped. Existing studies demonstrate the broad applicability of KM in areas such as intellectual capital, knowledge transfer, technology, and learning, but primarily focus on academic staff or technological solutions, while neglecting organisational and practice-oriented perspectives (Quarchioni et al., 2020: 304ff; Baptista Nunes et al., 2017: 1ff). Where non-academic actors are considered, the emphasis is predominantly on librarians, with limited attention to other professional roles (Baptista Nunes et al., 2017: 6). More broadly, there is limited research translating KM concepts into competences and professional practices within HEIs (Asiedu et al., 2022: 13). This gap is particularly relevant for research management (RM), where knowledge-related coordination and boundary-spanning activities have become increasingly important within contemporary research ecosystems.

RM has emerged as a distinct and increasingly professionalised field within higher education (Kerridge et al., 2023a: 1; Whitchurch, 2023: lv). Research managers (RMs) support, enable, and facilitate research across the entire research lifecycle and contribute to coordination, communication, and organisational processes. Scholars have described RMs as hybrid professionals operating at the interface of science, administration, strategy, and academic work (Agostinho et al., 2018: 23-24). Their role is characterised by boundary-spanning activities that connect stakeholders, processes, and knowledge domains across organisational levels (Whitchurch, 2008: 377 ff; Schützenmeister, 2010: 23). In increasingly projectified and interdisciplinary research environments, these boundary-spanning functions are inherently knowledge-intensive – RMs do not merely support administrative processes; they facilitate the coordination, translation, integration, and institutionalisation of knowledge across projects,

organisational units, disciplinary domains, and external stakeholder networks. Research management can therefore be understood not only as an administrative or support function, but also as a form of organisational knowledge coordination embedded in complex research ecosystems.

Despite this central positioning, the contribution of RMs to knowledge management remains insufficiently conceptualised and operationalised. Although these boundary-spanning and knowledge-intensive activities are central to contemporary research management, they have rarely been examined through a knowledge management perspective. Existing KM competence frameworks provide detailed descriptions of knowledge-related competences (e.g. Saito, 2007; Mittelman et al., 2024), but they were not developed for research management. Conversely, RM literature recognises a broad range of professional competences and boundary-spanning responsibilities (Schützenmeister, 2010: 23; Agostinho et al., 2018: 23-24; Whitchurch, 2008: 377ff) without explicitly conceptualising them as knowledge management competences. Consequently, there is currently little empirical evidence regarding which KM competences underpin RM practice or how these competences are represented within emerging research management competence frameworks.

At the same time, the prominence of KM-related topics in specialised RM journals, such as technology transfer and knowledge mobilisation, highlights that knowledge processes are already central to the field, even if they are not explicitly conceptualised as KM competences (Santos and Poli, 2025: 2-4). Similarly, recent debates on research culture, open science, interdisciplinarity, and institutional capacity-building within the European Research Area (ERA) increasingly point to the strategic importance of knowledge coordination and organisational learning capabilities in research-performing organisations (Council of the European Union, 2025: 1 ff).

This disconnect becomes particularly evident in the recently published European Competence Framework for Research Managers (RM Comp), which represents a milestone in the professionalisation of the field (European Commission, 2025). Although several competences in RM Comp implicitly relate to knowledge coordination, learning, communication, and organisational integration, they are not articulated within a coherent KM-oriented conceptual framework, despite KM being recognised as important in knowledge-intensive environments (Hoq and Akter, 2012: 92ff). At the same time, established KM competence frameworks have not been adapted to the specific requirements of research management in HEIs. This omission is not merely terminological – competence frameworks play an important role in shaping professional recognition, career development, training priorities, and institutional expectations. Competences that remain only implicitly represented are less likely to be systematically developed, assessed, or institutionally recognised within professional practice. Consequently, the limited visibility of KM competences within RM Comp may contribute to the continued under-recognition of the knowledge-intensive dimensions of research management work.

This study therefore addresses two interconnected gaps. First, it identifies the KM competences that research managers perceive as important in professional practice. Second, it examines the extent to which these competences are represented within RM Comp. To achieve this, the study adopts an exploratory sequential mixed-methods approach (Creswell and Plano Clark, 2017: 65-68), combining a qualitative analysis of three KM competence frameworks with a quantitative survey of research managers across European HEIs.

The study is guided by the following research questions:

- RQ1: Which knowledge management competences do research managers in higher education institutions consider important for their professional practice?
- RQ2: To what extent are these competences represented in the European Competence Framework for Research Managers (RM Comp)?
- RQ3: What gaps exist between practice and the RM Comp framework?

By addressing these questions, the study contributes to both research and practice. Empirically, it provides one of the first systematic analyses of KM competences in the context of research management. Conceptually, it connects KM theory with RM practice by demonstrating that many core research management activities can be understood from a knowledge management perspective. Practically, the findings provide evidence to inform the further development of competence frameworks, professional training, and organisational strategies in higher education.

BACKGROUND AND CONTEXT

Building on established KM theory, knowledge can be understood, in contrast to information, as a dynamic combination of experience, values, and contextual insights that inform action. It is not only captured in documents and repositories but is also embedded in organisational routines, practices, and social contexts (Davenport and Prusak, 1998: 5). In this context, KM refers to the systematic management of knowledge-related activities, including the identification, acquisition, development, sharing, application, and preservation of knowledge in support of organisational goals (Probst et al., 2012: 35; North and Kumta, 2018: 13).

KM has evolved into a multidisciplinary field since the early 1990s, drawing on management science, organisational theory, human resource management, informatics, sociology, and psychology (Anand and Singh, 2011: 926; Lehner, 2014: 121ff). Foundational models such as Nonaka's SECI framework (1994), Probst's knowledge cycle (1998), and North's knowledge market (1998) conceptualise KM as a dynamic process of knowledge creation, transfer, and utilisation. In line with these perspectives, KM is understood in this study as a socio-technical and strategic capability that encompasses both tacit and explicit knowledge and requires the alignment of technological infrastructures, organisational culture, and learning processes. Beyond the management of knowledge assets, KM facilitates collaboration across individuals, teams, and organisational boundaries and contributes to continuous improvement,

innovation, and organisational adaptability (Girard and Girard, 2015; Jashapara, 2004: 12; North and Kumta, 2018: 13).

The role of KM in HEIs is situated within the broader transformation of the Research and Innovation (R&I) landscape, the evolving organisational nature of universities, and the increasing professionalisation of research management. This section, therefore, examines three interrelated dimensions: (1) the changing R&I environment and its implications for HEIs, (2) the role of KM in higher education and research contexts, and (3) the emergence of research management as a professional field alongside the development of competence frameworks.

CHANGING R&I LANDSCAPE AND TRANSFORMATION OF HEIs

Over recent decades, the R&I landscape has undergone a profound transformation, driven by globalisation, digitalisation, and increasing societal and policy expectations. Higher education institutions are no longer seen solely as providers of teaching and research but are increasingly expected to contribute to innovation, economic development, and the resolution of societal challenges. This expanded role is often conceptualised through the notion of the “third mission” and reflects a broader shift towards more entrepreneurial and strategically oriented universities embedded in complex innovation ecosystems (Quarchioni et al., 2020: 304; Compagnucci and Spigarelli, 2020: 1ff; European Commission, 2022: 1ff).

Innovation models such as the Triple Helix and its extensions emphasise increasing interdependence between academia, industry, government, and society in knowledge production (Etzkowitz and Leydesdorff, 1995; Carayannis et al., 2016: 19-20). Similarly, shifts from discipline-based and academically driven knowledge production (Mode 1) toward transdisciplinary and problem-oriented forms of research (Mode 2 and Mode 3) highlight the growing importance of collaboration across organisational and societal boundaries (Gibbons et al., 1994; Carayannis and Campbell, 2006: 17-20). These frameworks collectively point to a more networked, open, and co-productive understanding of research and innovation, in which universities operate as central nodes within multi-actor systems.

Parallel to these changes, HEIs have undergone significant organisational transformation shaped by New Public Management (NPM) and the rise of academic capitalism. NPM has introduced performance-based governance, competition, and accountability mechanisms into higher education, reinforcing strategic management practices and the need to demonstrate measurable outcomes (Tolofari, 2005: 75; Huber, 2012: 245). Academic capitalism further intensifies these dynamics by embedding market-oriented logics within universities, encouraging revenue-generating activities across research, teaching, and service (Sigahi and Saltorato, 2020: 95-99). These developments have contributed to the emergence of the entrepreneurial university, characterised by strategic autonomy, professionalised management, and active engagement with industry and civil society (Huber, 2012: 247; Etzkowitz, 2016: 122ff).

A key organisational consequence of these transformations is the increasing projectification of research. Research activities are progressively organised through temporary, externally-funded, and interdisciplinary projects, reflecting both the competitive funding environment and the need for flexibility and responsiveness (Schützenmeister, 2010: 10-11; Besio, 2012: 257-258). While project-based structures enable dynamic collaboration and innovation, they also introduce significant challenges for coordination, knowledge integration, and organisational learning. The temporary and decentralised nature of projects often leads to fragmented knowledge flows, limited transfer of lessons learned, and risks of knowledge loss across project cycles (Kasvi et al., 2003: 571-572; Sokhanvar et al., 2014: 1826; North and Kumta, 2018: 178).

Taken together, these developments position HEIs as complex, adaptive organisations operating in highly dynamic environments, requiring increased coordination, integration of knowledge, and alignment across organisational and disciplinary boundaries.

