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THE BODY OF KNOWLEDGE ON THE MANAGEMENT AND ADMINISTRATION OF SCIENTIFIC RESEARCH WORLDWIDE AND IN CUBA: A HOLISTIC-CONFIGURATIONAL APPROACH

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ABSTRACT

What is new?	Despite its critical role in research ecosystems, Research Management and Administration (RMA) does not yet have standardised recognition and training frameworks in underdeveloped regions, such as Latin America/Cuba. This article addresses this gap by proposing a comprehensive model for systematising that profession. A Holistic-Configurational model of RMA training is presented, adapted for regions with incipient RMA systems and framed as an emerging discipline.

What was the approach?	The application of Holistic-Configurational Theory is used to define the conceptual elements of RMA and prioritise training processes, creating a scalable framework.
What is the academic impact?	The Academic Impact establishes RMA as a distinct discipline in understudied regions, advances theoretical discourse on research management, and paves the way for future empirical studies.
What is the wider impact?	While the wider impact lies in contributing to global research collaboration, improving the competitiveness of funding in under-represented regions, and supporting policy alignment for innovation ecosystems.
Keywords	Research Management and Administration (RMA), Holistic-Configurational Theory, Global Professional Training, Cuba/Latin America Research Policy

INTRODUCTION

There is no single way to define scientific research management that is accepted in all countries or scientific systems, and what is meant by ‘could be a research manager' in Spain may be slightly different from what is meant in Germany, the United Kingdom or the United States, for example.

The field of study of Research Management and Administration (RMA) is based on several terms that describe the different stages of the scientific research process. One example is the distinction between the 'pre-award stage', which focuses on project preparation and acquisition, and the 'post-award stage', which dedicated to the execution and administration of financial resources. While this classification has some utility, it is important to note that, in professional practice, the two stages often overlap and are interrelated, without this division significantly affecting overall work of the manager.

Among the well-known conceptual definitions of RMA, it is worth noting that in a seminal article by John Kirkland (2008), the author identifies and analyses the emergence of RMA as a distinct and crucial profession, especially in universities in developing countries. He approaches the definition of RMA not as a static concept, but as a set of evolving functions, competencies and roles, as well as a strategic function that acts as a bridge between the scientific community (researchers) and funding, governmental and industrial entities. In addition, he lists and describes the areas that define the scope of work of a research management professional, emphasising that research management is a hybrid profession and that its consolidation requires institutional recognition, the development of clear career paths and specialised training.

The evolving complexity of research funding and regulation since World War II has led to the emergence of new roles and created a need for expanded expertise (Kulakowski, 2023; Kerridge, Poli, Yang-Yoshihara, 2023). It is true that RMA is undergoing significant

development in Europe and elsewhere. However, although RMA is a profession that has been asserting itself through its own particular dynamics, it needs all the dissemination of the experiences of managers and administrators to help solidify its own culture with the particularities of the contexts in which it develops.

Therefore, these processes are addressed here, i) by sharing the vision of the authors of this work and considering the experiences of different countries, and ii) by proposing an approach based on Holistic-Configurational Theory, essentially for countries with less development in these matters.

The Holistic-Configurational Theory constitutes a methodological and epistemological framework that integrates the totality of the processes by considering their components (configurations, dimensions, links, structure of relations and systematising axis) with a dialectical approach that enables the holistic-configurational understanding, explanation and interpretation of the phenomena of reality.

A configuration is the synthesis of the essential elements of a research process in a dynamic way, integrating its theoretical, practical and axiological dimensions to understand it as a holistic and configurational, interdependent whole.

To demonstrate its usefulness, Holistic-Configurational Theory can be applied as an analytical framework in the field of organisational studies and in research affiliated with the Academy of Management. Its holistic-configurational and dialectical approach addresses the complexity of social 'Grand Challenges' (George et al., 2016) and meets the criteria for a substantial theoretical contribution by explaining the nature, processes and reasons behind organisational phenomena (Whetten, 1989).

Using this framework would allow for a more in-depth and integrative analysis of complex phenomena, such as the dynamics of organisational change or corporate culture, by going beyond linear approaches and making use of the wide range of research methods that are central to the mission of the Academy of Management (AoM, 2025; Bansal & Corley, 2011).

RMA does not yet have standardised frameworks for recognition and training in underdeveloped regions such as Latin America/Cuba despite its critical role in research ecosystems. This position paper proposes overcoming this peripheral condition through a ‘glocal’ [global + local] model of professional identity, which ensures both international recognition and contextual relevance. A model, it is suggested, that focuses on regions with nascent RMA systems and frames RMA as an emerging discipline.

This paper draws on the body of knowledge on RMA that has emerged from the growing literature on the subject produced by leading academics and practitioners over the years. It also incorporates the authors' experiences and views on the subject, as well as articles related to the evolution of RMA itself, project management, research and knowledge management, the formative process of scientific research management, and other conceptual elements of international RMA.

METHODOLOGY

This article aims at proposing a new integrative approach, based on the application of the scientific method within a systemic process. This approach refers to the Holistic-Configurational Theory.

For this purpose, we analysed and selected the literature from 2019 to 2024 in order to provide for an overall synthetic view of the definition(s) of RMA in different countries. In particular, we report on the current recognition of RMA, the level of professionalism, the level of development and the evolution of research management per country and globally.

The authors' experiences and views have contributed not only to this literature review, but also to the position taken in the paper. Their backgrounds and experience in Europe and Cuba have also guided the selection of the wide variety of sources and approaches.

