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The Global State of Young Scientists in Latin America and the Caribbean: An Exploration of Constraints and Strategies

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About this report

The Global State of Young Scientists in Latin America and the Caribbean: An Exploration of Constraints and Strategies is a Global Young Academy report. This study analyses the experiences of early-career researchers from Latin America and the Caribbean to contribute to a better understanding of the social contexts in which they develop their careers.

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ABSTRACT

This report provides an overview of the first phase of The Global State of Young Scientists in Latin America and the Caribbean (GloSYS LAC), a research project developed by the Global Young Academy (GYA). Its aim is to contribute to current debates on social dimensions of scientific activities and the impact that they have on the trajectories of young scientists. This research was performed using qualitative interviews with thirty-one early-career researchers from Argentina, Brazil, Colombia, Cuba, Guatemala and Panama. As a result of the analysis of these interviews, this report highlights the interplay between the constraints that young researchers currently face and the strategies they use to confront them.

About the Global Young Academy

The vision of the GYA is *science for all; science for the future*, and its mission is to give a voice to young scientists and researchers around the world. The GYA, founded in 2010, is an independent science academy of 200 outstanding early- to mid-career researchers from six continents who are selected from across disciplines based on their academic excellence and commitment to engage with society. GYA members serve five-year terms, and the GYA presently counts members and alumni from 100 countries. The GYA administrative Office is publicly funded and hosted at the German National Academy of Sciences Leopoldina. The wide array of GYA activities are supported by a range of international public and private funders.

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TABLE OF CONTENTS

SUMMARY

This report provides an overview of the first phase of The Global State of Young Scientists in Latin America and the Caribbean (GloSYS LAC), a research project developed by the Global Young Academy (GYA). Its aim is to contribute to current debates on social dimensions of scientific activities and the impact that they have on the trajectories of young scientists. This research was performed using qualitative interviews with thirty-one early-career researchers, of which 14 are women and 17 men.[1] These interviewees live in or originate from Argentina, Brazil, Colombia, Cuba, Guatemala and Panama. The sampling strategy includes researchers who are currently based in their countries of origin and researchers living abroad. As a result of the analysis of these interviews, this report highlights the interplay between the constraints that young researchers currently face and the strategies they use to confront them.

The main constraint that our interviewees reported is the chronic underfunding of the scientific and higher education systems in the region. This claim is consistent with empirical evidence demonstrating the detrimental effects that the reduction in research spending is having in Latin American countries. While research spending has increased to different extents in most of the world, Latin America is investing less in scientific research (UNESCO 2021). The lack of funds for scientific activity in the region is having dramatic consequences on the development of new generations of researchers. Our interviewees reported issues with insufficient and inadequate research infrastructure, lack of funding to conduct research and disseminate findings, as well as job precarity and financial insecurity. There is also excessive competition over scarce resources and research positions in the Latin American research labour market. Chronic underfunding of the scientific and higher education systems in the region is risking the integrity and rigour of scientific activity. Besides these funding issues, our research participants pointed to other constraints, such as inefficient bureaucratic procedures, relationships of clientelism and patronage, 'productivist' approaches to science at the institutional level, and a distinct tension between career and life goals.

There are several strategies that early-career researchers use to deal with these constraints, among which mobility and networking are the most salient. International, inter-sectoral and organisational mobilities are crucial for young researchers, as they provide them with access to opportunities to advance their careers in Latin America and elsewhere. Access to mobility is defined and can be limited by factors that include the researchers' linguistic abilities, financial

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[1] For a more detailed characterisation of the interviewees please see Appendix 1.

status, family situation and the complex interplay between their personal life and career development. One of the most crucial points stemming from these interviews is that international, inter-sectoral and organisational mobilities are closely related to each other – a topic that deserves further exploration. Networking within and beyond their institutions and countries is also a valuable resource, as it helps young researchers to access information and support, forge collaborations, receive encouragement and recognition, and facilitates different forms of career mobility.

Early-career researchers in Latin America and the Caribbean share commonalities with their peers around the world. However, there are three aspects of their experiences that may be distinct. First, they tend to take longer to develop professionally than their peers in other parts of the world, particularly those from North America and Western Europe. Second, they often calibrate their use of language for scientific communication. In this regard, they use their native language to address themes of local, national or regional relevance, and adopt English to publish in international English-medium journals and books to advance their research profiles. Third, their struggle with insufficient financial resources and infrastructure is more critical than that experienced by peers elsewhere. Since Latin America and the Caribbean is one of the world regions with the highest levels of inequality, there are significant differences in the extent to which these issues affect ECRs within and across countries.

There is much to learn about the experiences, decisions, aspirations and structural constraints that shape the trajectories of early-career researchers in Latin America and the Caribbean. The next step for GloSYS LAC is to develop a large-scale survey to investigate the socio-structural contexts in which young researchers develop their careers, as well as interviews with senior academics and managers to further inquire about institutional perspectives on the themes emerging from the previous steps. We hope that this report informs new efforts to understand the social background of the scientific activity in this region and how it relates with that of other geographical regions.

INTRODUCTION: EXPLORING YOUNG RESEARCHERS IN LATIN AMERICA AND THE CARIBBEAN

Early-career researchers (ECRs) are crucial to the future of scholarly research. They are therefore widely regarded as key actors in advancing knowledge societies. However, their experiences do not always reflect their relevance, as many struggle with the casualisation of jobs, financial insecurity and other societal issues impacting their careers and personal lives. How do the social contexts in which ECRs live and work shape their experiences, decisions and career aspirations?

To address this question, this report focuses on ECRs living in or originating from Latin America and the Caribbean (LAC). The LAC region constitutes a relevant case for the social study of young researchers and the scientific systems in which they work because of the significant transformations that it has experienced over the last decades. During this period the region has exhibited a noticeable increase in scientific activity. In most countries, there has been a continuous growth in the enrolment ratio and number of higher education students (Ferreyra et al. 2017), the number of PhD graduates (UNESCO 2020), as well as the number of scientific publications (Lemarchand 2015). This growth, however, has been accompanied by a notable reduction of investment in research and development as reported by the latest UNESCO Science Report (Schneegans et al. 2021: 49). This report shows that while research spending has increased in most regions of the world, research spending in Latin America between 2014 and 2018 has decreased by 3.55 billion (purchasing power parity dollars). Chronic underfunding impacts ECRs in multiple ways, putting at risk the quality and integrity of their scientific activity and producing excessive competition over research funding and the labour market.

How do ECRs living in or coming from LAC act upon these contexts? This report constitutes an exploratory step towards constructing a comprehensive understanding of ECRs in LAC. It draws from qualitative interviews conducted with 31 ECRs living in or originating from Argentina, Brazil, Colombia, Cuba, Guatemala and Panama. By using a qualitative approach, it seeks to outline some of the most relevant issues encountered by young researchers and lay a foundation to inform further studies of the factors that intervene in their career trajectories. This study is exploratory in the sense that it is an entry point to a topic that has not yet been systematically covered in the literature for the LAC region – an issue addressed in the following section. Its research design, however, is not new, but stems from a series of studies called 'The Global State of Young Scientists' (GloSYS), developed by the Global Young Academy (GYA).

In seeking a better understanding of the social contexts in which ECRs develop their careers, the GYA has developed different studies to inform science policy, capacity-building programmes and other initiatives directed to foster science at a global scale. A precursor study (Friesenhahn &

Beaudry 2014) was conducted in 2013 in 12 countries to provide a global overview of the multiple contexts in which ECRs work and live. This exploration revealed that these contexts are insufficiently understood, and identified the relevance of mentoring structures, focused training, and transparency for ECRs. GloSYS ASEAN (Geffers et al. 2017), the first regionally focused study by the GYA, investigated Indonesia, Malaysia, Singapore and Thailand as members of the Association of Southeast Asian Nations (ASEAN). This study revealed that among the most prominent challenges faced by ECRs in the countries investigated are inadequate support and mentorship, insufficient funding opportunities and recurrent work-overload. The second regional project, GloSYS Africa (McAlpine et al. 2020), focused on 14 countries in East, West, South and North Africa. One of the main topics covered by this report is the impact of short- and long-term international mobilities on the career trajectories of ECRs in Africa. GloSYS Latin America and the Caribbean (GloSYS LAC) builds on these studies to examine the experiences of ECRs in 6 countries. The criteria for the selection of the countries in the LAC region is elaborated in the following section.

The overarching objective of these GloSYS projects is to raise an understanding of the conditions experienced by young researchers worldwide in order to provide better support for their career development and inform the development of evidence-based policies for science. The main purpose of the GloSYS LAC report is to provide concrete evidence to support the development and refinement of data collection tools for performing a mixed-methods study about the ways in which ECRs develop their careers.