KNOWLEDGE MANAGEMENT, LEARNING, AND INSTITUTIONAL ADAPTATION IN HEIs

Building on the increasing complexity and coordination demands outlined above, knowledge management emerges as a central organisational capability for higher education institutions. The literature distinguishes between KM as an organisational capability and KM competences as individual professional capabilities. KM refers to the strategic and systematic management of organisational knowledge processes, structures, and practices (Probst et al., 2012: 23-24; North and Kumta, 2018: 13), whereas KM competences relate to the ability of individuals to apply knowledge, skills, and behaviours to support these processes effectively in practice (North and Kumta, 2018: 37-39; Erpenbeck et al., 2017: XII-XIII).

As knowledge-intensive organisations (North and Kumta, 2018: 20), HEIs depend not only on the generation of knowledge but also on their ability to systematically manage, integrate, and mobilise it across organisational and disciplinary boundaries. In this sense, KM constitutes a strategic organisational capability that shapes the institutional knowledge base and supports learning, innovation, and adaptation in VUCA (volatile, uncertain, complex, and ambiguous) environments (Probst et al., 2012: 23-24; North and Kumta, 2018: 13-14).

Accordingly, KM literature positions learning organisations as particularly relevant in contexts characterised by complexity and uncertainty (North and Kumta, 2018: 9-10; Probst et al., 2012: 24). Learning organisations are characterised by the continuous creation, sharing, transformation, and embedding of knowledge into organisational routines and practices, thereby enabling organisational learning as a process of adaptation and continuous improvement (Nonaka, 1994: 20; Probst et al., 2012: 23-24; Senge, 1990: 1). KM can therefore be understood as a key organisational capability that supports the development and functioning of learning organisations. Senge (1990: 1) further conceptualises such organisations as systems in which collective learning,

shared reflection, and systems thinking support adaptation by recognising interdependencies within complex environments.

Despite this strategic relevance, KM remains comparatively less institutionalised in universities than in corporate contexts (Asiedu et al., 2022: 1). As a result, HEIs often struggle to preserve, connect, and reuse knowledge across projects and organisational units, particularly in decentralised, interdisciplinary, and increasingly project-based research environments (Schützenmeister, 2010: 10-11; Sokhanvar et al., 2014: 1826; Kezar, 2005; Prelipcean and Bejinaru, 2016: 469ff). Addressing these challenges depends on the ability to integrate dispersed individual and project-based knowledge into a broader organisational knowledge base or memory (Schindler, 2001: 115; Probst et al., 2012: 23-24). Nonaka's SECI model conceptualises this as a dynamic process of knowledge conversion between tacit and explicit forms (Nonaka, 1994: 20), while the Hypertext Organization model illustrates how knowledge generated in temporary project settings can be integrated into the organisational knowledge base (Nonaka and Takeuchi, 1995: 170). Without such mechanisms, project-based knowledge risks remaining fragmented, context-specific, or being lost after project completion.

Beyond supporting organisational learning, KM contributes to decision-making, innovation, administrative and academic services, and overall institutional performance in HEIs (Kidwell et al., 2000: 31-33; Galgotia and Lakshmi, 2022: 1). It also enables universities to respond to increasing demands related to knowledge valorisation, the "third mission", and the translation of research outputs into societal value (Unger et al., 2020: 807f). Accordingly, KM extends beyond technological systems and repositories by linking knowledge creation, use, preservation, and evaluation with institutional strategies and objectives (Probst et al., 2012: 35; Gourova et al., 2013).

However, implementing KM in HEIs remains challenging. Empirical studies identify persistent barriers, including siloed academic cultures, limited time and incentives, insufficient leadership support, weak collaboration, information overload, and the absence of comprehensive KM strategies (Tian et al., 2009: 83-90; Rego et al., 2009: 39-43; Quarchioni et al., 2020: 304). While technological infrastructures provide important support, the literature consistently emphasises that successful KM depends primarily on organisational and cultural conditions, including trust, openness, leadership, collaboration, motivation, and clearly defined opportunities for knowledge exchange (Tan, 2016: 525; Santos et al., 2024: 2-12; Tian et al., 2009: 86-90; Rego et al., 2009: 39-43).

Overall, KM in higher education is best understood as a socio-technical organisational capability. It requires not only appropriate tools and infrastructures but also clearly defined roles, routines, and competences that enable knowledge to be systematically created, shared, and integrated across disciplinary, institutional, and project boundaries. In this context, the ability to connect dispersed knowledge, facilitate coordination, and support institutional learning becomes increasingly important within research-intensive organisations.

RESEARCH MANAGEMENT AS A PROFESSIONAL FIELD AND THE EMERGENCE OF THE EUROPEAN COMPETENCE FRAMEWORK FOR RESEARCH MANAGERS (RM COMP)

Building on the transformations of the R&I landscape and the increasing importance of knowledge integration outlined above, Research Management (RM) has emerged as a distinct professional field within HEIs. It reflects the growing need for dedicated roles that coordinate research processes, connect diverse stakeholders, and support the organisation and use of knowledge across institutional and organisational boundaries (Schützenmeister, 2010: 1-6; Kerridge et al., 2023a: 1; Whitchurch, 2023: lv).

For the purposes of this article, research managers are understood as non-academic or semi-academic professionals who support research processes across the full lifecycle – from upstream planning and funding acquisition to downstream dissemination and knowledge transfer – through coordination, institutional administration, and knowledge translation (O'Regan and Zsár, 2024: 7-8). In this role, they operate at the intersection of science, administration, and policy and are frequently described as boundary-spanning or hybrid professionals due to their capacity to connect diverse stakeholders and facilitate the flow of scientific, administrative, and strategic knowledge (Poli et al., 2023: 201ff; Agostinho et al., 2018: 23-24; Whitchurch, 2008: 378-380).

In this capacity, RMs can also be understood as knowledge brokers and institutional intermediaries who facilitate the circulation, translation, and integration of knowledge across organisational and stakeholder interfaces (Meyer, 2010: 118ff). They increasingly occupy what Whitchurch (2015) conceptualises as “third space” positions, operating across traditional academic and administrative boundaries while integrating organisational, scientific, and strategic functions.

The emergence of RM reflects a broader process of professionalisation linked to transformations in university governance and research funding systems. While the field developed earlier in the United States alongside the institutionalisation of research administration and certification systems (Ritchie et al., 2023: 177), its expansion in Europe was closely associated with the increasing managerialisation, internationalisation, and competitiveness of higher education systems. In particular, the growing scale and complexity of competitive funding schemes, including the EU Framework Programmes, intensified the need for specialised support and coordination functions within HEIs (Huber, 2012: 248; European Commission, 2021: 1-2). This development was accompanied by the establishment of professional associations and international networks, such as ARMA in the United Kingdom, EARMA at the European level, and INORMS as a global network, which contributed to the consolidation, visibility, and recognition of the field (Agostinho et al., 2018: 21).

At the same time, RM remains characterised by conceptual ambiguity and terminological diversity. Roles vary widely across institutional and national contexts, and there is no universally agreed definition of the profession (Kerridge et al., 2023b; Zsár et al., 2024: 23-24). Research managers are described variously as administrators, facilitators, advisors, or intermediaries, reflecting the breadth of their responsibilities

across the research lifecycle (Derrick and Nickson, 2014: 26-27; Whitchurch, 2008: 378-380). Their activities typically include proposal development, project coordination, compliance, stakeholder engagement, and knowledge transfer, and are often shaped by project-based work and decentralised organisational structures (O'Regan and Zsár, 2024: 7-8; Zsár et al., 2025: Section 3).

Despite this diversity, a common feature of RM is its role in coordinating research and knowledge-related processes, particularly in the areas of pre-award and post-award support, which are widely regarded as core functions of research management across different national and institutional contexts (Kerridge et al., 2023b: 802). Research managers connect actors, structure information flows, and facilitate collaboration across organisational and disciplinary boundaries. In project-based research environments, where knowledge is often distributed and temporally bound, they contribute to linking project-level activities with broader institutional processes and to maintaining continuity beyond individual projects (Agostinho et al., 2018: 23-24; Schützenmeister, 2010: 25). In this sense, RM can be understood as a form of organisational knowledge coordination embedded in increasingly complex research ecosystems.

The growing strategic importance of RM is increasingly reflected at the policy level, particularly within the European Research Area (ERA). Since its launch in 2000, the ERA has aimed to reduce fragmentation and promote the circulation of researchers, knowledge, and technology across Europe (Groeninx van Zoelen, 2023: 80). More recent policy developments, including the first ERA Policy Agenda 2022-2024 and the second ERA Policy Agenda 2025-2027, explicitly emphasise the need to strengthen RM capacities, further professionalise the field, and support coordinated European approaches to competence development, training, and career pathways for research managers (Council of the European Union, 2020: 20; 2025: 21). These initiatives recognise research managers as key actors in enabling research performance, managing complexity, and supporting collaboration across institutional and national boundaries.

A central outcome of these policy efforts is the European Competence Framework for Research Managers (RM Comp), developed to provide a structured and shared understanding of the competences required in research management (European Commission, 2025; O'Regan and Zsár, 2024: 3-5). The framework defines a broad set of competences across areas such as project oversight, stakeholder engagement, communication, and strategic support, and is intended to guide professional development, career pathways, and institutional capacity-building (O'Regan and Zsár, 2024: 20-21; 25ff).

