




## Chapter 5.9

# Maturity in the Professionalisation of the Research Managers and Administrators in Colombia

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### Abstract

This chapter presents a narrative description of the evolution in the building capabilities in the process of professionalisation of the research manager and administrative roles in higher education institutions (HEIs) in Colombia. The descriptive approach takes into account the consolidation of the Colombian Science, Technology and Innovation policy to explain the ways that research managers have been setting up their activities to adapt and respond to the challenges that research management has imposed on them. The chapter also includes analysis of results derived from the Research Administration as Profession (RAAAP-3) survey in 2022 for Colombian participants to describe as the roles of research managers and administrators that have grown up in the country, and it considers the future and perspectives to look forward in the professionalisation process in HEIs.

*Keywords:* Research management and administration; higher education institutions; RAAAP; COREMA; Colombian Science, Technology and Innovation policy; professionalisation

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## **Colombian Research Ecosystem**

### ***Colombian Science, Technology and Innovation Policy***

For more than 50 years, the national system for science, technology and innovation – SNCTI in Colombia has been evolving based on the definition of regulatory frameworks, technical assistance, international financing and the role played by actors, especially universities, which have generated scientific and human capacities for the generation, use, transfer and appropriation of research and development activities.

At the regulatory level, in the 1960s, the establishment of the National Council for Science and Technology – Colciencias (today the Ministry of Science, Technology and Innovation) and the Colombian Fund for Scientific Research and Special Projects, through Decree 2869/1968, laid the foundations for the country to have a leading entity to advise and finance the development of science and technology activities in the country.

In subsequent years, the creation of postgraduate programs in higher education institutions (HEIs) was promoted (Decree 80/1980), Colciencias was given the responsibility of directing and coordinating the SNCTI through the definition of the National Science and Technology Policy (Law 29/1990), universities had to include research as one of their missionary functions, and also train students in scientific skills (Law 30/1992). Entering the 21st century, Colciencias was transformed into an Administrative Department, granting that entity institutional autonomy for the consolidation of the SNCTI (Law 1289/2009), 10 years later this department becomes the ministry (Law 1951/2019) achieving a seat at the national budget decision table, and finally the approval of the current public policy for Science, Technology and Innovation – STI in Colombia (CONPES 4089/2022). This new policy raises the need to address problems linked to the disconnection of STI indicators from the country's social, economic and territorial development needs, the lack of legitimacy in the results of the impact assessment processes derived from STI activities or the low communication between the actors involved in the national science, technology and innovation systems (Chalela, 2020; Salazar, 2013; Soto, 2009).

### ***Main Funders of the National System for Science, Technology and Innovation in Colombia***

During the second half of the 20th century, and in the beginning of the 21st century, the technical assistance and international financing by the Inter-American Development Bank (IADB) and the World Bank was the main fund in Colombia to foster and strengthen the research and development capacities in universities, public research institutes and companies in Colombia, as well as generating articulations between these actors to address challenges from sectors such as agriculture, health, renewable resources, among others (Salazar, 2013).

In the most recent years, with the establishment of the General Royalties System, allocated 10% of taxes on mining and oil extraction investment for ST&I (Law 1530/2012), and another loan from the World Bank in 2017 for US\$160,000,000, the Colombian Government has built the basis to support the maturation of regional and national research systems in the country. Despite the above, the percentage of the national GDP in investment in Research, Development and Innovation is low (close to 0.3% of GDP in 2021), which has generated the most competition for those funding (OCyT, 2021). Figs. 5.9.1 and 5.9.2 show the evolution of the investment and the type of funding. An increase in the capacity of the SNCTI actors to attract international



Fig. 5.9.1. Evolution of the Colombian Investment for Science, Technology and Innovation Activities (2000–2020). Million Colombian Pesos. *Source:* Colombian Observatory of Science and Technology OCyT – 2022.

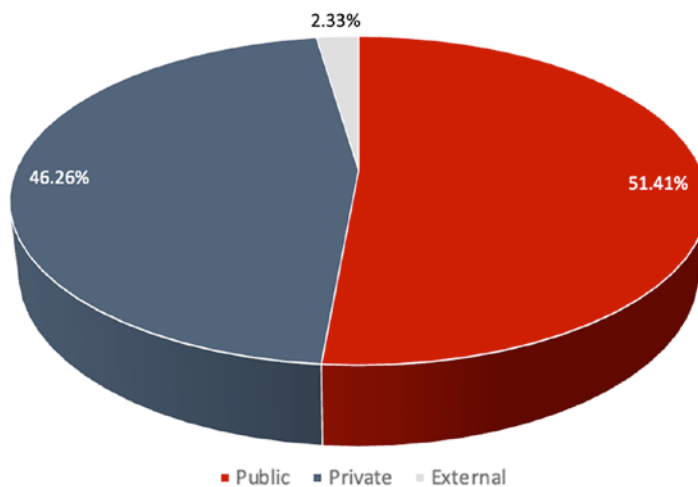


Fig. 5.9.2. Distribution of Colombian Resources for Science, Technology and Innovation Activities (2000–2020). *Source:* Colombian Observatory of Science and Technology OCyT – 2022.