The study examines national cases to continental frameworks for a review that prioritises contextual diversity, while identifying transnational patterns at the same time. The Emerald Handbook (Kerridge et al., 2023), a seminal compilation of RMA standards, served as the foundational corpus. To broaden the source base, backward citation chaining was applied, tracing references in the Handbook back to earlier works, and forward chaining was applied to capture, as cited above, recent publications, ensuring both historical depth and contemporary relevance.

Holistic-Configurational Theory (Fuentes González, 2009) provided both the theoretical framework and the central methodological scaffolding that guided the analysis process. Its application enabled the integration of the disparate findings of the literature review and the authors' experience into a coherent conclusion that went beyond the mere description of individual elements.

This perspective was put into practice by following a methodological pattern identified in previous health-related research in Cuba. This pattern consists of the following phases.

Systemic configurations were identified. This involved analysing the information to discern the key dimensions and their dynamic interrelationships, rather than considering them as individual components.

The underlying integrated logic was revealed. The analysis aimed to discover the central principle or dynamic that explains how seemingly contradictory dimensions come together to form a meaningful and operational whole in the studied training process.

A holistic-configurational understanding was constructed. The ultimate goal was to configure an interpretative model that would reveal the essence of the process, its dynamics and the results arising from this interaction, following this logic of synthesis.

This approach was exemplified and validated by pre-existing configurational models that demonstrated their transformative effectiveness. One example is the Teaching-Service-Research Integration Logic (Miranda, 2016), which showed how configurational

interaction can lead to the expansion of higher teaching categories. Similarly, Investigative-Resolutive Logic (García Pérez, 2016) and Scientific-Investigative Management Logic (Gutiérrez Rojas, 2021) have shown that specific configurations can develop transformative skills in students and professionals. Likewise, Carrera Martínez's (2024) model of the dynamics of professional development for specialists in angiology and vascular surgery established a logic integrating the appropriation of content and the systematisation of research and attentional skills. This substantiates a training programme that enhances comprehensive care for peripheral vascular diseases.

Guided by this methodological principle, the present analysis was not limited to listing elements but focused on revealing these dynamic interrelationships. Thus, Holistic-Configurational Theory was the tool that allowed us to synthesise the evidence and experience into our own model, moving from the description of findings to the configuration of a holistic-configurational understanding of the phenomenon under study.

Holistic-Configurational Theory – Substantiation of the Proposal

Holistic-Configurational Theory (Fuentes González, 2009) is an epistemological and methodological framework that proposes an integrated interpretation of natural, social and thought processes, emphasising their dialectical, complex and holistic-configurational character. From the epistemological point of view, it recognises processes as dialectical totalities, emphasises dialectical hermeneutics as the axis of scientific knowledge and has as central categories the configurations or dynamic syntheses that emerge from the relationships between features and qualities of the processes, expressing higher levels of interpretation; the dimensions or movements and transformations that reveal new qualities in the process, with regularities that explain the behaviour of the latter by integrating configurations, dimensions and links. It guides research through procedures such as identifying configurations, revealing dialectical relationships and modelling structures of relationships and promotes a transdisciplinary approach that recognises the multidimensionality of phenomena and the active participation of the subject in the construction of knowledge.

Overview of International Experiences in RMA

United States: The Established Profession

According to Kerridge and Scott (2018), the United States was the first nation to establish RMA as a formalised profession. While other regions historically treated RMA tasks as secondary responsibilities integrated into existing roles, the US developed structured career pathways and professional benchmarks to institutionalise the field. This divergence is notable compared to areas where RMA is still evolving as a "semi-profession", lacking full recognition and a defined identity. The US system is characterised by complexity, supported by multi-level funding from federal agencies, such as the National Institutes of Health (NIH) and the National Science Foundation

(NSF), as well as other state entities and private organisations, which also shape the operational guidelines. Notably, over the last two decades, a persistent shortage of skilled research managers has catalysed initiatives to enhance professionalisation and expand ongoing training programs in the sector.

Europe: Structured Frameworks and Continental Collaboration

This region exemplifies institutional maturity in RMA, driven by transnational initiatives. Poli, Oliveira & Zsár (2023) link Europe's progress to its high professionalisation levels, where RMA is recognised as critical to scientific ecosystems. Germany has a strong research infrastructure, led by the Deutsche Forschungsgemeinschaft (DFG), which funds and regulates projects. The FORTRAMA network ensures high management standards, prioritising leadership and resource management training. The UK, through Research England (part of UK Research and Innovation), fosters university-industry collaboration, while the Association of Research Managers and Administrators (ARMA) plays a key role in training and policy integration. The CARDEA EU Project has been pivotal, culminating in the RM Comp Competence Framework (O'Regan & Zsár, 2024), which defines 11 specialised roles (e.g. EU Funds Manager, Innovation Officer) and seven competency domains, from technical proficiency to stakeholder engagement. This framework not only standardises RMA but also aligns it with the strategic goals of the European Research Area (ERA).

Africa: South Africa as a Global Leader in Professionalising and Promoting RMA

South Africa leads the RMA on the continent, with SARIMA (Southern African Research and Innovation Management Association) and the National Research Foundation (NRF) leading the way in building research and innovation management capacity. Among other countries, Kenya has demonstrated significant progress, especially in critical areas such as food security, manufacturing, health coverage and higher education. The National Council for Science and Technology (NACOSTI) is instrumental in promoting collaborative research. However, the region faces significant challenges in relation to the training of RMA staff (Rampioni & Wangui Hunja, 2023).