METHODOLOGY

RESEARCH DESIGN

This study adopts an exploratory sequential mixed-methods design, combining qualitative and quantitative approaches to investigate knowledge management

competences in research management. Such designs are particularly suitable for under-researched topics where key constructs require initial conceptual development prior to empirical assessment (Creswell and Plano Clark, 2017: 10-14; 65-68). More broadly, mixed-methods approaches enable the integration of qualitative exploration and quantitative validation, thereby strengthening the robustness of findings (Ebster and Stalzer, 2017: 152; Berger-Grabner, 2022: 126).

The research follows a three-phase structure, as illustrated in Figure 1. First, a qualitative content analysis of three KM competence frameworks was conducted to identify and structure relevant competences (TFPL, 1999; Saito, 2007; Mittelman et al., 2024). The three frameworks were purposively selected to provide complementary perspectives on KM competence requirements, considering their scholarly or practical relevance, breadth of competence coverage, methodological foundations, and temporal and geographical diversity. TFPL (1999) was included as an influential foundational and practice-oriented framework, derived from empirical analysis of KM job profiles and organisational cases. Given its early publication date, it was complemented by Saito (2007), which provides a comprehensive, academically grounded and empirically validated framework from a non-European context, thereby broadening the conceptual perspective beyond Europe. The recent GfWM competence catalogue (Mittelman et al., 2024), developed through practitioner-led working groups in a European context, was included to reflect contemporary KM practice and emerging competence requirements. Taken together, the three frameworks were not intended to constitute an exhaustive review of KM competence models, but rather to provide complementary foundational, cross-contextual and contemporary perspectives for the exploratory synthesis. The resulting competence structure served as the conceptual foundation for the survey instrument and subsequent framework comparison.

Second, these findings were operationalised into survey items and assessed through a quantitative study. Third, qualitative and quantitative findings were integrated and mapped against the European Competence Framework for Research Managers (RM Comp) to examine the representation of practice-relevant KM competences and identify areas of alignment and limited representation.

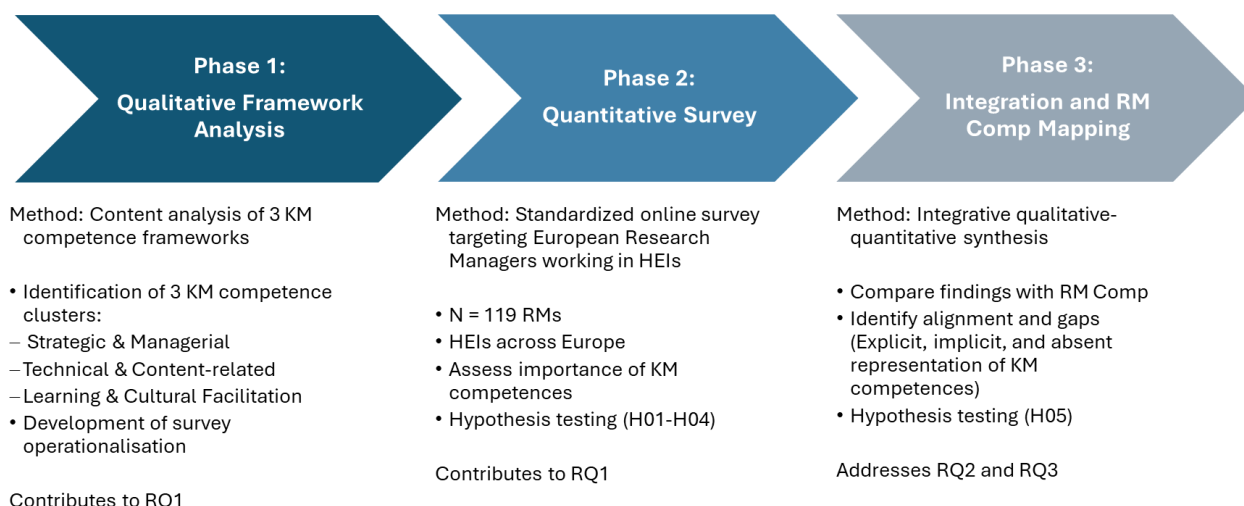


Figure 1: Overview of the Exploratory Sequential Mixed-Methods Research Design (own representation)

HYPOTHESES

Building on the research questions and the conceptual framework developed in the qualitative phase, a set of hypotheses was formulated to guide the quantitative analysis. Hypotheses H01-H04 examine whether the perceived importance of KM-related competences varies depending on (H01) professional seniority, (H02) organisational location and functional role profile, (H03) institutional size, and (H04) differences between competence clusters. In addition, Hypothesis H05 addresses the alignment between empirically identified KM competences and their representation in RM Comp, examining whether relevant competences are fully reflected or whether gaps exist. Given the exploratory character of the study, the hypotheses primarily serve to structure the analysis and support interpretation rather than to provide confirmatory testing in a strictly generalisable sense.

SURVEY DESIGN

The survey instrument was developed directly from the qualitative phase, ensuring alignment between theoretical constructs and empirical measurement. KM competences were operationalised through sets of practice-oriented activity items, which function as observable indicators of underlying competence domains.

The quantitative phase employed a fully standardised online survey (Computer Assisted Web Interviewing), implemented using the SoSci Survey platform (Leiner 2025). Respondents assessed the importance of KM-related activities using five-point Likert scales. Likert-based measures are commonly treated as interval-scaled and allow aggregation into composite indices representing underlying constructs (Brosius et al., 2022: 45ff).

The items covered key areas of KM practice, including knowledge sharing and transfer, coordination of knowledge processes, use of digital tools, stakeholder communication,

and strategic knowledge development. These were grouped into three competence clusters: Strategic & Managerial, Technical & Content-related, and Learning & Cultural Facilitation. The cluster structure reflects the conceptual understanding developed in the qualitative phase, particularly the interpretation of RM work as relational, coordinative, and knowledge-intensive practice. Additional questions captured demographic, professional, and institutional characteristics to enable contextualised analysis.

A pretest with members of the target population was conducted to ensure clarity, coherence, and feasibility of the questionnaire, leading to minor refinements in item structure and length (Braunecker, 2023: 137f).

The questionnaire is publicly available via the University for Continuing Education Krems repository (DOOR) (DOI: <https://doi.org/10.48341/5z71-v589>).

DATA COLLECTION

The Computer Assisted Web Interviewing approach is particularly suitable for geographically dispersed populations, enabling efficient data collection while ensuring comparability of responses (Braunecker 2023: 39ff). This approach was well-suited to research managers, who constitute a heterogeneous and internationally distributed professional group. Data were collected using the SoSci Survey platform (Leiner 2025) and subsequently transferred to the secure cloud infrastructure of the University for Continuing Education Krems, ensuring GDPR-compliant data handling and storage.

A non-probability sampling strategy combining purposive and snowball sampling was employed, as this approach is appropriate for accessing specialised professional populations without a comprehensive sampling frame (Stratton, 2024: 121). The survey was distributed via European and national research management associations, professional mailing lists, LinkedIn, and the researcher's professional networks.

The survey was open for five weeks (29 September to 2 November 2025) and resulted in a final sample of 119 fully completed responses from research managers in HEIs across Europe. Given the sampling approach and sample size, the results are exploratory and not statistically representative, but provide analytically relevant insights into KM competence perceptions.

DATA ANALYSIS

The cleaned dataset was analysed using IBM SPSS Statistics (Version 31). The analysis combined descriptive and inferential statistical methods. Descriptive statistics were used to examine the distribution and relative importance of KM competences, including ranking, frequency analysis, and aggregation into competence cluster indices. Composite indices were constructed by averaging Likert-scale items, and their internal consistency was assessed using Cronbach's Alpha, following established standards for reliability (Ebster and Stalzer, 2017: 170).

Prior to hypothesis testing, distributional assumptions were assessed. As the data did not meet normality assumptions and included ordinal-scaled variables, non-parametric statistical methods were applied. These included Kruskal–Wallis tests, Mann–Whitney U tests, Friedman tests, and Wilcoxon signed-rank tests, which are appropriate for analysing group differences and related samples under non-normal conditions (Braunecker, 2023: 164ff).

To address the research objective of framework alignment, survey results were compared with the European RM Comp framework using a structured qualitative mapping approach based on Mayring's (2022) content analysis. KM competences derived from highly-rated survey items were systematically matched to RM Comp categories, distinguishing between explicit representation, implicit representation, and non-representation within the framework. The mapping focused on identifying how KM-related competences are positioned within RM Comp and whether they appear as explicitly articulated competence areas or as more transversal and implicitly embedded dimensions across multiple framework categories.

This combined analytical approach enabled the study to relate empirically perceived KM competences to broader discussions on RM professionalisation and competence framework development within the European higher education context.

This study was conducted as part of a Master's thesis at the University for Continuing Education Krems and is publicly available via the institutional repository (DOI: <https://doi.org/10.48341/hfmv-f822>). Formal ethical approval was not required for this study, as no personal data or personal identifiers were collected and IP addresses were not stored. Participation was voluntary and respondents provided informed consent prior to taking part in the anonymous survey.