Researching the social contexts in which scientific activity takes place is significant because we are currently experiencing a decisive time for the social role of science. The COVID-19 pandemic crisis has increased the visibility of the research sector to the general public, as expert advice is sought throughout times of uncertainty and rapid social change. However, visibility does not equate to, or set the foundation for, trust. This has been noticeable throughout the COVID-19 pandemic, a period in which research and scientific advice has been undermined by some organisations, media and governments despite the fact that rigorous scientific knowledge is a critical component in the prevention, control and mitigation of damages caused by the pandemic. In this context, unveiling the social dynamics that mould the scientific endeavour – such as the experiences, strategies and career aspirations of ECRs presented here – can help to demonstrate the importance of scientific endeavours and the people that participate in them.

This report elaborates on the main themes emerging from the interviews with ECRs in five sections. First, it describes the research design of GloSYS LAC. It then analyses the interplay between the constraints that the interviewees face in their career development and the strategies they use to confront them. The third section examines the ECRs' hesitancy between pursuing an academic

career amid various constraints or stepping out of the academy to work in a different field. The ways in which our research participants identify or not with the notions of 'early-career researcher' or 'young researcher' are discussed in the fourth section. The report concludes with a recollection of the key issues in the interviewees' narratives and an outline of their implications. Finally, Appendix 1 provides a brief reflection on the next steps that GloSYS LAC could follow. Appendix 2 describes the group of interviewees in detail.

1. AN EXPLORATORY STUDY, PART OF A LARGER RESEARCH DESIGN

As a research topic on its own, a study of the social contexts in which ECRs develop their careers in LAC is yet to be established. In a systematic literature review that we[2] at the GYA conducted to prepare this and the following phases of GloSYS LAC (Miranda-Nieto et al. 2021), we found 101 articles explicitly referring to ECRs in the region.[3] They mostly address topics related to the growth and transformation of research and higher education, academic productivity and efficiency, issues in the labour market and job insecurity, international mobility and, to a lesser extent, gender and diversity. A main highlight of this review is that the current literature is silent about the lived experience of ECRs in LAC, with practically no information available related to their experiences, decisions, and career aspirations. Importantly, it is completely unknown how these personal dimensions interact with different socio-structural dynamics. For example, it is unknown how the experience of job precarity impacts their family planning, or how seeking job opportunities abroad relates to economic recessions and/or cuts in research investment in home countries. The narratives of the interviews conducted throughout this project reflect these and many other ways in which ECRs in the region are challenged with multiple structural, institutional and daily life situations. Despite this, ECRs have demonstrated the capacity to adapt and manoeuvre within the systems in which they live and work in order to cope with these challenges, and they do so by intersecting their individual agency with a variety of socio-structural dynamics (McAlpine & Amundsen 2016). Therefore, we decided to begin this study focusing on ECRs' narratives of their own experiences.

As illustrated in Figure 1, the GloSYS LAC study consists of four steps that progress from exploratory to explanatory. The first empirical step involves an exploratory study consisting of semi-structured

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[2] The research design of GloSYS LAC was developed through a great deal of collaboration. Lynn McAlpine, Franziska Schreiber, Matt Keane, the members of the GloSYS LAC Working Group, Hsin-Chou Yang, Jennifer Plaul and Beate Wagner have directly participated in this process.
[3] This literature review concentrated on indexed journal articles based on empirical evidence. It does not include book chapters, opinion pieces or letters to the editor. For more details regarding the methods of this systematic literature review, please see our working paper (Miranda-Nieto et al. 2021).

interviews with ECRs living in or originating from the 6 countries considered for this study. The second phase involves a large-scale survey addressing individual concerns among ECRs and contextual factors that shape their careers. The third phase involves a set of semi-structured interviews to expand on central issues identified in the previous phases. The fourth phase integrates and consolidates the different data sets collected. This report elaborates on the first phase and seeks to inform subsequent research initiatives.
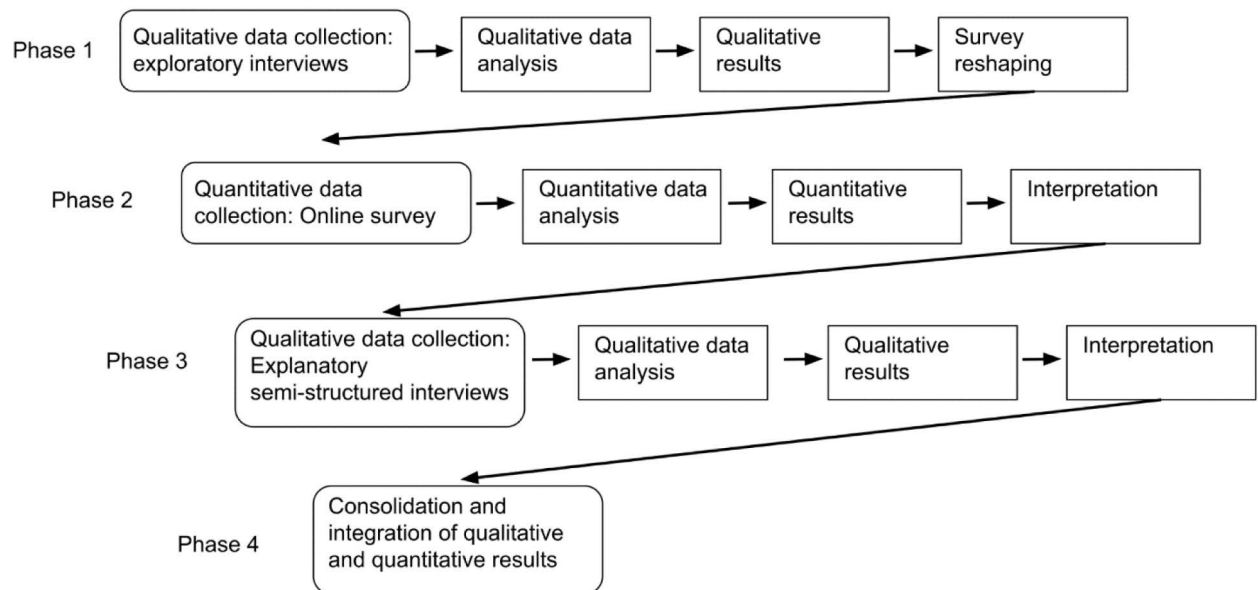
Figure 1: A sequential mixed-methods design.

Defining ECRs

ECRs are generally considered central to the production and dissemination of scientific knowledge. It is therefore unsurprising that the study of their career trajectories and the social contexts in which they develop is now a growing field of inquiry. Based upon previous GloSYS reports (Friesenhahn & Beaudry 2014; Geffers et al. 2017; McAlpine et al. 2020) and studies of ECRs from other world regions (Castelló et al. 2020), this report defines ECRs as people working in higher education, private or public organisations, or private companies, who are pursuing a research-oriented career, and who have a background in any research discipline (natural sciences, engineering and technology, medical and health sciences, agricultural sciences, social sciences, humanities and multidisciplinary fields). Based upon this definition, we have included research participants who have a research-oriented career, are PhD holders within 10 years of graduation, and were born and/or living in one of the countries included in this study. This criterion includes ECRs based in LAC, as well as those living in the international diaspora. Young researchers who do not hold a PhD but have a Master's degree or are studying a PhD while working as researchers

were also included in the study. There is evidence that in the region some of those who pursue a research-oriented career only hold Master's degrees (e.g., Hernández Méndez & Reyes Cruz 2014).

The selection of interviewees was performed using a purposive sampling approach. Given that this phase is based on a qualitative approach, the aim of this sampling technique was to consider the respondents' distribution in terms of gender, discipline, experiences of international mobility and number of years after PhD. Because of the research design, achieving statistical representation was not an aim of this phase. A total of 31 interviews were conducted with ECRs living in or originating from six countries in LAC (more on this point below). Fourteen of them were women and 17 men, and their average age was 37 years old, ranging from 32 and 45. At the time of the interview, 17 of them had permanent positions either as lecturers/researchers or as full-time researchers at public institutions. Seven worked as postdoctoral fellows (on fixed-term contracts) at public research institutions, 4 were casual lecturers (on fixed-term contracts) at private and public institutions, 2 worked in the private sector (on fixed-term contracts) and 1 was unemployed.

A third of the interviewees lived outside of their country of origin at the time of the interview, either in another LAC country, Europe or North America. Slightly more than a third of the interviewees had one or more children. In terms of their disciplines, 23 worked in science, technology, engineering, mathematics and medicine (STEMM) fields, 7 in the social sciences and 1 in humanities.[4] The interviews were conducted online in the first language of the research participants (Spanish or Portuguese), and these lasted on average slightly over an hour. The audio-recording was transcribed by a professional service, and the text was pseudonymised by two of the authors of this report.

The interviews addressed the perspectives of the participants on the constraints faced by them throughout their careers, the strategies they implement to overcome them, and their perceived success. The interviews also addressed the topic of international, inter-sectoral and organisational mobility, the participants' overall aims and motivations, and their relation to their identity as an ECR/young researchers. However, a lot of the focus of the discussion was driven towards the description of obstacles currently faced by the interviewees in their careers.