Latin America: A Paradoxical Landscape

In Latin America there are favourable conditions for the development of RMA, in particular countries like Brazil, Chile, and Mexico have formalised RMA structures, positioning the region as a "natural laboratory" for innovation (Aguinis et al., 2020). Yet challenges persist: despite regional advancements, Latin American professionals constitute only 2% of the US-based Academy of Management, reflecting global power asymmetries in research governance. Brazil has institutionalised RMA with CAPES and CNPq (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior; CNPq Conselho Nacional de Desenvolvimento Científico e Tecnológico) focusing on funding and training, particularly at the University of São Paulo. In Mexico, CONACYT (Consejo

Nacional de Humanidades, Ciencias y Tecnologías) has promoted research management, though challenges persist in standardising processes.

In Cuba specifically, there have been recent changes in the system of research programmes and projects with a new regulation for the System of Science, Technology and Innovation Programmes and Projects (CITMA, 2025), that introduces significant reforms in the management of scientific research, focused on professionalising processes, encouraging results and broadening the participation of key actors. The most relevant changes are the introduction of the project manager and Programme Management Teams made up of scientific leaders, executive secretaries and multidisciplinary groups of experts, guaranteeing rigorous evaluation and strategic management. As a trend, the separation of technical and administrative roles to optimise resources to contribute to the professionalisation of scientific management stands out. These changes reflect an effort to modernise the Cuban research system, to balance academic rigour, practical applicability and social responsibility, in tune with global challenges and local needs.

Professional Associations

Beyond national frameworks, the global consolidation of research management as a profession has been decisively driven by professional associations. Organisations such as the National Council of University Research Administrators (NCURA) in the United States and the European Association of Research Managers and Administrators (EARMA) have played a key role in standardising good practice, developing skills, and fostering collaboration (Kerridge & Scott, 2018). These associations offer certification and continuing education programmes that raise professional standards and advocate for institutional recognition of the profession. They act as custodians of identity and quality in the field (Poli, Oliveira & Zsár, 2023).

This associative movement transcends regional boundaries through initiatives such as INORMS (the International Network of Research Management Societies), which acts as a global umbrella organisation. INORMS facilitates the exchange of knowledge and harmonisation of standards among its member societies, which are located on all continents. This promotes a cohesive professional identity and fosters international collaboration in research (O'Regan & Zsár, 2024). The presence of such robust networks is an important indicator of the maturity of the RMA ecosystem in a given region and is a vital driver of its development in contexts where the profession is still emerging.

The Struggle for Recognition

RMA is an emerging profession with broad and multifaceted boundaries, whose institutional maturity in a country depends directly on the level of professionalisation of its managers, a key factor for its recognition (Poli, Oliveira & Trentini, 2023). However, in many countries, the profession lacks visibility and understanding, as it is not formally recognised (Virágh et al., 2019). Taking on the role of RMA is often a personal decision, and its professionalisation requires rigorous preparation due to the competitive and

uncertain work environment. The latter authors emphasise that, as this is a field that is not yet consolidated, a solid theoretical framework is required to structure and professionalise it effectively.

A central element, as defined by Agostinho et al. (2018), and emphasised by Borrás et al. (2023), is that RMAs operate at the interface between science and management, being perceived mainly as support staff for researchers. These authors stress that the lack of professional recognition and visibility demands not only greater institutional validation, but also the definition of clear criteria and standards. This is because their training does not follow a single path, but prioritises transferable skills such as flexibility, adaptability, multitasking, proactivity, teamwork, resilience, empathy and versatility.

In terms of their profile, Poli and Taccone (2023) differentiate RMAs from traditional educational managers, highlighting their hybrid nature and specialised functions. Although RMAs are developed in research institutions, Poli, Kerridge, Ajai-Ajagbe & Zornes (2023) describe them as non-linear career paths, often taken without prior intention, and with a marked female participation (Oliveira et al., 2023).

These elements show that the approach to RMA varies according to geographical, institutional or disciplinary perspective. Moreover, the predominance of soft skills in these hybrid professionals – whose versatility blurs disciplinary boundaries – positions them as actors without clear demarcations, which makes it difficult to define them as a unified professional field.

Emerging Global Trends

There is evidence of progressive recognition of RMA professionals in regions such as North America, Western Europe, parts of Eastern Europe, Australasia, some areas of Africa and Asia. However, there are significant differences in the visibility of the profession and the existence of defined career paths, which pose challenges for the recruitment and retention of talent.

Specifically in Cuba, despite the existing regulations on science and innovation and its advances in this area, there are no significant precedents in the management and administration of scientific research as a profession, although, as mentioned above, a new regulation for the system of science, technology and innovation programmes and projects has recently been approved in Cuba, which deepens the organisation and development of these processes and for the first time officially establishes the introduction of the project team manager (CITMA, 2025).

Associations specialising in RMAs play an essential role in facilitating networking, knowledge dissemination and professionalisation through accreditation and certification programmes. These organisations not only strengthen the sense of belonging among RMAs at the local level but also facilitate the exchange of good practices at the international level, thereby contributing to the legitimacy of the profession.