resources to finance their research and development activities has also been evidenced, as well as the gradual decrease in the own resources allocated by HEIs to finance the research.

### *STI Ecosystem Where RMAs Are Working*

At the meso-structural level, the maturation of the SNCTI led to the fact that, at the end of the 1990s and the beginning of the 21st century, most universities in Colombia

would create organisational academic units for research (Croucher & Woelert, 2016), like Vice President for Research Offices, considering that their management and processes became an essential part of the managerial functions of this type of institution (Poli, 2018a). The foregoing has led to changes in the organisational structure of these institutions to adapt to the transformations of the context and compete for resources that allow them to finance research, link a greater number of professors with PhD, expand postgraduate programmes and generate a greater production of high-level knowledge (CESU – Consejo Nacional de Educación Superior, 2014).

The growing of the number of actors in the national system of science, technology and innovation has led to the management of university research being configured in an isomorphic manner, that is, under standardised criteria of efficiency and quality that allow them to compete for sources of information: public, private or international financing to continue strengthening their scientific capacities (Chalela, 2020). These units have been in charge of directing and coordinating the nearly 300 HEIs that currently exist in the country, according to the National System of Information on Higher Education – SNIES (2022) and the activities of science, technology and innovation of the nearly 5,900 research groups and 20,930 researchers, who are today recognised by the National System of Science, Technology and Innovation (Ministerio de Ciencia, Tecnología e Innovación, 2022), and the number of master degree and PhD students has been growing as a result of the government efforts to increase the scientific capabilities in the country. In that sense, the STI ecosystem nurturing poses great challenges that are associated with the need to professionalise the role played by researcher managers and administrators of research in these institutions.

## Evolution of the Profession

The creation of institutional dependencies for strengthening of research in the different HEIs of the country has been marked by the need to consolidate an organisational culture for research (Evans, 2011). This responsibility has been assigned to professionals dedicated to RMA who support researchers and academics in each of the activities that make up the cycle of research projects – from the search for funding to the transfer of results derivatives of the projects (Kerridge, 2021b).

In the six semi-structured interviews conducted by Colombian Research Management and Administration Association (COREMA) chair members, between January 2022 and February 2022, with RMAs working on public and private universities in Colombia, we found that this role has evolved slowly, and empirically. The RMA profession in Colombia has been characterised by being carried out by professors and administrative professionals in different areas of knowledge, who have had to learn and develop their skills by solving the day-to-day situations (specially, pre- and post-award processes, transfer of knowledge and management of intellectual property) that have been generated from the pressures of the knowledge economy over the Colombian national education system (Altbach, 2013; Altbach & De Wit, 2018).

On the other hand, it is important to mention that these professionals have faced labour obstacles for the development of their functions such as temporary employment contracts, little access to specific training in RMA, little clarity in the definition of their specific functions, informality in the process of communication with departments or faculties within their university and the lack of knowledge or negative (bureaucratic) perception from researchers, as people mentioned during the interviews.

## Current Community

Faced with the aforementioned challenges, the motivation of attending the call for funding research programs by the World Bank loan in 2017, an informal network of RMAs from different universities was created to support researchers on the pre-award processes. The main challenge of this group was to meet the requirements for the formation of the consortia and to comply with the development of the budgets in accordance with the call.

Between 2018 and 2021, this network of RMAs grew organically through an informal channel, 'Whatsapp', focussed on sharing information about common interests, best practices and funding opportunities, among other important information for research management for performance roles within HEI. The growing need for dissemination and support in best practices for RMA, at the end of 2021, the network of research managers was formalised in a Colombian Research Managers and Administrators Association (COREMA<sup>1</sup>), whose objective is focussed on the professionalisation and nurturing capabilities for the management of research in HEIs, and to promote changes that strengthen the Colombian STI policy.