Researching the LAC region

Before addressing our interviewees' narratives, it is relevant to say a few words about LAC as a region. The LAC region encompasses a wide geographical and socio-cultural diversity. To acknowledge the differences that exist *across* and *within* countries, and achieve a higher

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[4] Please see Appendix 1.

representation of the diversity in this region, the subset of countries surveyed by this study was selected based on the contrasting differences of their scientific and higher education systems. Among the differences considered to make this selection were expenditure in research and development, research activity (UNESCO 2021), publication outputs, PhD degrees conferred per year (RICYT 2020), PhD graduates per million inhabitants (UNESCO 2021), patenting (WIPO 2021) and international mobility of scholars (UNESCO 2021). Among other practical elements considered in the selection process was the local access and support facilitated by GYA members and partner institutions established in the region. As a result of this selection process Argentina, Brazil, Colombia, Cuba, Guatemala, and Panama were selected as the focal countries for performing this study. Five interviews were conducted per country, except in Guatemala, where six interviews were conducted.[5]

The aim of studying the narratives of ECRs in dissimilar countries was to highlight the explorative character of this first step, in which the narratives from ECRs originating from or working in a variety of higher education and research systems are included in the analysis. In this report, the nationally structured systems of the LAC region are considered as contexts that shape the trajectories of ECRs, and are not the key element of the analysis. For studies that cover this analysis and compare different national higher education systems, see Teichler et al. 2013; Bennion & Locke 2010. However, a comprehensive study at the scale of national systems, across the LAC region, using a comparative perspective is yet to be developed. Therefore, this report seeks to contribute to, and inform the discussion about future large-scale studies dealing with the experiences of ECRs.

2. CONSTRAINTS, AFFORDANCES AND ECRs' STRATEGIES

Scientific and higher education systems present a series of affordances and constraints to ECRs. By constraints, this report refers to the wide range of obstacles that ECRs face in their careers – a topic that often dominated the conversations with research participants. Affordance is a concept borrowed from environmental psychology (Gibson 1986) that, in the context of this report, refers to the elements, circumstances and opportunities that social contexts provide to the ECRs' careers (McAlpine & Mitra 2015). While a chair affords the possibility to sit down and food affords edibility, the scientific and higher education systems in which ECRs develop their careers afford certain possibilities – or foreclose them. The relationship between young researchers' lives, career-goals, and socio-structural contexts is at the core of the interplay between constraints and affordances

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[5] These interviews were conducted online during May and June 2021. Franziska Schreiber conducted 13 interviews in Spanish with ECRs from Argentina, Colombia, Cuba, Guatemala and Panama. Alejandro Miranda-Nieto conducted 17 interviews in Spanish and Portuguese with research participants from these countries, as well as Brazil. Nadia de León Porter conducted one interview with a research participant from Guatemala.

and the individual's (perception of the) ability to navigate these to his or her advantage.

During the interviews, the research participants were asked to describe the constraints they have been confronting – and did fluently so, probably because they are more noticeable than the affordances of the systems in which they live and work. Transitional experiences, such as searching for academic positions after PhD graduation, planning to have children, trying to secure research funding, or changing institutions, fields or country of residence dominated the conversations because of their pressing character. While these narratives contain hints of the affordances of the systems in which they live and work, the issue of what possibilities were offered by the systems in which they work and live were vaguely addressed. This topic requires further exploration through a combination of quantitative and qualitative techniques in the subsequent phases of GloSYS LAC.

The most prominent constraints described by the interviewees were job precarity, financial insecurity, research funding and deficiencies in research infrastructures. Other constraints highlighted include lengthy bureaucratic procedures, clientelism, productivism in academic research, the prominence of the English language in scientific communication and the tension between developing a career and pursuing life goals.

Given that ECRs negotiate their intentions in an asymmetric relationship with structural factors, they navigate difficulties using a variety of strategies, which are not sharply defined for every obstacle as each is only applicable to a particular life, place and time. In most interviews there were suggestions of the approaches that research participants used to address these problems. The following section presents a set of obstacles and tactics used by interviewees to overcome them. These are presented in a constraint-strategy fashion to emphasise that these are inseparable from the researchers' experience. Before addressing these points, however, we present two cameos to better illustrate the interplay between constraints and strategies.

Two cameos

Diana,[6] mid-30s, developed most of her career trajectory in a LAC country that isn't her home and is still there. After completing her undergraduate studies in Cuba, her place of origin, she started working. Finding it '*not as entertaining as I thought,*' she applied for a Master's and was twice rejected. So, she began looking internationally: finding scholarship options in LAC countries and beyond. She applied to one in LAC due to a friend living there. She was accepted and expected to return home after completion of the degree. But she enjoyed performing research and decided to continue straight on to a PhD. She also recognised that finding a job at home would have been

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[6] The names of all research participants have been pseudonymised.

difficult due to the economic situation. She managed occasional visits to her family. After her PhD, finances were a '*tremendous worry*' and thus, she started teaching in a private university on an hourly based contract as this was easier than obtaining a teaching position in a public university. She then had a brief contract as a researcher in a public university. At that time the continued job uncertainty made it '*very difficult to think about having a family*'. She finally obtained her current job in a public regional university, which supported her integration into the national researcher's system. Currently, she is a full-time research professor on a contract that is renewed every six months for the first two years, time after which the contract will gain permanency. Now with a job and a steady income, she wants to: '*enjoy my free time, take a holiday […] help family at home*', and in her work, '*to focus on the subjects I research, mak[ing] a contribution …not to knowledge in the abstract …but …to help us know more about ourselves as a society.*'

Alma, mid-30s, also pursued her undergraduate coursework in Cuba, her home country, but did not finish her thesis because she had the opportunity to work in the tourism sector in a European country in 2009. She worked there in different jobs until she had saved enough money to complete her undergraduate thesis at a public university in 2012. She decided to continue with the same supervisor to do a Master's degree. After completing the degree in 2014, she returned to her home country. But the economic situation there was difficult, so she returned to the same European country and applied for European PhD scholarships. She attained a scholarship and a four-year part-time teaching job in a European country in which she is currently residing. The same country her partner was working in at the time, although in a different city: '*our common language is English*', although it is neither's first language. So, she moved and did her PhD in a university there, with the teaching helping to support her financially. After graduating, she obtained a postdoctoral contract in a public university interdisciplinary research centre. Unfortunately, the contract was interrupted because of the institute, so either '*I had to apply to the social welfare aid or live off my savings which weren't sufficient.*' She is still residing in the same country (but not city), as her partner has now obtained a permanent position there. This '*lightens the [financial] burden.*' Now as a contracted researcher, she is working on another project in the same centre. Her goals now are: '*to achieve professional stability so that I can continue to contribute modestly in whatever way I can according to my abilities; and… achieve a balance between my professional and personal life… to have that mental strength… to be in good spirits to help others and to collaborate.*'

The cases of Diana and Alma are representative in this study because they show that scientific careers among ECRs in LAC are often interrupted, delayed and shaped by changing socioeconomic circumstances. They show the entanglement between several key themes, among the most relevant of these being job precarity, financial insecurity and a careful negotiation of career- and

life goals. They also reflect the different forms of mobility that are strategically used to increase career opportunities and negotiate the way through multiple obstacles.

Strategy: international, inter-sectoral and organisational mobilities

Mobility denotes a change of condition (Canzler et al. 2008), but applied to ECRs, the term often refers to international changes of residence. In the literature, researchers' mobility has been framed under various and differing perspectives. For example, as international mobility from 'peripheries' to 'centres' of knowledge production (Marginson & Xiu 2021), as the drainage or gain of 'brains' (Siekierski et al. 2018), or as the emergence of global knowledge communities (Scott 2015). While the narratives of the interviewees confirm these forms of movement, they also suggest that various forms of mobility interact with one another, and emphasise that there are other types of mobility, including organisational or inter-sectoral mobility to be considered in this and future studies.

Diana, Alma and other interviewees show that the trajectories of ECRs from the LAC region are not linear and are characterised by twists and occasional interruptions. Both ECRs found the opportunities in their home country rather limited and did their postgraduate studies abroad. As they advanced in their studies, they gradually became more interested in pursuing a research-oriented career. While they were interested in developing specific sets of skills and lines of research in their postdoctoral roles, these 'epistemic factors' (Laudel & Bielick 2019) were shaped by their linguistic abilities (Alma has a good command of English, while Diana does not), financial status, family and complex interactions between life and career goals. International, inter-sectoral and organisational mobilities are not merely explained by a relentless pursuit of career advancement. Among the interviewees, these changes are mostly framed by the absence of, or access to concrete job opportunities, rather than the development of specific lines of research.