In this regard, it is clear that the development of transferable skills, such as communication, collaboration, and intercultural understanding, are essential to effectively manage the complexities of global research. Likewise, the importance of promoting diversity, equity, and inclusion in the profession is highlighted, given the notable majority of women – more than 70% (O'Regan & Zsár, 2024). Moreover, challenges associated with representation in leadership positions and the emotional well-being of professionals, as well as the development of training strategies, capacity building, and accreditation programmes that are essential to this complex discipline need also to be considered.

The Way Forward

The Training of Managers

For the authors of this article, the training of scientific managers and administrators has not been a common practice. Although the Cuban System of Science and Technological Innovation in Health is structured in programmes and projects and has a solid health research system oriented towards national priorities, the recent inclusion of managers as active members in research and innovation projects requires an active and in-depth training process.

Thus, RMA should not only be seen as an emerging discipline, more advanced in some countries and still lagging behind in others. Rather, it should be approached on the basis of a structured system of categories (configurations) grouping together substantive functions, in which the integration of training and scientific research constitutes an essential logic of its dynamics. It is important to understand the dynamics of the relationships established between its components. This is the only way to identify the synergy that determines that "*the whole is more than the sum of its parts*" and to fully understand the whole process.

Following this line of thought, it is reasonable to consider that RMA could be viewed as a system structured in categories that group together substantive functions, in which knowledge management integrates the systemic logic of these processes. On the basis of these elements, the importance of maintaining an open dialogue to understand the complexity of RMA as a holistic-configurational concept and the need to refine the mechanisms and relationships to be developed in this field of study are recognised.

The Administrative and Management Processes

This paper assumes that RMA is a process that is consciously and deliberately carried out through the broad system of social relations and interactions among managers, and between managers and other external actors and stakeholders. The purpose of RMA is scientific work, the construction of knowledge, the contribution to problem solving and the ongoing training of the subjects involved in the research process.

As indicated in the previous section, it is essential to consider the significant experience in Europe and beyond in terms of administrative management of research (Kerridge, Poli,

Yang-Yoshihara, 2023). However, this paper acknowledges the lack of global initiatives and the predominance of local initiatives (Yang-Yoshihara, Kerridge, Poli, 2023) aimed at training managers and administrators of scientific research, and a related lack of organisational recognition of the latter.

Likewise, on the basis of the above theoretical references, the possibilities of establishing an approach to the training of these professionals and their adequate development as a profession in general will be analysed, as well as the possibility of establishing the same approach to RMA as a profession in Latin America, with particular emphasis on Cuba.

To this end, a new perspective is proposed (Figure 1), based on the integrated vision of scientific research and innovation management as a multidimensional discipline (Gutiérrez, 2021), and based on the recognition that there is still no clear understanding of the logic of structuring research as a totalising process; of the processes involved in the management and administration of scientific research; of its unity; of its levels of direction and strategy; and of its projection.

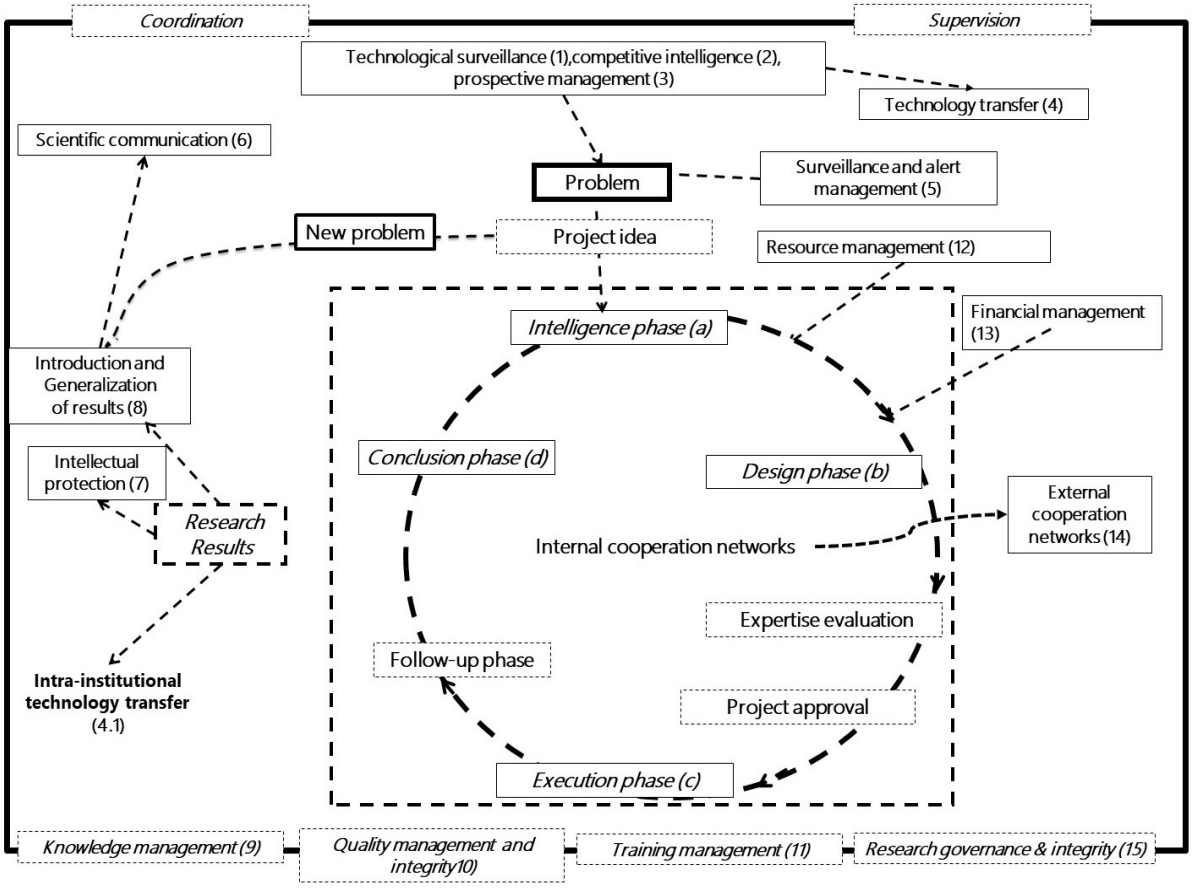

Figure 1. Scientific research management model (Authors' own elaboration)