RESULTS

PHASE 1: QUALITATIVE RESULTS

The qualitative phase produced the conceptual foundation for the empirical analysis by identifying and structuring core knowledge management competences, roles, and activities from three KM frameworks (TFPL, 1999; Saito, 2007; Mittelman et al., 2024). Across the analysed sources, three overarching KM competence clusters emerged: Strategic & Managerial, Technical & Content-related, and Learning & Cultural Facilitation. These clusters reflect recurring functional patterns in KM literature and capture the socio-technical character of KM practice as analytically distinct but interrelated dimensions. Strategic & Managerial competences refer to analysis, coordination, and the strategic development of knowledge-related structures and processes; Technical & Content-related competences focus on the systematic handling of knowledge content, repositories, processes, and digital systems; and Learning & Cultural Facilitation competences comprise knowledge sharing, learning, collaboration, and the development of a knowledge-oriented organisational culture.

Building on this conceptual synthesis, the qualitative analysis resulted in an HEI-specific operationalisation matrix. This matrix translated the abstract competence-role-activity relationships into a structured set of practice-oriented KM activities tailored to the context of research management in higher education institutions. Each activity was formulated in HEI-relevant language and linked to its underlying KM competences, thereby preserving the multidimensional competence structure identified in Phase 1. The resulting activity set provided the direct basis for the survey instrument used in Phase 2.

In addition, Phase 1 included a comparative mapping of the consolidated KM competences to RM Comp. This mapping showed a broad but uneven functional alignment between the KM competence set and the European Competence Framework for Research Managers. Many KM-related competences are covered within RM Comp, but predominantly in an implicit and cross-cutting manner rather than as clearly delineated KM-specific competences. The mapping, therefore, provided an analytical point of reference for the later synthesis of empirical survey findings with the framework analysis in Phase 3.

The HEI-specific operationalisation matrix and the detailed comparative mapping of KM competences to RM Comp are available as supplementary material via the University for Continuing Education Krems repository (DOOR) (DOI: <https://doi.org/10.48341/5z71-v589>). The repository further includes the survey instrument and anonymised dataset (including codebook) used in this study.

PHASE 2: QUANTITATIVE SURVEY RESULTS

Sample Characteristics

The final analytical sample consisted of $N = 119$ research managers working in HEIs across Europe. Respondents were primarily based in EU-27 member states ($n = 111$), with smaller groups from EEA/EFTA countries ($n = 3$), EU candidate countries ($n = 3$), and the United Kingdom ($n = 2$).

The sample represents a relatively experienced professional group. Respondents reported between 1 and 30 years of experience in research management ($M = 9.74$, $SD = 6.60$; median = 9). The largest group had 10-19 years of experience (37%), followed by less than 5 years (26.9%), 5-9 years (25.2%), and more than 20 years (10.9%). Consistent with this, approximately 76% of respondents self-assessed their experience level as advanced or expert using RM Comp-based proficiency descriptions, indicating that the sample largely consisted of experienced and senior RM professionals.

Functionally, respondents are concentrated in core RM areas, particularly pre-award (76.5%) and post-award activities (52.9%), alongside roles in research support management (34.5%), research finance (32.8%), and strategy or policy development (31.9%). More specialised domains, such as data stewardship or equality and diversity, are less frequently represented.

Most respondents (73.1%) were located in central service units, with smaller shares in faculty-level units (11.8%) and academic departments (12.6%), reflecting the relatively centralised organisational positioning of many RM functions within the sample. The sample is further dominated by public higher education institutions (91.6%) and is concentrated in medium to large organisations.

In terms of gender, 74.8% of respondents identified as female and 21.0% as male, with small shares identifying as non-binary or preferring not to disclose. This distribution aligns with existing evidence on the gender structure of the profession, such as that documented in the RM Roadmap survey (Zsár et al., 2024: 8).

Overall, the sample reflects a professionalised and institutionally embedded research management workforce, providing a robust exploratory basis for analysing the relevance of knowledge management competences in practice.

Differences in Perceived Importance (H01 – H03)

The analysis first examined whether the perceived importance of KM competences varied according to professional seniority, organisational location and functional role profile, and institutional size (H01-H03).

With regard to professional seniority (H01), the results indicate that, within this sample, more experienced research managers tended to assign significantly higher importance to Strategic & Managerial KM competences than less experienced respondents (Figure 2).

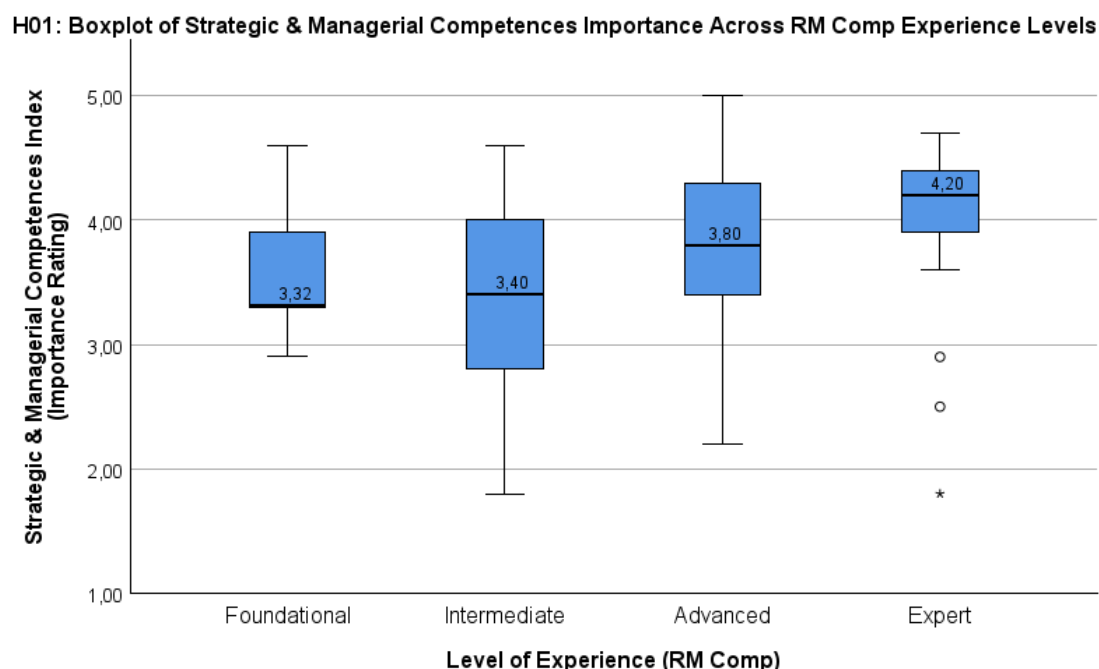


Figure 2: Boxplot of Strategic & Managerial Competence Importance Across RM Comp Experience Levels (SPSS output, own representation)

This finding supports Hypothesis H01 and suggests that more experienced respondents placed greater importance on strategic and organisational dimensions of KM practice.

For organisational location and functional role profile (H02), no statistically significant differences were observed. Neither organisational embedding (central vs. decentralised units) nor functional focus (specialised vs. multi-area roles, or pre-award vs. post-award) showed systematic variation in competence ratings. Accordingly, H02 is not supported.

With regard to institutional size (H03), the analysis revealed no statistically significant differences. Within this sample, KM competence ratings remained broadly similar across institutions of different sizes. Consequently, H03 is not supported.

Taken together, these findings indicate that perceived importance ratings for KM competences were broadly consistent across different organisational contexts within the sample, while professional seniority was associated with differences in the perceived importance of strategic competences.

Overall Importance of KM Competence Clusters (H04)

Having examined variation in competence ratings across respondent characteristics (H01-H03), the analysis next considered the overall perceived importance of the three KM competence clusters (H04). Respondents assessed the importance of KM-related activities using a five-point Likert scale ranging from 1 ("not important") to 5 ("very important"). The competence cluster indices represent aggregated mean importance ratings across the corresponding survey items.

All three KM competence clusters were rated above the midpoint of the scale, indicating that respondents generally perceived them as important. Learning & Cultural Facilitation received the highest mean rating ($M = 3.90$), followed by Strategic & Managerial ($M = 3.74$) and Technical & Content-related competences ($M = 3.58$) (Figure 3).

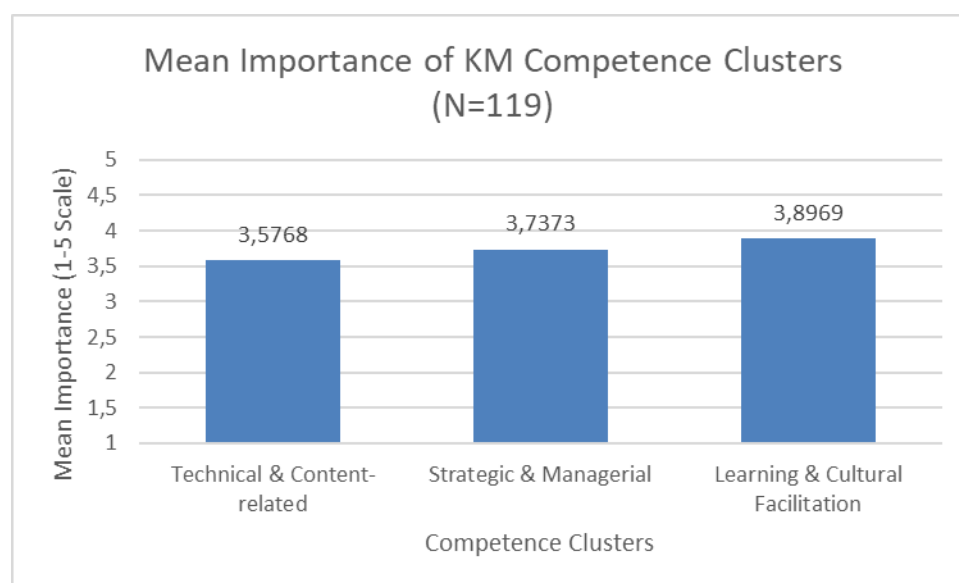


Figure 3: Mean Importance Ratings of the Three KM Competence Cluster Indices (own representation)

Statistical testing confirmed significant differences between the three competence clusters, supporting Hypothesis H04. Within this sample, competences related to learning, collaboration, and facilitation were perceived as significantly more important than technical KM-related competences.