Some of those with postgraduate or postdoctoral experiences abroad return to their country of origin motivated by better work opportunities and the possibility to contribute to the scientific development of their country. Mario, a Guatemalan STEMM researcher who moved back after completing a PhD and a postdoc in two LAC countries, suggests that returning '*was a bit difficult because it's hard to come back to pick stones* [regresar a picar piedra]'. Still, an offer of a stable job and income, being able to live close to his extended family, and opportunities for developing a line of research that is novel in his home country contributed to his decision to return to Guatemala. '*There aren't many job options overseas, anyway*'. Still, Mario feels that he has returned to 'pick stones' in the sense of dealing with a bureaucracy characterised by long, inefficient administrative

processes and with an academic oligarchy that has weak academic credentials and that is suspicious about his attempts to introduce reforms into research and teaching programmes.

For ECRs in the LAC region, family, financial status, and linguistic abilities (predominantly English proficiency) have a significant impact on the potential for, and interest in moving internationally. Among interviewees, the choice of studying in other LAC countries or Spain was partially attributable to the fact that they offered programmes in their native language. In other cases, international experiences before their graduate studies allowed them to develop the skillsets to command foreign languages, enabling them to move in different realms.

Daniel, a Colombian social scientist, returned to his home country after doing his PhD in Europe. Over the last years he has tried to develop a career that combines research and policy advice, which is a form of inter-sectoral mobility that fits his disciplinary background. At a young age he and his family moved to several countries, which facilitated his MA studies in a European university because of his exposure to different languages. After graduating from this Master's he returned to Colombia and began working at a teaching-oriented university. At that time, he started publishing in local and international journals, and then enrolled in a PhD programme in Europe. Since his research interests are closely linked to policy analysis and advice, he has tried to sway across different sectors, working in the Colombian public sector and for several NGOs, while also seeking to develop an academic profile. *'I remember talking to my PhD supervisor and she told me, "You really have to choose", she said, "You have to choose between being one or the other"'*, referring to becoming either an academic researcher or a policy advisor. *'And she is right if I am going to work in Europe, but here in Colombia these two things can coexist.'*

Daniel's mobilities are distinct, as they have a particular family, financial and linguistic configuration, even before his doctoral studies. Considering the different cases of the interviewees, there is great disciplinary variability when it comes to changing sectors: while in some disciplines international or inter-sectoral mobility is expected, in others it is less frequent (Dietz & Bozeman 2005). Overall, the conditions related to moving from academia to a different sector, or moving between them as opportunities arise are issues that need further exploration.

Furthermore, the increasingly precarious conditions of academic research in the LAC region and most regions of the world make evident the need for inter-sectoral mobility. Since there are not enough jobs in academia for most qualified researchers, fostering mobility between academic research, government, business and non-for-profit is essential for ECRs. As Diana points out, *'there is a disconnection between* [postgraduate] *programmes and the labour market'*, so rethinking

doctoral and postdoctoral training beyond the development of careers in academic research would benefit both researchers and multiple societal sectors (OECD 2021: 38–39).

Staying or moving countries, regions within countries, organisations or sectors constitute some of the most important strategies that ECRs have at their disposal. It is therefore unsurprising that all of the interviewees have experienced mobility within their countries of origin or have at least changed institutions and/or sectors, and one third of them currently live outside their country of origin. The notion of 'brain-drain' frames ECRs' mobility as a one-way pattern, but many ECRs from LAC participate in networks of collaboration that extend across different geographical scales. As it is described later in this report, the development of durable networks in and beyond ECRs' countries of origin is one of their main strategies to access resources, recognition and information. The internationalisation of research constitutes a key aspect of the trajectories of contemporary scientists, an issue highlighted in previous GloSYS studies (Friesenhahn & Beaudry 2014; Geffers et al. 2017; McAlpine et al. 2020). However, there is limited information available on how international, inter-sectoral and organisational mobility interact with each other; therefore, further studies are needed to understand how these shape ECRs' careers. A main driver of mobility originates from limited opportunities, as expanded in the next section.

Constraint: job precarity

Alma, introduced above, has developed a variety of skills in the social sciences and the humanities to adapt to potential employers. Her post-PhD experience, as that of other research participants, has been characterised by a series of short-term positions. While she has shifted disciplinary and methodological approaches to achieve certain continuity from job to job, her current situation remains insecure:

> *'I think the main obstacle is job instability, short term contracts and the fact that postdoctoral researchers are framed as trainees. This limits our opportunities to obtain permanent contracts. In contrast, employees who are not framed as trainees can aspire to a permanent position after three years of continuous contract.'*

The difficulty to obtain a stable job, as identified by Alma, is not only marked by the short duration of the contracts, but also by the scarcity of opportunities that ECRs working in LAC and other regions of the world experience. Diana highlights how her post-PhD experiences were '*very stressful and generate much uncertainty*' because they turned harder than she first thought:

> *'I may have been naive in thinking that if I did all the right things, followed the right steps,*

passed all the tests, things would eventually get easier and I would be able to obtain a permanent position [as a researcher]. But when I finished my PhD I realised that there are many people with doctorates just like me, who have been competing for permanent positions for years without any success.'

In describing herself as naive when talking about the difficulties of navigating the academic job market, Diana's comments resonate with the questions that Tania asks herself in relation to her current situation as an unemployed scientist. Tania is a Colombian woman who did her postgraduate studies in a STEMM field in Mexico and a postdoctoral fellowship in Spain. She is currently looking for a job in Mexico or somewhere else, and while reflecting about her current unemployment situation, she wonders to what extent is she responsible here:

'[…] this discourse that I was taught as a child, is that if I study and give the effort, that everything relies on me, that if I give my heart and soul into it, I will succeed. This discourse is very strong, and it has a strong emotional impact on us. Because when we fail, we are to blame. 'What did I do wrong, didn't I give enough, wasn't I capable enough?' All the blame is on us.'

The most pressing obstacle emphasised by the interviewees is the current precarious job market in the LAC region and abroad. This constraint constitutes a research topic that needs a thorough understanding to improve policies and practices worldwide (OECD 2021). What characterises the narratives of many of our research participants in LAC is a contrast between their enthusiasm for their research activities and disenchantment with their current work conditions. Among the interviewees, job precarity was emphasised by those researchers in temporary positions (e.g., postdoctoral fellows) or unemployed. However, some interviewees who have ongoing positions also described how precarity affects them even while having a stable job. Presented below are the strategies that have been adopted by the interviewed ECRs to address job precarity.

Strategies: becoming more versatile and working harder

Alma is one of the interviewees facing job security. She has tried to diversify her disciplinary and methodological approaches to build a more attractive profile to potential employers:

'I have tried to tackle this obstacle by becoming more versatile. I think this is something that we Latin Americans are forced to do. We are pushed to reimagine ourselves as people and professionals and to swim in the waters that are presented to us. In my personal experience, this has meant changing cultural and political systems. It has been a bit like, 'This is what

there is, let me see what I can do, without losing my essence as a person or as a researcher.'

For many of our research participants, learning to swim in different waters has implied becoming flexible with their research foci and disciplinary approaches. But sometimes this is not enough. Working harder is, in fact, the most common strategy described in the interviews – also something that Alma has used to complete the publications stemming from different research projects:

'I try to set aside time for writing articles on other topics, which means spending non-working hours on it. For example, to finish my book I had to put in extra hours. I put some days of my holidays into it too, because I didn't have the full understanding of the principal investigator when I said I was going to work a bit on my book, but that was separate. Because it's also a different subject. I don't think she was that interested in it.'

Constraint: financial insecurity

Researchers without the security of a permanent position are certainly more vulnerable in personal and professional terms. However, some of those who have continuous employment are also affected by structural crises. These other forms of precarity are particularly noticeable in the narratives of researchers working in Argentina, whose careers and everyday life are currently affected by the economic depression, funding cuts, decaying scientific infrastructures and economic inflation:

'Salaries are a pressing problem. Salaries have not been adjusted for years to commensurate with the economic reality lived in the country and we have experienced it in the research team [...]. It is unsustainable, because the income for a research career is very restricted, it is at the exact same level as it was during the 90s in Argentina. This has been disastrous for CONICET.[7] Last year, only two new researchers in the whole country entered the education field. There really are no vacancies. To apply for a vacancy we need scores that do not exist. Researchers who are overqualified and who would easily get a position elsewhere in the world, cannot obtain a position in the public organisation that trained them. [...] In my opinion that's the biggest problem that we are having here, which is also a problem that I have: low salaries... If I had to live on my own and support my family with my salary only, of course I wouldn't be able to do it.'