As illustrated in Figure 1, in order to address the solution to a problem, in addition to specific health surveillance and alert actions in that area (5), an in-depth diagnostic exercise (strategic intelligence) is required, including technology watch (1), competitive intelligence (2) and foresight management (3).

The system framework is represented by the outer rectangle. The numbered components (1-14) within it represent the key interrelated functions of the RMA. The system is coordinated through the central coordinating axis (a-d), which represents the project life cycle (design and implementation), integrating, synchronising and aligning all functions, acting as the main driving force of the system in ensuring its overall coherence.

Technology transfer (4) establishes knowledge relationships between institutions and defines a subset (4.1) that facilitates this process within the institutions themselves. Scientific communication (6) and intellectual property protection (7) are functions of dissemination, outreach and exchange, as well as the safeguarding and clarity of knowledge, respectively. The implementation of research results, their dissemination and use in society is specified here in their introduction and/or generalisation (8) to establish links between research and scientific practice, and the expansion and integration of findings.

The System has three cross-cutting components that organise and systematise the output: knowledge management (9) to ensure the development of an organisational memory and facilitate the management of this intangible asset; quality and integrity management (10), essential for continuous improvement and to ensure that research processes comply with established methodological and ethical standards; training management (11), an indispensable guarantee in the development of human capital; and research governance and integrity (15), which provides the institutional and regulatory framework governing the conduct of research, encompassing ethical oversight, compliance with research regulations, data integrity, the management of conflicts of interest, and institutional accountability mechanisms that ensure responsible research practice throughout the entire project lifecycle.

Added to these is a system of continuous monitoring system, linked in particular to quality and integrity management (10) and research governance (15), and supported by strategic oversight (1, 2, 3), which monitors performance, evaluates outcomes, ensures continuous improvement and verifies that research activities remain compliant with applicable ethical and regulatory frameworks.

Finally, human resource management (12) and financial management (13), together with internal and external cooperation networks (14), constitute the infrastructure that underpins the development of processes.

By considering the life cycle of projects as the articulating axis and defining a structure in dynamic and interrelated configurations, a tool is offered that contributes to the structuring of comprehensive systems in their management processes, while maintaining flexibility that contributes to innovation and adjustments to changes that occur.

The proposal is characterised by: the interconnection of its components (systemic integration); the flexibility to reorganise these components in line with the demands of each project phase (dynamic configuration); the circulation of resources and information in different directions (bidirectionality); and the hierarchy of levels of varying complexity that are revealed and expressed by particular qualities and norms, where each lower phase is

included in its higher level and should be seen as an element that forms part of it (recursivity).

The models shown in Figures 1 and 2 draw on assessments carried out in Cuban institutions. Indeed, they respond to a recent Cuban national science policy (CITMA, 2025), and incorporate theoretical and methodological categories from Cuban pedagogy. Furthermore, they prioritise solving problems in the local innovation ecosystem, while continuing to engage with international experiences.

The Holistic-Configurational Approach in Scientific Research Management

The scientific training of professionals in RMA could be associated to a model designed by the authors based on Holistic-Configurational Theory (Figure 2) that offers an integrated perspective, considering research as a complex and dynamic process. The latter aims to propose alternatives for the training of university scientific managers and administrators (Gutiérrez, 2021) that was created focused on universities essentially because it has been the object of the author's study in Cuba. However, it is flexible enough to be adapted to different contexts, considering the holistic-configurational nature of scientific research management as a discipline. Integrating RMA with the above theory would bring key benefits: better decision-making, a deeper understanding of research influences and the ability to tailor management to specific contexts.

This interdisciplinary approach strengthens the research process. It also enhances the training of researchers by fostering creativity, critical thinking and teamwork skills. In addition to the immediate advantages, this integration defines a promising future in the field of research management, providing a basis for the creation of advanced management models that respond to the current dynamics of knowledge by focusing on the development of methodological and theoretical frameworks that are administratively efficient and appropriate to the levels of complexity of research.

Contradictions between pairs as a central concept of dialectical philosophy were developed mainly by classical authors such as Heraclitus of Ephesus (c. 500 BC) and Georg Wilhelm Friedrich Hegel (1770-1831). Its relationship to research processes lies in how the contradictions inherent in a phenomenon drive its development and transformation, enabling progress to be made in the understanding of reality. Dialectical opposites are not obstacles, but generative forces that enable research to move towards more holistic-configurational understandings. Rather than avoiding contradictions, a rigorous research process explores them systematically, using methods that synthesise opposing perspectives.