Highest-Rated KM Activities and Competences (Item Level)

At the item level, several KM-related activities received particularly high importance ratings ($M \geq 4.0$), primarily in areas related to organisational coordination, learning facilitation, and knowledge-sharing processes.

Within the Strategic & Managerial competence cluster, the highest-rated activities are analysing and improving organisational processes to ensure smooth knowledge flows ($M = 4.29$), recognising organisational capabilities for identifying gaps and opportunities ($M = 4.21$), and analysing the external environment to anticipate future knowledge requirements ($M = 4.10$). These activities reflect a comparatively strong emphasis on analytical and coordination-oriented dimensions of KM practice within the sample.

In the Technical & Content-related cluster, only one activity clearly exceeds the threshold: understanding how institutional knowledge and information processes operate ($M = 4.53$). More specialised technical activities generally received comparatively lower ratings, although they remained above the midpoint of the scale.

The Learning & Cultural Facilitation cluster contained several of the highest-rated activities overall, including providing training and learning opportunities ($M = 4.29$), acting as a knowledge broker by connecting people and stakeholders ($M = 4.08$), and promoting a culture of open and responsible knowledge sharing ($M = 4.05$). These findings point to the perceived importance of facilitation, collaboration, and knowledge-sharing activities within RM practice.

Taken together, the item-level findings suggest that respondents primarily associated KM-related practice with relational, facilitative, and coordination-oriented activities rather than with narrowly technical functions.

Open-ended responses further reinforced this pattern. Rather than introducing fundamentally new competence areas, respondents mainly emphasised and contextualised existing ones, particularly the role of research managers as knowledge brokers, the importance of cross-unit coordination, and the relevance of learning-oriented and facilitative activities. Additional comments highlighted aspects such as knowledge valorisation, the use of emerging technologies, and the integration of experiential knowledge into organisational learning processes, thereby complementing the structured survey results.

A complete overview of item-level importance ratings, including means and standard deviations for all surveyed KM-related activities, is presented in Appendix A, Tables 1-3.

PHASE 3: ALIGNMENT WITH THE RM COMPETENCE FRAMEWORK (H05)

The final step of the analysis examined the alignment between empirically important KM competences and their representation within the European Competence Framework for Research Managers. Based on the comparative mapping, three levels of representation can be distinguished: explicit, implicit, and absent.

First, a subset of highly-rated KM competences is explicitly represented within RM Comp. These include competences such as strategic and analytical thinking, communication, collaboration and teamwork, as well as interpersonal and facilitation skills. A functional overlap is particularly visible within the RM Comp clusters *Cognitive Abilities*, *Communication*, *Stakeholder Engagement*, and *Line Management and Talent Development*.

Second, a substantial share of KM competences is implicitly represented but not explicitly conceptualised as KM-related. This includes competences such as organisational structuring and coordination, recognising organisational capabilities, business and organisational context awareness, developing knowledge strategies, handling organisational politics, fostering learning orientation, interpreting organisational culture, didactic competence, as well as KM-related evaluation and process improvement. These competences are embedded across multiple RM Comp clusters but are represented primarily as cross-cutting elements rather than as part of a coherent KM competence domain.

Finally, some competences are not explicitly represented in the RM Comp. In particular, KM foundations and methods, as well as knowledge orientation and awareness of knowledge dynamics, are not explicitly articulated. From the perspective of the KM frameworks analysed in this study, these areas remain comparatively underrepresented within RM Comp, despite their importance for understanding and managing organisational knowledge processes.

Overall, the findings support Hypothesis H05, showing that KM competences perceived as important in professional practice are not fully reflected in RM Comp. Rather, they are represented primarily in transversal and implicit ways instead of as a clearly delineated competence domain.

A detailed mapping of empirically important KM competences and their representation within RM Comp is provided in Appendix B, Table 4.

DISCUSSION

This study examined the role of knowledge management competences in RM within HEIs, focusing on their perceived importance in professional practice and their representation within the European Competence Framework for Research Managers (RM Comp). By integrating qualitative and quantitative findings, the study provides empirical insight into an under-researched area and contributes to bridging KM theory and research management practice.

WHY KM MATTERS FOR RESEARCH MANAGEMENT

Before addressing the research questions, it is important to clarify why KM competences are not merely adjacent to research management but closely connected to its core functions. To establish this conceptual foundation, Phase 1 synthesised KM competences across different KM competence frameworks and adapted them to the RM context. The qualitative analysis indicates that KM competences are multidimensional and socio-technical, combining strategic orientation, operational knowledge processes, and human-centred facilitation. Across the reviewed frameworks, KM is conceptualised as an integrative practice embedded in organisational processes and learning dynamics rather than as a narrowly bounded function (Davenport and Prusak, 1998: 163; Lehner, 2014: 50; 121ff; Saito, 2007: 55-56).

The three competence clusters developed in this study, Strategic & Managerial, Technical & Content-related, and Learning & Cultural Facilitation, reflect this integrative nature of KM. Strategic competences relate to aligning knowledge processes with organisational goals, technical competences to enabling and structuring knowledge flows, and facilitative competences to fostering interaction, learning, and knowledge transformation. This structure reflects established distinctions between strategic and operative KM (Probst et al., 2012: 32-35; North and Kumta, 2018: 38f) as well as socio-cultural perspectives that emphasise trust, collaboration, and learning as central conditions for effective knowledge sharing (Lee and Choi, 2003: 188ff; Senge, 1990).

Importantly, these findings suggest that knowledge management should not be viewed merely as an additional competence required by research managers. Rather, KM provides a conceptual lens through which many core RM activities can be understood. This interpretation reflects the boundary-spanning nature of the profession – RMs coordinate knowledge across projects, organisational units, institutional structures, and external stakeholders while facilitating organisational learning and institutional continuity (Schützenmeister, 2010: 1-6; 23; Agostinho et al., 2018: 23-24; Meyer, 2010: 118; Whitchurch, 2023: Iv; Kerridge et al., 2023a: 1). Viewed from this perspective, research management can increasingly be understood as a form of organisational knowledge coordination within HEIs, particularly in environments characterised by projectification, interdisciplinarity, and distributed knowledge production.

This interpretation is also consistent with broader KM literature. In higher education, KM supports decision-making, proposal and curriculum development, administrative services, strategic planning, and the research process (Kidwell et al., 2000: 31-33). Yet KM practices in HEIs remain comparatively uneven and weakly institutionalised (Asiedu et al., 2022: 1). Under these conditions, the role of research managers in coordinating, preserving, translating, and mobilising organisational knowledge across institutional boundaries is likely to become increasingly important for maintaining continuity and supporting organisational learning.

This conceptual foundation provides the basis for interpreting the empirical findings. The following sections therefore examine how these KM competences are reflected in

research management practice (RQ1), represented within RM Comp (RQ2), and where important gaps remain between practice and framework (RQ3).

KM COMPETENCES IN RESEARCH MANAGEMENT PRACTICE (RQ1)

The survey results indicate that research managers consistently perceive KM competences as highly relevant for their professional practice, reinforcing the central role of knowledge-related activities in contemporary HEIs. All KM-related activities were rated above the midpoint of the scale, indicating that KM is understood as an integral component of research management work rather than a specialised or peripheral function.

However, the findings also reveal clear differences across competence dimensions. Learning & Cultural Facilitation competences received the highest ratings, followed by Strategic & Managerial competences, while Technical & Content-related competences were rated comparatively lower, albeit still consistently highly. This hierarchy aligns with socio-cultural perspectives in KM theory, which emphasise interaction, context, and learning as central mechanisms of knowledge creation and use (Nonaka, 1991: 96-98; Nonaka, 1994: 15-17), as well as with ISO 30401:2018, which highlights learning and internalisation as core processes of organisational knowledge development (International Organization for Standardization, 2018: 6-7).

These results indicate that KM in research management is perceived less as a technical function than as a relational and process-oriented capability. Activities such as knowledge brokering, facilitating collaboration, and enabling organisational learning were consistently rated highest. This is consistent with KM research showing that effective knowledge processes depend less on technological infrastructures than on organisational and cultural conditions, including trust, openness, and interaction, particularly in fragmented organisational environments (Hansen et al., 1999: 106ff; Lee and Choi, 2003: 188ff; Rego et al., 2009: 39-41; Tian, et al. 2009: 83-87).

The results further highlight the importance of Strategic & Managerial KM competences, particularly among more experienced research managers. Within this sample, respondents with greater professional experience assigned higher importance to competences related to organisational coordination, strategic orientation, and the management of knowledge processes. This finding may reflect the increasingly strategic and integrative responsibilities associated with more senior RM roles, particularly in complex organisational and funding environments. Such a shift is consistent with RM literature that positions experienced professionals more strongly in roles related to institutional navigation and strategic coordination (Schützenmeister, 2010: 23; Whitchurch, 2023: lv).