## Demographics

The socio-demographic characterisation of the RMAs in Colombia was possible through the RAAAP-3 survey that was actively distributed for the first time in Colombia. These results enabled the analysis of the gender, age, experience and professional background, the level of maturation of the profession, the differences with people dedicated to these same activities in different parts of the world, as well as the opportunities to strengthen the professionalisation processes in Colombian HEIs. This survey (Fischer et al., 2022) had the participation of 74 RMAs that are working in public and private universities in the country (Kerridge, Dutta, et al., 2022).

Regarding the gender of the participants, unlike most of the rest of the world in which the management and administration of research are female dominated, in Colombia there is a certain gender balance among the people who are linked to this type of activity. In Colombia, the gender gap in RMA is lower than the world average. While in the world 78.5% ( $n = 2,764$ ) reported female gender, in Colombia it was only 55.4% ( $n = 41$ ).

Regarding age and the experience as RMAs in Colombia, the majority of the RMA population is young, unlike the world average (Fig. 5.9.3). Despite the fact that the RMAs in Colombia are mostly younger, when comparing the number of years that people have been carrying out these activities with the rest of the world it is similar, showing that the majority of people who dedicate themselves to this type of activity in everyone has been doing it for less than 10 years (Fig. 5.9.4).

Considering the academic background, while in Colombia only 41.8% ( $n = 28$ ) reach a master's or doctorate degree, around 61.8% ( $n = 2,107$ ) of the professionals dedicated to this type of activity in the world have this profile. However, in contrast to the above, in Colombia, there is a higher proportion of people who declared that they have dedicated themselves to research management and administration activities after having trained as researchers compared to the rest of the world. When RMAs from Colombia were asked about if they moved from research to research management,

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<sup>1</sup> COREMA web page: <https://gestorescorema.wordpress.com/>.

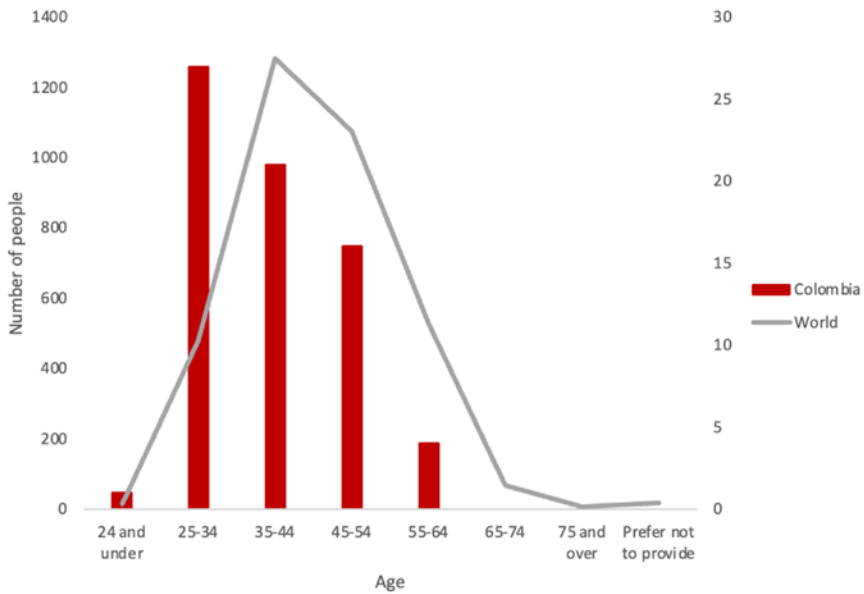


Fig. 5.9.3. RMA's Age Range Profile in: Columbia and the World. *Source:* RAAAP-3 (Kerridge, Dutta, et al., 2022).

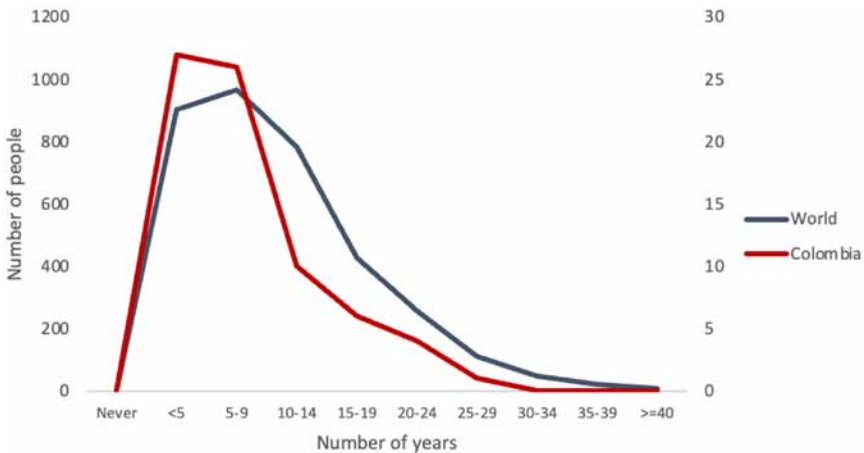


Fig. 5.9.4. Distribution of the Experience as RMA's in Columbia and the World (Number of Years). *Source:* RAAAP-3 (Kerridge, Dutta, et al., 2022).