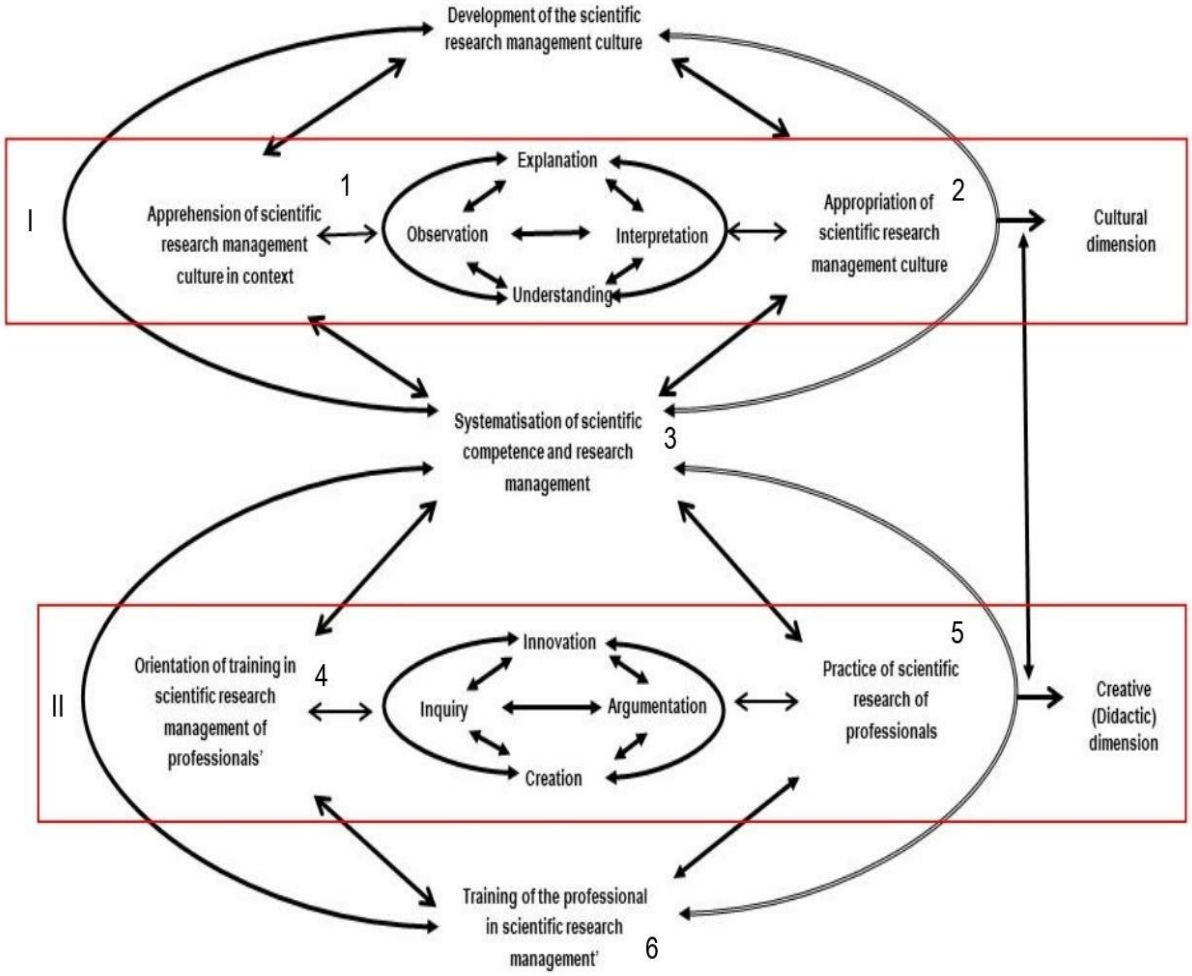

Figure 2. Outline of Scientific Research Training Based on Holistic-Configurational Theory (Gutiérrez Rojas, 2021)

Dialectical opposites always constitute categories that establish their synthesis. In the Model they are made up of the following configurations:

"Orientation of training in scientific research management of professionals" versus "Practice of scientific research of professionals";

"Apprehension of scientific research management culture in context" versus "Appropriation of scientific research management culture".

In summary, Figure 2 expresses the following relationships:

(I) The cultural character of scientific research training, which constitutes the synthesis of the dialectical relationship between the Apprehension of scientific research management culture in context (1) and the Appropriation of scientific research culture (2), mediated and synthesised in the Systematisation of scientific and research management competencies and the Development of scientific research management culture (3).

The process of scientific research is characterised by a constant flux between the comprehension of reality and the appropriation of culture. And because every time the former is recognised, the latter is appropriated. This notion is intimately associated with the work of the Chilean sociologist and epistemologist Hugo Zemelman Merino (1935-2017), frequently employed in Spanish-speaking academic circles to encapsulate his theoretical framework and its following key elements.

(1) Category that is expressed as the first approach to the meaning of the culture of training in scientific research management.
(2) Category through which the interpretation and reconstruction of universal culture based on experience in a particular context is expressed.
(3) The development of the culture of scientific research management is expressed in the transformative potential of each professional in the process of scientific research management as a whole, in order to build and reconstruct it in a flexible, committed and transcendent way. It is a totalising quality that directly expresses the resources and potentialities that this professional has to face the solution of a research problem as well as to ensure the formative processes and the construction of new scientific knowledge.

(II) The creative (didactic) character of scientific research, constitutes the synthesis of the dialectic relationship between the Orientation of the training of the professional in scientific research management (4) and the Training of the professional in scientific research management (5), mediated and synthesised in the Training practice in scientific research management and the Systematisation of scientific competencies and research management (6).