In contrast, Technical & Content-related competences, which include activities such as understanding institutional knowledge and information processes, structuring knowledge resources, and managing knowledge repositories, show a more differentiated pattern. While understanding institutional knowledge and information processes received one of the highest ratings within this competence cluster, more

specialised technical activities related to knowledge processing and repository management received comparatively lower ratings. This suggests that research managers place greater value on understanding how knowledge and information flow across organisational structures, projects, administrative procedures, and stakeholder interfaces than on the operational management of specific knowledge systems. One possible explanation is that some technical activities may be more commonly performed by other specialised professional roles, such as librarians, IT specialists, or data stewards, or increasingly supported by artificial intelligence and digital tools, although this warrants further investigation. In increasingly projectified and decentralised HEI environments, such process literacy may constitute an important coordination capability that enables continuity, integration, and organisational learning across fragmented research settings. This interpretation further supports understanding RM as a knowledge-integrative and boundary-spanning profession rather than a primarily administrative or technical support function.

Overall, the findings indicate that KM competences function as transversal and integrative professional capabilities within research management practice. They are embedded in the coordination, facilitation, and integration functions that characterise RM work, rather than constituting a distinct technical domain.

REPRESENTATION OF KM COMPETENCES IN RM COMP (RQ2)

The findings reveal a differentiated pattern in the representation of empirically important KM competences within RM Comp. Competences associated with highly rated KM activities – particularly those related to analytical thinking, communication, collaboration, and facilitation – are explicitly articulated in the framework. By contrast, many competences central to knowledge coordination and organisational learning are represented only implicitly or are not addressed at all.

Rather than indicating a simple lack of alignment, this pattern reflects the cross-cutting and integrative nature of knowledge management. KM literature consistently conceptualises KM not as a discrete functional domain, but as an organisational practice embedded in structures, processes, and learning dynamics (Probst et al., 2012: 32-35; North and Kumta, 2018: 12-16; 38-39; Davenport and Prusak, 1998: 163; Lehner, 2014: 50; 121ff). From this perspective, the dispersion of KM-related competences across different areas of RM Comp is not surprising, as many of these competences are inherently transversal.

At the same time, the findings highlight that this implicit representation primarily concerns competences related to systemic understanding and organisational integration, such as organisational structuring and coordination, recognising organisational capabilities, business and organisational context awareness, and learning orientation. These competences are central to linking knowledge processes with organisational goals and to supporting coordination in complex, project-based environments, particularly in higher education institutions where knowledge is fragmented and distributed (Kasvi et al., 2003: 571f; Sokhanvar et al., 2014: 1826).

A similar pattern emerges for technically oriented KM competences. Although these received comparatively lower importance ratings, respondents assigned high importance to understanding institutional knowledge and information processes as well as to KM-related evaluation and process improvement. RM Comp addresses related activities indirectly through competence areas such as coordination, stakeholder engagement, and organisational awareness, yet it does not explicitly articulate the underlying knowledge management perspective that links these activities. Consequently, an important dimension of research management – systemic knowledge coordination across organisational processes – remains conceptually diffuse within the framework.

Taken together, RM Comp captures many KM-related requirements at a functional level, but primarily through implicit and transversal competence descriptions. While this reflects the integrative nature of knowledge management, it also means that the KM dimension of research management remains only partially visible within the framework.

GAPS BETWEEN PRACTICE AND FRAMEWORK (RQ3)

Beyond partial alignment, the study identifies a structural gap between empirically important KM competences and their explicit representation in RM Comp. In particular, competences related to systemic knowledge management, such as KM foundations and methods, knowledge orientation and awareness of knowledge dynamics, and the strategic alignment of knowledge processes, are either only implicitly addressed or not represented at all.

This gap is particularly relevant in higher education institutions, where knowledge production is project-based, distributed, and prone to fragmentation. In such environments, KM functions as a mechanism for integrating knowledge across organisational units, preserving knowledge beyond project cycles, and supporting institutional learning (Kasvi et al., 2003: 571f; Sokhanvar et al., 2014: 1826; Schindler, 2001: 115; Probst et al., 2012: 23-24). The limited visibility of KM-related competences within RM Comp therefore concerns not only technical aspects of knowledge handling, but also the broader organisational capacity to coordinate, institutionalise, and sustain knowledge processes across increasingly complex research environments. In projectified HEIs, where organisational continuity depends on connecting fragmented project knowledge with longer-term institutional learning, these competences may therefore contribute not only to individual professional performance but also to institutional resilience and organisational adaptability.

Importantly, this does not imply that KM should be treated as a separate functional domain within research management. As KM literature emphasises, knowledge management is most effective when embedded in everyday organisational practices rather than isolated within specific roles (Davenport and Prusak 1998: 107). However, such integration depends on making the underlying competences conceptually visible. Without explicit articulation, KM-related activities are more likely to remain fragmented, inconsistently developed, and insufficiently recognised within professional practice.

This points to a conceptual visibility gap: while research managers actively perform knowledge-related functions and operate as boundary-spanning actors facilitating knowledge flows across organisational and stakeholder interfaces (Whitchurch, 2008: 378-380; Schützenmeister, 2010: 23; Agostinho et al., 2018: 23-24), these functions are not explicitly articulated as KM competences within RM Comp. This matters not only conceptually, but also professionally and institutionally. Competence frameworks influence how professional roles are recognised, how training priorities are defined, and which competences become visible in recruitment, career development, and organisational capacity-building. Competences that remain only implicitly represented are less likely to be systematically recognised, assessed, developed, or legitimised within institutional structures. Consequently, the absence of explicit KM articulation within RM Comp may contribute to the continued under-recognition of the knowledge-intensive and integrative dimensions of research management, despite their demonstrated importance in professional practice.

Overall, the findings indicate a partial disconnect between practice and framework articulation. While KM competences are integral to contemporary research management, their predominantly implicit representation within RM Comp may limit their visibility in competence development, professional training, and future revisions of RM Comp and related competence frameworks.

WIDER IMPLICATIONS FOR PRACTICE AND FRAMEWORK DEVELOPMENT

The findings of this study have important implications for RM practice, institutional development, and the further refinement of competence frameworks. By highlighting the central yet under-conceptualised role of knowledge management competences, the results point to the need for a more systematic integration of KM across multiple levels of the RM ecosystem.

IMPLICATIONS FOR RESEARCH MANAGERS

At the individual level, the results underscore the need for a more targeted and differentiated development of KM competences. While research managers already engage in KM-related activities, these competences are often developed implicitly through practice rather than through structured training. This suggests a gap between the practical relevance of KM and its formal recognition in professional development.

The findings further indicate that competence needs vary across career stages. Within this sample, early-career RMs tend to focus more on operational and process-related aspects, whereas more experienced professionals increasingly emphasise strategic and organisational dimensions of KM. This highlights the importance of career-stage-sensitive development pathways, which progressively integrate operational, relational, and strategic KM competences.

In addition to formal training, the results point to the relevance of experiential and social learning formats, such as mentoring, peer exchange, and participation in professional networks. Given the relational and context-dependent nature of KM, such

formats are particularly well-suited to developing competences related to facilitation, knowledge brokering, organisational learning, and cross-functional collaboration.

IMPLICATIONS FOR HIGHER EDUCATION INSTITUTIONS

At the organisational level, the findings suggest that HEIs should integrate KM more explicitly into research management strategies, role profiles, and professional development structures. While research managers increasingly coordinate complex knowledge processes, these responsibilities are often not systematically recognised or supported.

HEIs can strengthen KM by incorporating KM-related responsibilities into RM role descriptions, embedding KM within institutional training programmes, supporting cross-unit communities of practice, and establishing mechanisms for capturing and transferring project knowledge and lessons learned. These measures should be complemented by organisational conditions that promote knowledge sharing, including supportive organisational cultures, leadership commitment, cross-unit collaboration, shared digital infrastructures, and structured reflection on lessons learned, all of which are recognised as key enablers of effective KM in higher education (Tian et al., 2009: 86-90; Rego et al., 2009: 39-43; Tan, 2016: 525; Santos et al., 2024: 2-12). Explicit recognition of KM competences should also extend to institutional reward and compensation structures, ensuring that relational, coordination, knowledge-sharing, and knowledge-brokering activities are appropriately recognised as substantive dimensions of professional RM work rather than remaining largely invisible forms of labour. Without such recognition, relational and coordination-intensive KM activities may be absorbed informally into already demanding roles, potentially contributing to workload pressures and burnout risk among research managers. Appropriate institutional recognition may therefore support not only the contribution of research managers to organisational learning and knowledge coordination, but also their long-term wellbeing and retention within the profession.

IMPLICATIONS FOR PROFESSIONAL ASSOCIATIONS AND TRAINING PROVIDERS

The findings also have implications for professional associations, training providers, and networks involved in the professionalisation of research management. Existing professional development offerings often focus strongly on operational or compliance-oriented aspects of RM, whereas KM-related competences remain comparatively implicit.