In this excerpt, Elena, an Argentinian social scientist, describes how low salaries and the scarcity

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[7] CONICET is the National Scientific and Technical Research Council of Argentina, which coordinates most scientific and technical research.

of job positions affect ECRs. Underfunded scientific systems, poorly paid jobs and extremely competitive conditions produce desperation and disenchantment among many young researchers. Carla, an Argentinian engineer who is working as a researcher in the manufacturing industry while doing her PhD, also pointed at the issue of salaries affected by the inflation:

> *'I had a hard time getting a job as an engineer at the beginning. In this country everything costs twice as much, I can't aspire, for example, to buy a house, or a flat, because my salary is less than $1,000. […] With all my years of experience and about to have a doctorate, I can't even aspire to buy a house. Where do we get the money from? With a salary of less than $1,000, I don't have anything to start with.'*

Telling examples of precarious work conditions can be found across the whole region, but Esteban, a Cuban researcher working in a STEMM field, reflects on how the particularly difficult economic situation in his country affects access to basic consumption commodities:

> *'From a financial point of view, we all know that Cuba's situation is very precarious because we have no land borders, we have no access to many international markets, as a result of state policies. This means that sometimes we can't find products, or if we do find them, we pay a higher price. Therefore, the average salary in Cuba is somewhat reduced, even after efforts made by the government to increase the salary. The shortage of products reduces the value of the salary. For example, to buy a kilogram of rice, I would pay around $2 on the international market, however in Cuba this can cost up to $4 because importing products to Cuba is expensive.'*

Strategies: coping or moving abroad

While our interviewees did not describe concrete strategies to deal with financial insecurity at the personal level, they expressed it as an issue that needs to be endured. In contrast, Carla and a few others saw emigrating from their countries of origin as a possible solution. Carla's plan '*is to leave Argentina for good, that's my strategy, because I won't be able to do anything here. There are many limitations*.'

Constraint: lack of funding

Securing research funding is a problem for most researchers around the world – but in LAC, it constitutes a profound concern and obstacle. The most recent UNESCO Science Report (UNESCO 2021) shows that research spending in most LAC countries has stagnated since 2015. Since then, the average research intensity for the whole region has been reduced from 0.69% to 0.62% of the

gross domestic expenditure in research and development (GERD), which is a share of the gross domestic product (UNESCO 2021: 210). While research spending has increased in most countries worldwide, this has not been the case for Latin America and Central Asia, the only two regions lagging (UNESCO 2021: 47). How can scientific systems in LAC develop without sufficient economic resources? Amalia, a Brazilian researcher in the field of zootechny, describes how research funding constitutes one of the most relevant problems that she and her colleagues face in Brazil:

> *'One of the main things is the question of funding, because young scientists need to publish, much more than senior scientists to compete for funding. Because we don't have a name, we must make a name for ourselves to obtain funding, and this takes many years.'*

To stay afloat, meeting deadlines, helping postgraduate students, and ensuring the continuity of their research projects, Amalia indicates that professors in the postgraduate programme where she works *'take money out of their own pockets to carry out their research. They even buy food to feed the animals, to be able to maintain their research, so, this is routine here'*. She went on commenting how a pump burned recently and all the professors contributed with money from their own salaries to buy a new one. The lack of resources makes it difficult for professors like Amalia to sustain their research and teaching.

The common belief among interviewees is that public institutions in their countries have little interest in investing in research and development. This problem is far from a belief: among all the countries in LAC, Brazil is the only nation that dedicates more than 1% of its GERD to research and development, which is the common expenditure intensity among upper middle-income economies (UNESCO 2021). Inadequate funding has detrimental consequences at different scales, and particularly ECRs in LAC sense that developing their scientific activity is like swimming upstream. Eduardo, a STEMM researcher from Guatemala indicates:

> *'Research does not really figure in public policy and is not a governmental priority. It is very far from that. We have very little funding, there is no funding available, it is practically what I was saying about the direction of the university, it is one of the few institutions in the country that funds research. There is another government institution, but the money is diverted to other issues and is not necessarily used for science projects. [...] Scientific research is not one of the priorities.'*

Lack of funding also limits the participation of researchers in important conferences in their disciplines. This was noted by Esteban, introduced above: *'Access to funding to attend conferences and events is also limited by a financial problem within the country [Cuba]. Basically, the problems*

faced by us researchers are infrastructural problems caused by the lack of financial resources.'

Strategy: coping with insufficient resources

In responding to the question of how to deal with funding cuts and lack of resources, Carla, mentioned above, thinks that:

> *'We just can't deal with it. The only way is to go abroad. It doesn't only happen in my example as an engineer, but also with biologists. Here I have met many PhDs in biology, who stayed abroad after finishing their PhDs, because they needed special tests that are unavailable at home.'*

Constraint: deficient and insufficient infrastructure

Apart from precarious job markets, financial insecurity and insufficient research funding, the lack of economic resources has a direct impact on research infrastructure. In this regard, there are great differences between countries, as well as within countries. An example comes from the huge regional differences in Brazil, which impact ECRs' access to infrastructure. Sara is a STEMM researcher who studied in the south of Brazil and now holds an ongoing position as a researcher in the north of the country. She describes how these regional differences impact her access to laboratories and her personal finances:

> *'If I was in the south [of Brazil], I would have access to work in two different universities, in the laboratories of my previous mentors. This would be much easier for me. Young scientists with the opportunity to work in the laboratories of their former mentors, who act as 'scientific fathers', have a higher chance to grow in their field and careers. However, this is different for researchers who like me, leave their comfort zone and go to the interior [of the country]. We pay a high price for that. [...] I have taken money out of my pocket several times to buy reagents for my students. My students take money from their grants to also pay for reagents and article revisions that are sometimes required to be able to publish in higher quality journals.'*

For Barbara, a STEMM researcher from Panama, the main obstacle for conducting her research is the access to physical space to work:

> *'The first problem for my institution was to provide me with the space to perform my research, because there was no space, research group or laboratory in the line of research I am pursuing in my university or in any other institution in the country. I keep jumping*

around, asking from lab to lab, 'Can I borrow your space?' This includes moving around the reagents I have acquired for my projects.'

Among the ECRs who are conducting research in other regions of the world, the infrastructural deficiencies in LAC become much more evident. José is an Argentinian researcher working in a STEMM field who completed his doctorate in his home country and moved first to France and then to the UK for postdocs. In comparing his experiences, he highlights that:

'Problems with infrastructure in Argentina are obvious. For example, here [in the UK] I ask for reagents and I have them in two days, and in Argentina I had to wait six months to obtain a reagent, perhaps because of political and economic issues. These problems happened to me a lot in my country, then in France, but not here [in the UK].'

Later in the interview, José offered a more nuanced perspective when describing his experience during his doctoral studies:

'In Argentina, […] luckily, I was in the laboratory where, despite shortcomings in scientific management, there was always money. Often these shortcomings were compensated with the availability of resources to do other things. In this aspect, I haven't suffered more than being in a situation where wanted to do something and perhaps not having the money to do it or not having the means because we didn't have the equipment, so we had to go elsewhere, or because if we wanted to buy supplies it took too long for them to arrive.'

Another relevant shortcoming relates to access to scientific literature, which greatly varies among countries, and regions within countries. As Esteban (mentioned above) indicates:

'[…] Access to resources – This is a serious problem here. In terms of bibliographic resources, access to large databases (e.g., Web of Science or Scopus) is a chimera for Cuba, as it is not possible to access them from Cuban universities.'

The lack of equipment sometimes affects research and teaching activities simultaneously, as Tamara, a STEMM researcher from Guatemala points out:

'The equipment required for the type of research I do does not exist in my country, it is very expensive and very specific. To justify the acquisition of this equipment we would need a group that would use it regularly, and I think that only I and the students I mentor are the only ones in Guatemala working on my research line. Some of the stronger research units

have managed over the years and with the different projects to buy certain equipment, but in my case, there is no equipment.'

Strategy: networking to navigate underfunded scientific systems

Barbara (mentioned earlier) suggests that seeking to compensate for deficiencies in research infrastructure and finding alternatives to continue conducting her research is a gradual process that requires patience and support from others: *'I try not to get frustrated and to continue with what I can, with what I have'*. To make the most of the resources she has at hand, Barbara relies on networks within and outside her institution to sustain her research activities and that of her students. They perform some of their experimental research in the laboratories of Barbara's colleagues based in other institutions because the facilities are insufficient in their own university. *'It is by asking favours that the work can flow'*.

It is common sense that networking plays a relevant role in people's career advancement. Indeed, ECRs' networks constitute a valuable resource, a form of social capital that in the context of this report is understood as 'durable networks of more or less institutionalized relationships of mutual acquaintance and recognition' (Bourdieu & Wacquant 1992: 119). Networking allows ECRs to forge collaborations, access information and support, receive encouragement and recognition from their peers, and even facilitate their career mobility (Ismail & Rasdi 2007). The literature has since long suggested that the development of networks that support ECRs careers is associated with mentoring (Burke 1984; Kram 1985). Previous GloSYS studies have documented the relevance of mentoring in Asia (Geffers et al. 2017) and Africa (McAlpine et al. 2020), highlighting the role of mentoring programmes for networking and career advancement among ECRs. Unfortunately, for Amalia, mentioned earlier, the absence of systematic mentoring programmes in their institutions has led her to proactively build her own networks without previous assistance:

'I didn't have a 'scientific father', I didn't have a former mentor, I didn't have a person who gave me an infrastructure to work with. I had to seek opportunities. I had to go there and show my face and say: 'I can work with you. I have this, this and this to offer you'. I only had my intellect to offer, I had nothing else. My arms and my brain to offer. I had no money, I had no infrastructure, I had nothing. So I think mentorship and infrastructure are some of the biggest challenges.'