surprisingly 59.1% ( $n = 39$ ) picked from 3 to high at the scale, on the other hand in the world 39.1% ( $n = 1,300$ ) people are distributed in the same scale (3 to high).

Finally, about employment type, in Colombia less than half of the people who participated in this survey stated that their role as RMA's is a permanent position 48.6% ( $n = 34$ ), in contrast to the worldwide data in which the vast majority of professional's present permanent contract conditions for the development of their functions 81.4% ( $n = 2,789$ ). It is a relevant situation in Colombia, due to the lack of stability in the labour conditions of the RMA's has generated uncertain in people, and it's could

produce a negative effect in their decision to develop a career as RMAs, as one of the participants in the interview mentioned:

It is a reality that we are all temporary workers, that is to say, this area does not have any professionals or staff, or transitory (fixed-term or permanent) so it would also be left to the political will of whoever is going to arrive, in case there is any change in the management team, let's say that it would be up to the free will of whoever arrives to define if they consider that they will continue betting on this process or if they will have other priorities. So, well, it's not like a day-to-day uncertainty, but at least I am very aware of that scenario, that is, obviously those of us who are contractors for professional services, then we don't have anything safe.

### ***Colombian RMAs Identity***

At the same time, in Colombia, a differentiation between 'research management' and 'research administration' has not been built. It has become more and more common that institutions create positions with the name 'research manager', we consider that it is given by the affinity with the position 'project manager', as shown in Fig. 5.9.5, the majority of RMAs in Colombia identify themselves as 'research managers'. Additionally, a significant percentage is also identified as 'research and innovation manager' given that the public policy of STI in Colombia has promoted the processes of technology transfer and innovation in the last 15 years<sup>2</sup> (Fig. 5.9.5).

The aforementioned issues cannot be isolated from the characteristics and type of institutions to which the managers and administrators of the research are linked. In particular, the results of the survey show that the majority of Colombian professionals dedicated to this type of activity declare that they work in institutions active in research 51.4% ( $n = 38$ ), while in the rest of the world the largest proportion of professionals is linked to universities that are intensive in research 47.6% ( $n = 1,678$ ). Additionally, it is evident that while in the world most of these professionals are linked to public-type organisations 76.2% ( $n = 2,689$ ), in Colombia the proportion of professionals linked to public and private organisations is balanced at 48.7% ( $n = 36$ ) and 47.3% ( $n = 35$ ), respectively, which marks an important difference in the management and administration processes of investigation.

Finally, the survey also offers pertinent information concerning the challenges involved in professionalising research management and administration in Colombia. It addresses the potential for ongoing training to enhance career growth across diverse organisational contexts, alongside the opportunity to promote this profession and thereby increase engagement in such activities.

In the first place, when consulting people in Colombia about the certifications they have obtained to train as managers and administrators of research, it is identified that about 79.7% ( $n = 59$ ) do not have any certification, which represents a great opportunity for improvement considering the existence of a training offer of this type that has been developed by some associations in the world such as the European Association

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<sup>2</sup>The stakeholder's recognition policy of the Ministry of Science, Technology and Innovation (STI) in Colombia has nine types of stakeholders, of which seven are closer to technology transfer and innovation processes than research. [https://minciencias.gov.co/portafolio/reconocimiento\\_de\\_actores](https://minciencias.gov.co/portafolio/reconocimiento_de_actores).