In the Model, the Cultural Dimension is based on the hermeneutic logic (observation, understanding, interpretation and explanation) and the Creative Dimension (Didactics) on the investigative logic (inquiry, argumentation, creation and innovation).

By taking the overall management process into account, it is understood here that the configurational management of scientific research could be articulated with RMA, and it can be understood that, by adopting a holistic-configurational approach, it may be possible to better understand the integrative approach of formative (training of science managers) with creative (knowledge construction) processes in the field of scientific research and innovation management and their relationships.

In the context of RMA, this implies that effective research management depends not only on the management of resources such as funding and personnel, but also on organisational culture, interpersonal dynamics and the influence of external environments and factors. Thus, the integration of model 2 (Figure 2) and model 1 (Figure 1) reflects the complex and dynamic processes beyond the scientific approach/ work.

In this way, RMA not only seeks immediate results, but also promotes an environment conducive to innovation and long-term development. The intersection between RMA and Holistic-Configurational Theory invites one to rethink management strategies and

to consider a holistic-configurational view. This approach not only enriches management practice, but also contributes to the advancement of research as a whole, fostering a more collaborative and efficient ecosystem.

While Figure 1 establishes the functional architecture of scientific research and innovation management, Figure 2 presents the training logic for professionals operating within that system. A management process in this context should be understood as a dialectical process where capacity building (training model) continuously feeds and transforms the execution of systemic functions (operational model).

CONCLUSIONS

This article highlights the complexity of understanding the multiple processes of management and administration of scientific research and their interrelationships, not only as a concept but also as a scientific discipline under construction. The contribution of European practice in RMA is recognised. The involvement of Latin America, and Cuba as a component of the latter geographical area, in these processes, incipient in the training and recognition of these managers, is still considered scarce, but is improving in the light of international experience in this field.

The proposed approach considers a contextualised vision from Holistic-Configurational Theory, given the particular characteristics of Cuba, a country in which some of the authors carry out their research work, and elements are established in the interrelation between RMA and the theory that constitutes the basic theoretical framework of the proposal.

This approach demonstrates the importance of treating these management and administrative processes as a totality, without constructing thematic boundaries, and of including its set of practices, from managing knowledge to managing training, as an integrating entity.

Finally, the approach insists on the need to train managers and build the most appropriate capacities for innovation as a basis for the ongoing construction of knowledge and achieving far-reaching impacts in scientific research.

ABBREVIATIONS

ARMA:	Association of Research Managers and Administrators (UK)
CAPES:	Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (Brazil)
CARDEA:	Career Acknowledgement for Research Managers Delivering for the European Area (EU)
CITMA:	Ministerio de Ciencia, Tecnología y Medio Ambiente de la República de Cuba (Ministry of Science, Technology and the Environment) (Cuba)
CNPq:	Conselho Nacional de Desenvolvimento Científico e Tecnológico (Brazil)
CONACYT:	Consejo Nacional de Humanidades, Ciencias y Tecnologías (Mexico)

DFG:	Deutsche Forschungsgemeinschaft (Germany)
IPN:	National Polytechnic Institute (Mexico)
NIH:	National Institutes of Health (USA)
NRF:	National Research Foundation (South Africa)
NSF:	National Science Foundation (USA)
SARIMA:	Southern African Research and Innovation Management Association
R&D:	Research and Development
R&D&I:	Research and Development and Innovation
RA:	Research Administrator
RM:	Research Manager
RMA:	Research management and administration
UKRI:	UK Research and Innovation

REFERENCES

Academy of Management. (2025). Homepage. https://aom.org/

Agostinho, M., Moniz Alves, C., Aresta, S., Borrego, F., Borlido-Santos, J., Cortez, J., & Vidal, S. (2018). The interface of science: The case for a broader definition of research management. Perspectives: Policy and Practice in Higher Education, 24(1), 19–27. https://doi.org/10.1080/13603108.2018.1543215

Aguinis, H., Villamor, I., Lazzarini, S. G., Vassolo, R. S., Amorós, J. E., & Allen, D. G. (2020). Conducting management research in Latin America: Why and what's in it for you? Journal of Management, 46(5), 615–636. https://doi.org/10.1177/0149206320901581

Bansal, P., & Corley, K. (2011). From the editors: The coming of age for qualitative research: Embracing the diversity of qualitative methods. Academy of Management Journal, 54(2), 233–237. https://doi.org/10.5465/amj.2011.60262792

Borrás, C., Pollarolo, G., Ochoa, S., Martínez, R., & Babington, R. (2023). Case study: Professionalising research management in Catalonia. AGAUR. https://agaur.gencat.cat/web/.content/Documents/Internacionalitzacio/Informe-profesionalizacion-de-la-investigacion.pdf

Carrera Martínez, J. L. (2024). Superación profesional del angiólogo para el tratamiento de las enfermedades vasculares periféricas [Tesis doctoral, Universidad de Ciego de Ávila Máximo Gómez Báez].

CITMA. (2025). Reglamento para el sistema de programas y proyectos de ciencia, tecnología e innovación (GOC-2025-O13). Gaceta Oficial de la República de Cuba. https://www.ics.gob.cu/wp-content/uploads/2025/09/Manual-SPP-libro_Final_120325.pdf

Fuentes González, H. (2009). La concepción científica holistico configuracional. Una alternativa en la construcción del conocimiento científico. Su aplicación en la formación de

profesionales de la educación superior en tiempos contemporáneos [Tesis doctoral, Universidad de Oriente].