Despite not having systematic support to nurture professional relationships, Amalia's networking efforts have been crucial for obtaining support, developing skills and securing economic resources for continuing her research. Later in the interview she described her networking tactics for securing

funding, which involved sharing those resources with senior researchers:

> *'[...] There is a colleague of mine, who is the most senior in the lab. I help him to write projects, and he has already won bigger projects, because he is much older than me. So, he has already won bigger projects and we both use the grants for our research. So, my strategy is developing partnerships. We divide the money in a way – how can I put this? Not really 'divididinha', right? But we both get part of the resources to finance research for our students.'*

Partnering with senior colleagues, as Amalia has done, is a useful strategy to secure funding for her and her students. Similarly, a combination of informal and formal networks with international partners is crucial to overcome certain limitations in their institutions, as Esteban, mentioned before, tells us:

> *'Right now, international collaboration is the strategy that I apply the most and perhaps that many of the professors and researchers in Cuba adopt. International collaboration is fundamental, the creation of networks, even informal networks, networks that do not have funding, but which function thanks to the enthusiasm and dedication of their members. I think this is fundamental and for me personally it has helped me a lot. Above all, to access information resources that are essential to be able to develop cutting-edge science.'*

In the same vein, Milagro, a STEMM researcher from Argentina, describes the relevance of conferences:

> *'Collaborations are fundamental. If we don't find collaborations, we won't be able to do much, so we must maintain the links that we already have, that we were able to achieve during our years of study and then create new ones, whether colleagues who are in the same area as we are here and in other parts of the country or in our own province. That in turn connects us. When attending conferences or congresses, it is essential to look for possible allies. This is the way to move forward, to apply for calls and to write proposals. At the beginning we have to do it little by little, because that's the only way.'*

Constraint: bureaucratic procedures – or becoming 'very good at what doesn't matter'

Bureaucratic procedures, particularly those inside our interviewees' institutions, were described as a hindrance. While not constituting a major obstacle in ECRs' careers, long, inefficient administrative procedures are identified as distracting and tiresome. And also identified as

distinctively Latin American. João, a STEMM researcher working in a prominent federal university in Brazil, located the source of this issue in obsolete laws and procedures, '*in the sense of how the laws are written for us to execute our work*'. Although this is the case in many countries, João's description of his experience in this federal university as a hindrance that affects '*not only the time that we spend to solve that; but a weight, not an emotional weight, but it is like a [consumption of] RAM memory in our computer, let's say, that we have to think with that; that has to stay in our head.*' Many of our interviewees commented how bureaucratic procedures are not merely an issue of spending time; that is, the length that such administrative procedures take. There is also an emotional dimension that '*introduces stress, a weight, tiredness*', as João describes:

> '*I think that's a big challenge. For example, the forms I have to fill out to spend a day at a University in a neighbouring town, paying a visit to another professor. For an academic, that is an absolutely normal activity. But I have to fill out a website, attach documents, make a one-page report about why I went there. So, we have this kind of bureaucratic issue that should be a simple thing, right? In any developed place, visiting another teacher is a normal activity, and that has to be encouraged. And whether you like it or not, in Brazil, not only in [João's institution], in any Brazilian university, we have to fill out a lot of forms, so there's a lot of bureaucracy for that. So, I think we have a lot of these little things that end up adding up.*'

Strategy: coping with bureaucracy

João, as other research participants, deals with bureaucratic procedures by automatising and simplifying as many steps as possible, becoming faster at something that he regards as unimportant:

> '*So in general my strategy is to try to become quite efficient at things that are not important. So I'm very good at what doesn't matter [laughter]. I'll use this example again: I want to visit a colleague in the University next door. So, I have a website and I already have everything planned on how to fill out that website, I have a series of reports that I have to put in; I have the templates ready. So, I can do it in five minutes. Whereas before it used to take me half an hour, 40 minutes. So, I have already become very efficient in that. I have always tried to follow this path, to be efficient in these things, to lose as little time as possible in these issues that are not relevant.*'

Among universities, research centres and many other institutions in LAC, there is room for becoming more efficient in their administrative procedures. A better organisation of administrative

systems should not be limited to their digitisation, as the promise of immediacy, speed and order associated with digital systems often falls into the cracks of obsolete laws and procedures. Our interviewees based in LAC institutions stressed the urgency of such changes because much energy and time is used to deal with bureaucratic procedures, instead of scientific pursuits. Automatising, simplifying and delegating tasks to professional administrators could significantly improve this issue.

Constraint: clientelism

Clientelism refers to an order based on relations of patronage and convenience. As such, it stands against values of fair academic competition and merit. Although clientelism and corruption are particularly difficult topics to address in their own right, some of our interviewees described them as characteristic of the academic life in LAC research institutions – especially when ECRs compete for research positions. Javier is a Cuban researcher in a STEMM field who studied his PhD and has held several postdoctoral positions in Mexico. In his quest for an ongoing position in his field, he has competed for several jobs in his current country of residence and overseas. As an ECR who has navigated the Mexican research system for several years, he commented:

> *'Last year, some positions were opened at a public university, several professors were about to retire and those positions were opened. [...] The head of the department held a meeting and I was very surprised, because the meeting was to clarify that the process was going to be transparent. That really caught my attention and I said, 'How messed up the situation must be, that they have to hold a meeting to clarify that the process is going to be transparent'. All the people who were there, some of them were very upset, it's like, 'This is weird, isn't it?' It's like a comedian who said: when arriving at a house, people read on a sign "Please don't blow your nose on the tablecloth of the house". It's such an obvious rule that it strikes you when they have to make it explicit. The result is that the first part of the selection process was transparent, but afterwards became a little opaque and that's it. We never knew if it was fair or not.'*

In resonance with Javier's description, Sofía, a social scientist working in Colombia, highlights the importance of having the right connections to access academic positions:

> *'If we don't have a recommendation... these are positions that open up, but they already have a name for the position. The majority of us are employed as casual lecturers, by the hour, we are employed under service contracts, which are contracts that have terrible conditions in terms of social security.'*

A few of our interviewees even reported the mismanagement of resources that directly affected them in their research activities, as Carla, mentioned earlier, says:

'There is a lot of corruption in general, in the country, in the state, in the university, everything, the money that, for example, we had earmarked to buy supplies, they didn't buy them for me. They always put obstacles in my way to make the purchase, and then I saw that this person took a lot of money, not only stealing resources from us, but from other researchers as well.'

Strategy: networking

The research participants did not mention any specific tactics to deal with clientelism or corruption. But if we consider the importance of networking and mentoring for their careers, it is possible that much can be learnt from investigating the extent to which ECRs' development in their disciplines relies upon help from sustaining good relationships in environments in which patronage and convenience are present. In many countries in the region there have been efforts to develop administrative mechanisms of academic merit and 'fair play' to gradually replace favouritism and patronage (see, for instance, Constantino et al. 2019). Still, corruption and clientelism in the scientific systems in LAC need to be further explored as a topic that could greatly impact policy and practice in many countries and institutions.

Constraint: productivism

The literature on higher education and social study of science shows how the managerial logic that currently pervades scientific systems around the world sets researchers into fierce competition (Hyde et al. 2013). There is evidence that this trend is severely affecting researchers' wellbeing (Bottrell & Keating 2019). To stay afloat, ECRs strive to produce as much as possible, although many publish and still perish because of the scarcity of opportunities. And while producing more and better appear to be reasonable goals for the development of scientific knowledge, ECRs have little time to pause and reflect what 'more' and 'better' actually mean for their own fields, careers and personal lives. A productivist approach to scientific activities can hinder creativity and affect scientific rigour and integrity (OECD 2021).

An example of such a productivist approach comes from the dilemma of publishing in Open Access journals versus paid, high-ranking journals. Although digital innovations have brought a multitude of opportunities to develop Open Science, Open Access and the dissemination of findings, data and publications through different media, ECRs do not fully benefit from such innovations. The

precarious academic job market and conservative perspectives in the fields in which they work are major constraints that push ECRs to choose high-impact factor journals over Open Access ones for their publications (Nicholas et al. 2017). Felipe, an engineer with an ongoing position in Argentina, commented on his preoccupation with publishing more:

Interviewer: What are your current professional goals?

Felipe: *'It sounds bad what I'm going to say, but publishing papers.'*

Interviewer: Why would it sound bad?