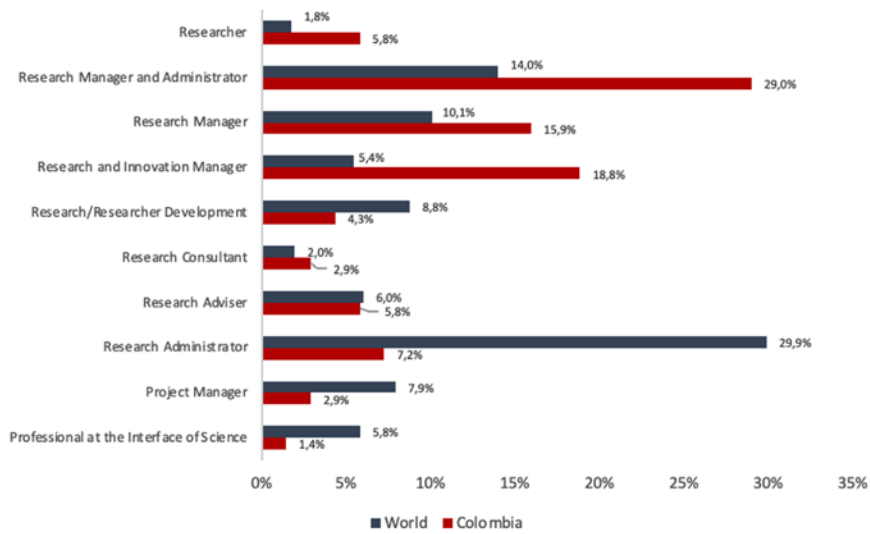


Fig. 5.9.5. Distribution of the RMAs Identity in Colombia and the World.  
 Source: RAAAP-3 (Kerridge, Dutta, et al., 2022).

of Research Management and Administration – EARMA, National Council of University Research Administrators – NCURA, among others.

In addition, when asked about the possibility of recommending to other people the development of a professional career as research managers and administrators, in the case of Colombia it is identified that the majority 72.9% ( $n = 51$ ) would do so, whereas unlike what happens in the rest of the world where 56.4% ( $n = 1,954$ ) state that they would recommend this career path, suggesting which means that there is satisfaction in professionalising these roles and a great opportunity to continue consolidating the management and administration of research in this country.

## Directions/Future

It is concluded that according to the sociodemographic analysis of the RMA population in Colombia there are several possibilities of action. The most urgent will be to start courses and certifications for the professional development of RMA because the group is young and has basic training levels. In the medium term, it is possible to think about encouraging RMA to take postgraduate courses. Likewise, in the medium term, it is possible to motivate HEIs and research centres to offer greater job stability to RMAs (fixed-term or permanent contracts).

COREMA plans to be strengthened through six lines of work fronts with the goal of making more professional the research management in Colombia. (1) Professionalisation and capacity building: professionalise the activities and knowledge of RMAs through training and certifications. (2) Knowledge management: design strategies to share good practices, lessons learned, standardisation and optimisation of processes through guides and repositories, among others. (3) Communication and networking: develop activities that build trust among the members of the network and with other national and international stakeholders related to STI activities. Design information systems and platforms to share information and create channels for network members to communicate. (4) Influence on science, technology and innovation policy, laws and regional alliances.

To carry out social control activities on the administration and management of the STI. (5) Research in research management: generate new knowledge from the data and experiences of the network dynamics. Document activities, experiments and their results. Design methodologies and practices and generate publications as a result of this research exercise. (6) Internationalisation: seek relationships and participate in activities related to the management and administration of research at the international level.

Also, regarding the implementation of research management in HEIs, initiatives such as ‘MIMIR ANDINO (Modernization of the institutional management of research and innovation in the Andean region and Latin America)<sup>3</sup>’ have recently launched a new model: ‘Institutional Management Model for Research and Innovation in Higher Education Institutions in Latin America’, this model was the result of a project co-financed by the European Commission, within the framework of the Erasmus+ CBHE program (capacity development in the field of higher education). Spanning three years, the MIMIR ANDINO project was primarily designed to help and encourage partner universities in South America (and specifically Andean) countries to better understand the status quo of their research management approaches, from performance and evaluation to management structures and effectiveness, the model was published in October 2022 (Gamboa et al., 2022).

Another relevant initiative is the one promoted by the I2LATAM project,<sup>4</sup> co-financed by the Erasmus+ program of the European Commission, which is focussed on developing Research and Innovation capacities in HEIs in Latin America to support their regional engagement. Inspired by the Smart Specialisation Strategy and the role of Higher Education in regional competitiveness, the I2LATAM project has enabled Latin American research and innovation managers from Colombia, Mexico, Argentina and Peru to implement the classes with a high-level official of the university, we are referents, I think that for a student it is very satisfactory and if we can transmit not only our disciplinary specialty, but also some of the administrative experience, it can be very useful.

Finally, COREMA seeks to increase the legitimacy of RMAs among the academic community and STI policymakers. The strategy is to create standards with clarity and coherence, to formalise and make more agile the process related with science, technology and innovation activities. Our goal is to make visible the knowledge, communication, access to information, collaboration, efficiency and good practices of the RMA in Colombia and to be a reference for RMAs in Latin America.

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