García Pérez, R. P. (2016). Dinámica de la formación sanitarista interactiva del análisis de la situación de salud en la carrera de Medicina [Tesis doctoral, Universidad de Ciego de Ávila Máximo Gómez Báez].

George, G., Howard-Grenville, J., Joshi, A., & Tihanyi, L. (2016). Understanding and tackling societal grand challenges through management research. Academy of Management Journal, 59(6), 1880–1895. https://doi.org/10.5465/amj.2016.4007

Gutiérrez Rojas, I. (2021). Estrategia didáctica para el proceso de formación en gestión científico-investigativa de profesores asistentes médicos [Tesis doctoral, Universidad de Ciego de Ávila Máximo Gómez Báez]. https://tesis.sld.cu/index.php?P=FullRecord&ID=721

Kerridge, S., & Scott, S. F. (2018). Research administration around the world. Research Management Review, 23(1), 1–34. https://www.ncura.edu/Portals/0/Docs/RMR/2018/v23_n_1_Kerridge_Scott.pdf

Kerridge, S., Poli, S., & Yang-Yoshihara, M. (Eds.). (2023). The Emerald handbook of research management and administration around the world. Emerald Publishing. https://doi.org/10.1108/9781803827018

Kirkland, J. (2008). University research management: an emerging profession in the developing world. Technology Analysis and Strategy, 20 (6):717-726.

Kulakowski E. (2023). The Research Administration as a Profession (RAAAP) Survey. The Emerald Handbook of Research Management and Administration Around the World (Chapter 1.7). https://doi.org/10.1108/978-1-80382-701-820231009

Miranda, O. M. (2016). Dinámica clínica epidemiológica del proceso de profesionalización del médico profesor [Tesis doctoral, Universidad de Ciego de Ávila Máximo Gómez Báez].

Oliveira, C., Fischer, M., Kerridge, S., & Dutta, M. (2023). The Research Administration as a Profession (RAAAP) Survey. In S. Kerridge, S. Poli, & M. Yang-Yoshihara (Eds.), The Emerald handbook of research management and administration around the world (Chapter 2.2). Emerald Publishing. https://doi.org/10.1108/978-1-80382-701-820231011

O'Regan, M. K., & Zsár, V. (2024). A competence based approach for research manager career development in the European research area. University College Cork. https://www.ucc.ie/en/media/support/hrresearch/RMCompLongVersion.pdf

Poli, S., Kerridge, S., Ajai-Ajagbe, P., & Zornes, D. (2023). Research management as labyrinthine: How and why people become and remain research managers and administrators around the world. In S. Kerridge, S. Poli, & M. Yang- Yoshihara (Eds.), The Emerald handbook of research management and administration around the world (Chapter 2.4; pp. 141–154). Emerald Publishing. https://doi.org/10.1108/978-1-80382-701-820231013

Poli, S., Oliveira, F., & Trentini, A. (2023). Exploring forms of knowledge and professionalism in RMA in a global context. In S. Kerridge, S. Poli, & M. Yang-Yoshihara (Eds.), The Emerald handbook of research management and administration around the world (Chapter 3.2; pp. 221–230). Emerald Publishing. https://doi.org/10.1108/978-1-80382-701-820231020

Poli, S., Oliveira, C., & Zsár, V. (2023). From conceptualisation to action: The quest for understanding attitudes of research managers and administrators in the wider world. In S.

Kerridge, S. Poli, & M. Yang-Yoshihara (Eds.), The Emerald handbook of research management and administration around the world (Chapter 3.1; pp. 201–220). Emerald Publishing. https://doi.org/10.1108/978-1-80382-701-820231019

Poli, S., & Taccone, D. (2023). Professional staff in support services in education and research: How to connect research with practice. In S. Kerridge, S. Poli, & M. Yang-Yoshihara (Eds.), The Emerald handbook of research management and administration around the world (Chapter 4.3; pp. 341–353). Emerald Publishing. https://doi.org/10.1108/978-1-80382-701-820231028

Rampioni, P., & Wangui Hunja, C. (2023). Research management and administration in Kenya in a challenging research environment. In S. Kerridge, S. Poli, & M. Yang-Yoshihara (Eds.), The Emerald handbook of research management and administration around the world (Chapter 5.2; pp. 425–433). Emerald Publishing. https://doi.org/10.1108/978-1-80382-701-820231035

Virágh, E., Zsár, V., & Balázs, Z. (2019). Research management and administration: A profession still to be formalized. HETFA Discussion Paper. https://hetfa.eu/wp-content/uploads/2019/04/Research- managers_final_0408.pdf

Whetten, D. A. (1989). What constitutes a theoretical contribution? Academy of Management Review, 14(4), 490–495. https://doi.org/10.5465/amr.1989.4308371

Yang-Yoshihara, M., Kerridge, S., & Poli, S. (2023). Emerging trends and insights in research management and administration. In S. Kerridge, S. Poli, & M. Yang- Yoshihara (Eds.), The Emerald handbook of research management and administration around the world (Chapter 6; pp. 801–815). Emerald Publishing. https://doi.org/10.1108/978-1-80382-701-820231080

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Worldwide and in Cuba: A Holistic-Configurational Approach. *Journal of Research Management and Administration*, *5*(1), 2026040501. https://doi.org/10.18552/jorma.v5i1.1298