Felipe: *'Because in science we are supposed to contribute to the development of humanity, not to publish papers. We can publish papers and still not do important work. Basically, one knows that [publishing as much as possible] is a constraint. If we publish more papers, we could be doing better research, but that is not always the case. One of my goals is to try to establish links, to connect with people so that I can increase my production and be more connected to the problems in my area.'*

Strategies: publish where it counts to your track record

Felipe's remark about the pressure to publish as much as one can conceals large, complex issues regarding the aims of scholarly research. Reflecting on the pace at which scientific knowledge is produced, its quality and social significance, involves questioning the widespread managerial approaches to the craft of scientific research. Many people and institutions welcome innovations in digital technologies to improve the production and dissemination of research. Yet, there is much to study regarding the potential and impact of data-intensive and Open Science practices in LAC and elsewhere.

However, from our interviews it is possible to recognise that ECRs are very preoccupied by their career development, leaving less room for finding ways in which their research can be open, or impact societal issues. The scientific research of our interviewees undoubtedly has direct and indirect benefits to their disciplines, institutions and countries. But the pressure to perform in very competitive environments diminishes the possibility of investing in research outputs that do not count towards ECRs' track records. ECRs in LAC (as in other regions of the world), and the quality of the research they produce, are in the grip of excessive competition.

Strategy and constraint: using the English language – or choosing when to do so

Besides the pressure to publish as much as possible, some of our interviewees communicated a tension between developing research with local or regional audiences in mind, and developing projects seeking to contribute to their disciplines at global level. ECRs in LAC often framed this issue in linguistic terms. For some young researchers, particularly in STEMM fields, the usage of English is accepted as a given: science is read, written and disseminated in English, no matter the location in which it is produced. For some others, publishing in their mother tongue, Spanish or Portuguese, as well as in English, are necessary to address different topics directed to local, national or international audiences. Still, most of our interviewees, regardless of their discipline, choose to publish more (or exclusively) in international journals in English because they count more towards their track record. Overall, there is tension between choosing to write in English for their international peers and contributing to their research profiles, and writing for their students and colleagues in their own language, for their local research environments, addressing issues of national and regional significance. Elena, introduced earlier, frames this dilemma as follows:

> *'One understands the rules of the game and the relevance of journals published in English in the field, and that in [the field of] education we are just starting out, fortunately, compared to other disciplinary fields. I manage quite well, I understand well, I write there [in international journals]. What we generally do when we publish in English is ask a reviewer to check us, to improve the literal translations we make from Spanish to English. It creates a lot of contradictions for me to publish in English. I study the implementation of policies in schools located in a context of urban poverty, and I think, 'This text that I'm writing in English; who is going to read it?' It makes sense in terms of academic logic, and it's useful, but that's not the only logic out there.'*

Strategies: gauging themes and audiences

Most of our interviewees have a strategic stance towards publishing, which consists of calibrating the themes they study and the audience to which they direct their writing. Far from being victims of asymmetric systems of global knowledge production, ECRs use their publications to maximise their career development, as Elena suggests:

> *'The truth is that for some time now I have stopped publishing for the sake of publishing anywhere. I look at where I'm going to publish because if it's not at least group one [a prestigious journal] for CONICET, it's of no use. It's of no use to me in terms of my evaluation, to say, 'Well, I want to apply for a career promotion', it's not going to help me. It's like making an investment of time.'*

Strategy and constraint: career versus life goals

Another dissonance in ECRs' experiences is the (in)congruence between career and life goals. Investigating the relationship between these two dimensions has the potential to reveal much about the state of young researchers because it approaches them as individuals who constantly negotiate their dreams, desires and everyday lives with their career development and the struggles of becoming an expert in their fields. An example that encapsulates this issue is the process of planning to have children as expressed by several of our interviewees. The following excerpt comes from the interview with Elena:

Interviewer: Any issues related to being a mother or family?

Elena: *'An incessant postponement of having a second child, because something is always about to happen [laughs] Most of those who were my directors and so on, are women, and it's no coincidence that they all have one child. The truth is, the year that I planned, that we decided with my partner to start the search to have a child, I applied to become a researcher [to an ongoing position], I had the image in my head that I must get in [entrar sí o sí]. It turns out that when my son was six months old I found out that I hadn't entered CONICET and didn't know if I had a job after those months. I spent the first few years, I spent my maternity leave writing papers, because the papers I wrote during my maternity leave were the basis for my admission to a career the following year. In those months of maternity leave I wrote two papers in English that saved my life, I'm pretty sure that's how it was.'*

Interviewer: On a personal level, what does that mean to you? Writing papers while you were on maternity leave.

Elena: *'For me it generated a very strong systemic anger, because it's like saying, 'What am I doing, where am I trying to belong?' At the same time, I also recognise that it's what I like [conducting research]. I like to produce knowledge, I like to think about what I do, and the conditions for doing research at university are not the same as those at CONICET. That is very different, because the times at the university are different. With a full-time position at the university we can do research, but the conditions that CONICET provides us with are different from those at the university. That was my main bet, the truth is that in that context it was very hard, I gained a year of great exhaustion, of great stress, of affected immune system, the truth is that I didn't have anyone coming to tell me, 'Don't push yourself like that...', and I didn't have anyone coming to tell me, 'That's it, don't take maternity leave, get back to work'. Of course I was the one who pushed myself like that, out of self-demand, out*

of desire, but it is extremely unfair, because it is precisely in this attempt to reconcile family life, the biological clock with what we want to achieve, that we come across a change, a terrible turn in scientific-technological policy [...].'

Interviewer: Has the second child been postponed?

Elena: *'Yes, postponed because of all this. In addition to that, it's very personal, but I also have my partner. He was involved in a company dedicated to domestic consumption. Domestic consumption was destroyed in Argentina. It was a situation that hit us very hard, in an economic moment when we are building ourselves up, that's where it went, that's where it's still going on [...] I'm going to be 36 in July, so we are going to pull the biological clock.'*

Strategy: postponing goals

Elena has decided to postpone having a second child because she perceives that the current situation is not ideal. She sees how economic crises, inflation, the reduction of public investment and shrinking of the scientific system are structural dynamics that directly impact her everyday life and work. Her strategy has been that of persistence, writing articles during her maternity leave, pushing herself to produce more and better despite the circumstances. Her struggles to reconcile her career with her life goals, her decision to postpone having a second child, reveal the interpenetration of career and life goals. For Elena, as for many ECRs in LAC, this constitutes a continuous balancing act. Another issue of delicate balance is that of deciding to persist in the pursuit of a research-oriented career or not.

3. PERSISTING IN, OR STEPPING OUTSIDE ACADEMIA

At the core of ECRs' experiences there is a dilemma of coping with the constraints of the systems in which they work or seeking alternatives beyond the academic systems in which they have been conducting research for several years. Persisting or moving to other sectors are strategic courses of action that many ECRs in LAC (and elsewhere) are constantly pondering. It is clear that our interviewees act in accordance with the explicit and tacit mechanisms of the contexts in which they work and live. But in dealing with recurring obstacles, some seek alternatives that may offer better work or living conditions. Persisting with the development of one's research profile or leaving a research-oriented career for a job in other sectors is a dilemma that some expressed as distinctive of their experiences. So far, the majority of our interviewees have opted to persevere and accept the current circumstances – not with passivity, but with different degrees of resignation.

Diana, introduced above, has recently been appointed as a lecturer at a university in Mexico. In reflecting on her academic trajectory, she describes how she needed to play by the rules and remain '*as positive as possible*' to finally obtain a stable job that allows her to continue conducting research in her field:

'Thinking that there are rules, that one arrives at a game with rules that are already established and that to play in that game, even if we want to change those rules, we first have to abide by them. Little by little I began to understand what the rules of that game were, we must adapt to them a little bit, always trying, personally, to be as serious as possible with my work, even if I have to dedicate extra hours to it, to try to do my best [...]. Thinking that it is necessary to play with these rules to be able to insert ourselves in this field and thinking, perhaps in a very positive way on my part, that all this was going to bear fruit, that I had to try, that I had to persist and that the opportunities were going to come. So in a way I dealt with it, trying to be as positive as possible, trying to take advantage of the opportunities that opened up, which were not few, taking into account the competition and the conditions, taking advantage of all that. The issue of precariousness, also coping with it, having several jobs.'