Future training programmes could address KM more explicitly as a transversal capability relevant across research management while remaining responsive to different career stages, professional profiles, and organisational contexts. For example, early-career research managers may benefit from developing operational competences related to knowledge processes and systems, whereas more experienced professionals may require stronger emphasis on strategic knowledge coordination, organisational learning, and institutional capability development. Training could therefore combine

foundational KM concepts, such as knowledge as a strategic organisational resource, tacit and explicit knowledge, and core KM processes, with more advanced competences related to facilitation methods, communities of practice, knowledge continuity in project environments, and the strategic use of digital and AI-supported knowledge systems. Such initiatives may also strengthen the professional identity of research managers as actors involved not only in research administration but also in knowledge coordination and institutional learning processes.

IMPLICATIONS FOR THE FURTHER DEVELOPMENT OF RM COMP

The findings also have direct implications for the further development of competence frameworks such as RM Comp. As demonstrated in the analysis, KM-related competences are currently embedded in a fragmented and largely implicit manner across different competence areas, which limits their visibility and coherence.

Several options for strengthening the integration of KM within RM Comp emerge from the findings. One option would be the introduction of a dedicated KM competence area. A second option would be to articulate KM more explicitly as a transversal competence that cuts across existing domains such as communication, stakeholder engagement, strategy, project management, and organisational development. A third possibility would be a hybrid approach that combines transversal integration with more explicit KM-related reference points within selected competence areas.

The findings of this study particularly support the transversal perspective, as KM-related competences were empirically associated with multiple areas of RM practice rather than with a single isolated function. Future revisions of RM Comp could therefore retain this transversal perspective while making KM more explicit through KM-related descriptors, illustrative examples, or expected behaviours embedded within relevant competence domains. Making these KM dimensions more explicit within RM Comp could strengthen competence-based professional development while also informing the design of future RM roles, including job descriptions, qualification requirements, recruitment criteria, career pathways, and professional recognition mechanisms that better reflect the knowledge coordination responsibilities of research managers. Finally, future revisions of RM Comp should continue to involve research managers, professional associations, and higher education institutions to ensure that the framework remains aligned with evolving professional practice and organisational needs across the European research and innovation landscape.

CONCLUSION

This study provides one of the first empirical examinations of knowledge management competences within research management. By integrating qualitative framework analysis with quantitative evidence from research managers across European higher education institutions, it demonstrates that KM competences constitute a central dimension of RM practice rather than a peripheral or specialised activity.

The findings show that KM competences are consistently perceived as important across RM practice. In particular, competences related to learning and cultural facilitation, and strategic coordination are prioritised, while technical competences play a comparatively less central role. This indicates that KM in research management is primarily understood as a relational, coordinative, and systemic capability, rather than as a purely technical function. Moreover, the results suggest that the importance of strategic KM competences increases with professional experience, pointing to a developmental dimension of KM competence profiles.

The analysis reveals that KM competences are only partially and predominantly implicitly represented in RM Comp. While many relevant competences are functionally covered within the framework, they are not articulated as part of a coherent KM competence domain. In particular, foundational and strategic aspects of KM, such as knowledge orientation, KM methods, and systemic knowledge processes, remain underrepresented. This highlights a gap between the practical relevance of KM and its conceptual integration into competence frameworks.

By addressing this gap, the study contributes to both research and practice. It provides one of the first empirical analyses of KM competences in research management and contributes to strengthening the conceptual connection between KM theory and RM practice. More broadly, the findings suggest that KM should not be understood simply as an additional competence area within research management, but rather as a way of understanding core dimensions of RM work itself. In increasingly projectified, interdisciplinary, and knowledge-intensive HEI environments, research managers operate as connectors of people, processes, and knowledge across organisational boundaries. In this sense, the study supports a conceptualisation of research managers not only as administrative support professionals, but also as knowledge brokers and coordinators who contribute to organisational learning, knowledge integration, and institutional continuity within research organisations.

Despite these contributions, the study is subject to several limitations. First, the sample size ($N = 119$) and the use of non-probability sampling limit the generalisability of the findings. Participation was voluntary and non-response bias was not assessed. Although the predominantly female composition of the sample broadly reflects gender distributions reported in previous RM surveys (e.g. Zsár et al., 2024), this similarity should therefore not be interpreted as evidence of representativeness. Second, the sample is characterised by a relatively high level of professional experience (mean ≈ 10 years), which may influence the prioritisation of strategic competences, as reflected in the results for professional seniority (H01). Third, the study is based on self-reported perceptions of RMs from European HEIs, which may limit the generalisability of the findings to other regional or institutional contexts. Fourth, the qualitative phase was based on a purposive selection of three KM competence frameworks rather than an exhaustive review of existing frameworks. While TFPL (1999) reflects an earlier stage of KM practice and Saito (2007) was developed in a non-European context, their perspectives were complemented by the recent European GfWM competence

catalogue (Mittelmann et al., 2024). Nevertheless, the temporal and geographical heterogeneity of the selected frameworks may affect their direct comparability with the contemporary European RM Comp and should be considered when interpreting the framework alignment results.

These limitations point to several avenues for future research. Further studies could employ qualitative approaches, such as interviews or case studies, to gain deeper insights into how KM competences are enacted in practice. In addition, larger and more representative samples would allow for more robust validation of the findings. The present study also did not examine whether the perceived importance or institutional recognition of KM competences varies according to gender or other demographic and intersectional characteristics. Previous research has suggested that women-dominated occupations, particularly those involving caring or communal activities, may be subject to lower levels of recognition and valuation (Block et al., 2018; OECD, 2025). Given the predominantly female composition reported in existing RM surveys and the relational, facilitative, and coordination-oriented nature of many KM competences identified in this study, future research could explore whether gendered or other intersectional and structural patterns influence how such competences are perceived, valued, and recognised within research management. Future research could also examine specific RM profiles in greater depth, particularly emerging or expanding roles in knowledge valorisation and technology transfer, where knowledge brokering, transfer, and coordination may constitute especially prominent dimensions of professional practice. Comparative studies across institutions, countries, and global regions would be particularly valuable in assessing the transferability of the results and identifying contextual differences in KM competence requirements. Extending the survey instrument to other regions could further support the development of internationally applicable competence frameworks.

Overall, the findings support the central argument advanced in this paper: knowledge management is not merely an additional competence required by research managers, but rather a conceptual lens through which many of the profession's core activities can be understood. From this perspective, research management itself can be viewed as a form of organisational knowledge coordination, in which research managers connect people, projects, institutional structures, and stakeholder networks while facilitating organisational learning and knowledge integration. Recognising RM through a knowledge management lens offers not only a more comprehensive understanding of the profession, but also a stronger foundation for future competence frameworks, professional development, and institutional capacity-building within increasingly complex research ecosystems.

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APPENDIX

DATA AVAILABILITY STATEMENT

Supplementary materials, including the survey instrument, anonymised dataset (including codebook), operationalisation matrix, and detailed RM Comp mapping, are openly available via the University for Continuing Education Krems repository (DOOR) at <https://doi.org/10.48341/5z71-v589>.

This study was conducted as part of a master's thesis at the University for Continuing Education Krems. The thesis, including additional methodological details and appendices, is publicly available via the institutional repository (DOI: <https://doi.org/10.48341/hfmv-f822>).

A. ITEM-LEVEL IMPORTANCE RATINGS OF KNOWLEDGE MANAGEMENT COMPETENCES

Table 1: Strategic & Managerial Competences (SPSS output, own representation)

Q5: Importance of Strategic & Managerial Competence Items: Means and Standard Deviations					
	N	Minimum	Maximum	Mean	Std. Deviation
Item 3: Analyzing and improving organizational processes	119	1	5	4,29	,875
Item 2: Recognizing the capabilities of organizational unit for gap identification	119	1	5	4,21	,973
Item 1: Analyzing the external environment to identify future knowledge needs	119	1	5	4,10	1,045
Item 9: Balancing different institutional interests to enable effective collaboration	119	1	5	3,99	1,004
Item 5: Initiating and managing organizational change	119	1	5	3,77	1,085
Item 6: Developing a knowledge management strategy	119	1	5	3,67	1,236
Item 4: Measuring/evaluating knowledge assets and intellectual capital	118	1	5	3,42	1,143
Item 10: Managing knowledge management-related projects	119	1	5	3,33	1,290
Item 7: Supporting the transformation of research results into practical outcomes	118	1	5	3,29	1,334
Item 8: Interpreting organizational culture	118	1	5	3,29	1,185
Valid N (listwise)	116				

Table 2: Technical & Content-related Competences (SPSS output, own representation)

Q6: Importance of Technical & Content-related Competence Items: Means and Standard Deviations					
	N	Minimum	Maximum	Mean	Std. Deviation
Item 1: Understanding institutional knowledge and information processes	119	1	5	4,53	,734
Item 2: Applying basic knowledge management methods	117	1	5	3,73	1,005
Item 10: Addressing ethical, legal, and compliance aspects	119	1	5	3,71	1,231
Item 6: Organizing institutional knowledge (policies, guidelines)	116	1	5	3,66	1,202
Item 4: Capturing and preserving expertise	117	1	5	3,62	1,252
Item 7: Setting up and maintaining digital systems	117	1	5	3,48	1,134
Item 5: Managing and updating repositories and databases	116	1	5	3,33	1,236
Item 8: Using new technologies like AI-based applications	118	1	5	3,31	1,145
Item 9: Migrating, contextualizing, and transforming data	114	1	5	3,24	1,229
Item 3: Supporting publication and dissemination of research results	118	1	5	3,14	1,316
Valid N (listwise)	113				

Table 3: Learning & Cultural Facilitation Competences (SPSS output, own representation)

Q7: Importance of Learning & Cultural Facilitation Competence Items: Means and Standard Deviations					
	N	Minimum	Maximum	Mean	Std. Deviation
Item 5: Providing training, coaching, and learning opportunities	118	1	5	4,29	,907
Item 7: Acting as a knowledge broker by connecting people	119	1	5	4,08	1,018
Item 1: Promoting a culture of open and responsible knowledge sharing	118	1	5	4,05	,986
Item 6: Encouraging creativity, innovation, and continuous learning	118	1	5	3,97	1,139
Item 2: Ensuring respect for IP rights and academic integrity	118	1	5	3,92	1,026
Item 8: Creating/supporting cross-functional teams	119	1	5	3,82	1,127
Item 9: Promoting inclusive knowledge sharing across different backgrounds	117	1	5	3,71	1,099
Item 4: Cultivating communities of practice and learning networks	119	1	5	3,71	1,181
Item 3: Supporting structured reflection and lessons learned	117	1	5	3,60	1,218
Valid N (listwise)	115				

B. DETAILED MAPPING OF KM COMPETENCES TO RM COMP

Table 4: Conceptual Mapping of the Highest-Rated Knowledge Management Competences to RM Comp

Comp. ID	KM Competence	Short explanation of KM Competence	Representation in RM Comp	Notes on RM Comp Positioning
Strategic & Managerial Competences				
S&M 05	Organisational structuring and coordination	The ability to design, adapt, and coordinate organisational structures and instruments to support effective work arrangements.	Implicit	Cross-cutting competence; primarily framed as an enabling rather than explicitly operational competence

Comp. ID	KM Competence	Short explanation of KM Competence	Representation in RM Comp	Notes on RM Comp Positioning
S&M 07	Conceptual and analytical thinking	The ability to analyse complex information, recognise patterns, and synthesise insights to support structured decision-making.	Explicit / transversal	Transversal skill articulated within the cluster Cognitive Abilities among several competences
S&M 08	Recognizing organization's capabilities	Realizing how value is created within the organization, understanding the structure and processes of the organization.	Implicit	Cross-cutting competence; embedded in cognitive abilities (analytical and reflective judgement) and line management rather than articulated as a standalone competence
S&M 09	Business and organisational context awareness	Understanding and interpreting both external and internal organisational contexts relevant to knowledge-related decisions.	Implicit	Cross-cutting competence; primarily reflected in subject matter expertise (research, strategy, and policy development) and supported by transversal cognitive abilities
S&M 10	Developing a KM strategy	The ability to identify knowledge valuable to the organisation and design a long-term, goal-oriented approach to managing it.	Implicit / no KM focus	Cross-cutting competence; no KM focus; RM Comp covers strategic planning and knowledge-related activities across several clusters, but does not explicitly articulate the development of a dedicated knowledge management strategy
S&M 11	Strategic thinking	The ability to anticipate future developments and align decisions with long-term organisational goals.	Explicit	Clearly articulated within the cluster Cognitive Abilities – competence Strategic Planning
S&M 12	Responsibility & accountability	The ability to act reliably and ethically and to take ownership of decisions and outcomes in line with organisational expectations.	Explicit	Clearly articulated within the cluster Cognitive Abilities – competence Reliability and Trustfulness

Knowledge Management Competences in Research Management

Comp. ID	KM Competence	Short explanation of KM Competence	Representation in RM Comp	Notes on RM Comp Positioning
S&M 13	Handling organizational politics	The ability to navigate organisational interests, power dynamics, and informal structures.	Implicit	Negotiation and alignment of interests are addressed within Stakeholder Engagement and Communication, while organisational politics are implicitly covered.
S&M 15	Self-confidence & adaptability	Acting autonomously and confidently while adapting to changing conditions and taking responsibility for professional development.	Implicit / transversal	Transversal skill; adaptability is explicitly covered in Cognitive Abilities; self-confidence and autonomy are only implicitly addressed in Line Management and Talent Development.
Technical & Content-related Competences				
T&C 02	KM foundations and methods	Knowledge of core KM concepts and methods for systematically managing organisational knowledge.	Absent	KM-specific foundations and methods are not explicitly delineated in RM Comp.
T&C 03	KM measurement, evaluation, and evidence	The ability to measure and evaluate the impact and value of KM activities using evidence-based indicators.	Implicit	Cross-cutting competence; Monitoring and evaluation are primarily addressed within the cluster Research Project Oversight and supported by Subject Matter Expertise and Line Management; KM-specific metrics are implicitly covered.
T&C 06	Business process analysis and improvement through KM	The ability to analyse and improve organisational workflows by integrating KM practices.	Implicit / no KM focus	Cross-cutting competence; Process-related activities are addressed within the clusters Technical Proficiency, Cognitive Abilities, and Subject Matter Expertise; no KM focus
Learning & Cultural Facilitation Competences				
L&C 02	Learning orientation	Openness to continuous learning and reflective development of one's own and others' competences.	Implicit / transversal	Transversal skill; learning-related aspects mainly addressed within the clusters Line Management (as advanced level) and Cognitive Abilities, with elements spanning other clusters

Comp. ID	KM Competence	Short explanation of KM Competence	Representation in RM Comp	Notes on RM Comp Positioning
L&C 03	Interpreting organization's culture	Understanding how organisational values, norms and practices shape knowledge-related behaviour.	Implicit	Cultural sensitivity is explicitly included as a competence within the cluster Cognitive Abilities, while references to understanding the organisational culture also appear in Line Management and Stakeholder Management, mainly at expert level; no standalone competence for interpreting organisational culture is articulated.
L&C 04	Consulting, mentoring & facilitation	Providing guidance, mentoring, and facilitation to support learning and knowledge use.	Explicit / transversal	Transversal skill articulated within the cluster Line Management and Talent Development among several competences, and other clusters
L&C 05	Interpersonal and relationship competence	The ability to build and maintain constructive professional relationships that support collaboration and knowledge exchange.	Explicit / transversal	Transversal skill; mainly addressed within the clusters Communication and Stakeholder Engagement, with elements spanning other clusters
L&C 06	Communication competence	Convey information clearly and appropriately, facilitate dialogue, and support knowledge exchange with diverse stakeholders	Explicit	Clearly articulated within the cluster Communication
L&C 07	Didactic competence	Designing and delivering learning activities that support knowledge transfer.	Implicit	Training and coaching are primarily addressed within Line Management and Talent Development and secondarily within Communication, while explicitly didactic competences remain implicit
L&C 08	Collaboration and teamwork	Working effectively with others to achieve shared goals.	Explicit / transversal	Transversal skill; explicitly addressed within the clusters Stakeholder Engagement, Line Management and Communication

Comp. ID	KM Competence	Short explanation of KM Competence	Representation in RM Comp	Notes on RM Comp Positioning
L&C 09	Knowledge orientation and awareness of knowledge dynamics	Understanding knowledge as a strategic resource and how it is created, shared, and used across individuals and organisations.	Absent	RM Comp addresses reflection, learning, and information handling across several clusters, but does not explicitly conceptualise knowledge orientation or knowledge dynamics as a competence

Note: In this mapping, “transversal skill” refers to personal, social, or cognitive attributes that operate across multiple RM roles and competence clusters, whereas “cross-cutting competence” refers to functional or operational capabilities distributed across several RM Comp clusters without being articulated as standalone competences.

BIOGRAPHIES

Joanna Höfinghoff is a Research Manager at the Department for E-Governance and Administration, University for Continuing Education Krems, Austria. Since 2020, she has supported national and European research projects across the full project lifecycle, with expertise in research funding, proposal development, project management, research governance, and research data management. Her professional work and research focus on strengthening institutional research support through knowledge management, capacity building, and the optimisation of research management processes. Joanna is an IPMA Level D certified project manager, a graduate of the EURESTMA European Research and Transfer Management Certificate Programme, and the recipient of the EARMA Emerging RMA Talent Award. This article is based on her MBA thesis on knowledge management competences for research managers in European higher education institutions.

Cristina Oliveira leads research management at the MagIC Research Center, hosted at NOVA Information Management School (NOVA IMS), Universidade NOVA de Lisboa, Portugal. She has more than 15 years of experience as a Research Manager (RM) across different institutional contexts, with expertise spanning research funding advisory, science policy, post-award project management, science communication, and institutional research strategy. Over the past decade, she has supported the development and submission of competitive research proposals while contributing to research capacity building and the professionalisation of research management practices. Cristina has played an active role in strengthening the research management profession both nationally and internationally. She was a board member and contributor to PIC – the Portuguese association for Professionals at the Interface of Science – promoting professional recognition and community building for RMs in Portugal. At the European level, she contributed to the EU-funded foRMAtion and RM Roadmap projects and currently leads the NOVA IMS participation in the CITADELS projects, focused on professional development and capacity building for research managers across Europe, particularly in WIDENING countries. She is also Co-Principal

Investigator of RAAAP-3, a global study on Research Administration as a Profession, and a contributing author to *The Emerald Handbook of Research Management and Administration Around the World*.

AUTHORS' CONTRIBUTION STATEMENT

Joanna Höfinghoff  0009-0003-2997-4212:  Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Project administration, Resources, Validation, Visualization, Writing – original draft, Writing – review & editing

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