What does the celebrated freedom of conducting research and discovering unknown issues in one's discipline serve, when the only choice is to submit oneself to job precarity, fierce competition and pervading academic managerialism? Most of our research participants expressed different degrees of disappointment with the scientific, higher education and social systems they inhabit. This disappointment stems from a sense of having played by the rules with tenacity and perseverance, but just having received job precarity, financial insecurity and lack of recognition in exchange. Tania, introduced earlier, describes the emotional weight of being unemployed after following the steps that she considered necessary to build up her career:

'My background is very strange in that sense. I'm a chemist, but I also have a very strong mathematics background and I've spent my time doing physics. People don't like that because they don't know where to place me. While I feel that, obviously, my skills can play a role in many fields, that's not how I'm perceived, so obviously I haven't been able to get a job all this time. I've been unemployed since August [2020]. It's been very hard, very stressful, I've had episodes like anxiety attacks, I've felt very depressed. Because it's this reflection of, 'What have I done wrong? What have I done wrong?', I grew up in a lower-middle class [context] in Colombia where the normal thing was that you got pregnant when you were 13 and then you could work at anything, if you had a talent like painting nails,

cutting hair. The circle around the people I studied with was like that. I don't think I followed that pattern, I managed to get into the public university with a lot of effort, I managed to get my degree.'

Tania's disappointment stems from a feeling of having played by the rules and still being unable to secure a research position. Despite having lived in Mexico for eleven continuous years, her visa is expiring and she may need to return to Colombia at some point – a place in which she has no academic networks. But far from immobilising her, Tania's distress is pushing her to seek alternatives. Along with applications to research grants and postdoctoral positions in different countries, she has a number of alternative plans in case the others fail, such as applying to positions in the industry or even studying another degree in computer programming to be able to remain in Mexico. Later in the interview, Tania reflected:

'What did I do wrong?', I say, 'Maybe I did wrong on that. Maybe I should have done research on a topic that is more fashionable [con más salida]'. But I chose what I liked. That's difficult, to take a gamble on what I like the most or what can be useful. And I picked what I liked the most.'

Tania's bet on her own research interests has not yielded the work and financial stability that she expected. In contrast, Mauricio, a researcher in the field of veterinary who also comes from Colombia and has developed his career in Europe, has had a more strategic approach in adapting his research interests to the opportunities that have appeared in his path:

'I try to be very aware of the new things that are of interest in the clinic [...] what I do is try to link myself to these kinds of things that are of greater interest. I have had to accommodate myself to different subjects that are less interesting to me or that I didn't have so much experience in, because of the issue of funding, because in the end we have to do what we can.'

Doing '*what we can*' involves attuning oneself to different research environments, especially during times of harsh competition. But when the prospects of developing an academic career look foreclosed, seeking a working life outside the academy may seem the only viable route. What appears crucial in this context is the vacillation between reinventing oneself to pursue a career beyond the academy, or continue trying to develop a profile in academic research, despite the gloomy forecast of the academic market in LAC and elsewhere. Seeking alternatives beyond academia may look rather blurry and distant, compared to the familiarity of the fields in which they have been working for several years. As Alma suggests:

'My main motivation is that I like writing and that I aspire to be able to teach. I also don't know, and this is a negative motivation, I don't know what other role I could take on than an academic or journalism or writing role because that's what I am. I sometimes look at other job opportunities in industry, but I don't know what I could contribute. Maybe talking to one of these professional coaches, a professional coach could tell me what I could contribute, but I think we can all contribute in different fields, but from my current position I don't see myself in any other role that is not a creative role, or a research or education role. My main motivation is, I think, also the time invested in training myself to do something so specific. So specific, but also versatile because I'm not just asking for one kind of job, but a job in which I can use those skills.'

ECRs often face the ironic circumstance of being so specialised and qualified that they find it difficult to develop careers outside their subfields. In wondering about the role she could have besides teaching or conducting academic research, Alma points to an evident, yet relevant issue: that conventional academic education prepares professionals for a rather narrow job market.

Strategy: work harder – there's no time for smarter

To remain afloat, most of our interviewees work hard to sustain a level of productivity that allows them to remain competitive on the job market. Years ago, while she was trying to secure an ongoing position in Panama, Barbara, mentioned above, had to take up three part-time jobs:

'Looking back at that time, I say, 'Where did I get the strength? How could I do that?' Yes, it was a big challenge. I would get up, I remember, super early, 5:00 AM, 4:00 AM and I would go home at 10:00 PM, 11:00 PM every day. That was an exhausting time, pretty, pretty much. Other than that, on the weekends we would do turns for samplings, things like that. I really don't know where I found the strength. Yes, it's not easy to do all that and to be able to do research on top of it.'

Although nowadays Barbara struggles with a different kind of issues in her current position, the strain on her personal life has diminished over the last years. This transition is reminiscent of that of Marta, a social scientist also from Panama, who worked in the private sector for some years and finally found an ongoing position in a public research institute:

'When I returned from Mexico in 2013, my original profession was as a lawyer, but I always liked doing research. In fact, when I did my doctorate in Mexico, it was with the aim of being

able to generate research, to get involved in academia. Unfortunately, the salaries at that university are extremely low. I began doing consultancy work motivated by the research aspect, but I understand that consultancy work does not have the academic rigour that a university or a specialised centre can have, even so, I did it for seven years and there was always insecurity because consultancies are temporary. I had to do many things to be able to have the minimum necessary to pay for housing and basic services, food, etcetera. I worked long hours, 14-16 hours to be able to meet the minimum. [...] Even though I had to go through quite a lot of work at the beginning, in the end I worked on what I wanted or what I trained for, but it wasn't easy to get in. I had to go through all those years and, as I said, I had to make some sacrifices to achieve stability as a researcher.'

Working harder is a strategy that our interviewees use to sustain their working lives in highly competitive systems. Some of the ECRs' narratives not only described these situations as difficulties, but framed them as legitimate, and even desirable, sacrifices of their personal lives. As Sofía, mentioned earlier, tells us:

'I am asocial by nature [...], I don't go out on weekends, while there are other friends who are out and about, I'm writing articles on weekends, I'm in the library reviewing files when there are a few days off. In personal terms, which is a bit like what you say, maintaining research that is not being funded, because I love academia, I love research. Alongside three employment contracts or three contracts to live on, it means that I sacrifice my personal life. It means that I hardly go out. For me holidays mean being able to go to congresses in other countries. The personal cost is high because I can't have – I have a partner, quote-and-quote, but he lives in the United States. Everything works super well because he lives in the US, he comes to do fieldwork, we see each other for a while, even when he's here in Colombia it's like, 'I have to work. I'll see you on the weekend. If you want, I'll see you in the evening for dinner, I have two hours'. That's a cost that a lot of people are not willing to pay.'

In describing her personal life as affected by her career, Sofía interprets her strain as a cost to pay in order to continue conducting research. In the case of Rosa, a STEMM researcher from Panama, this strain is described as a personality trait:

Interviewer: Did you work during your maternity leave?

Rosa: *'Yes, that's my personality, I don't want anything to slow me down, I want to move forward. I was breastfeeding, I was at home, but I was still very much immersed in the lab, I'm not the type of person who disconnects, I'm still on holiday and I never manage to*

disconnect, I'm always very connected, so everything goes well [...]'

Interviewer: Even during your PhD?

Rosa: *'Yes, in my PhD too, I was always moving forward, not physically, maybe writing the papers, analysing the data, doing bibliographic literature, something I did during maternity leave.'*

4. WHAT DOES IT MEAN TO BE AN ECR IN LAC?

Many of our interviewees identify with the notions of 'early-career' or 'young' researcher, but they expressed ambivalence towards these categorisations. Their narratives vacillate between the meanings of biological age and the markers they use to define their progress as professionals. These ambivalent narratives are to be expected, since qualitative methods directed to explore social issues are optimal for capturing the ambiguity upon which many concepts are built. Far from a sharply defined term, the notion of 'early-career researcher' among our interviewees is controversial, vague and open to debate.

Since they were directly speaking about their personal identification with the notion of ECR, a little modesty often framed their initial responses: '*I don't have enough experience*' (Amalia, from Brazil); '*I still feel like a young researcher from the perspective of intellectual maturity*' (Renato, from Brazil); '*I still want to contribute a lot, [...] I haven't lost the motivation to continue constructing, [...] one is young as long as one feels that one can contribute*' (Daniel, from Colombia); '*I consider myself a rookie, a new kid in research*' (Aurelio, from Panama). But the nuance appears when they ponder the issue of biological age: '*I'm 38 years old, it's not that I'm a youngster*' (Eduardo, from Guatemala); '*biologically speaking, I'm not young, I'm a 36 year old woman*' (Alma, from Cuba); '*when we look at our age, there are young persons, very young who have advanced a lot. I say "jeez! I guess I'm not that young anymore"*' (Ricardo, from Colombia). Felipe, from Argentina, succinctly puts these two facets in his response: '*Although I am 39 years old, I think I am at the beginning of my career with research…. I don't have the necessary or typical background that people get outside or at other universities at my age.*'

In this way, ECRs in LAC contrast biological age with intellectual independence, motivation, or number of publications and grants. Yet, a crucial reference point that makes them feel not-so-young-anymore comes from comparing their career trajectories with those of their peers in other regions of the world, especially ECRs working in North America and Europe. As Mauricio, introduced earlier, mentions:

'I started very late with research, very, very late. Normally in the German system people already have their first publications and things like at 22, 23 years old, 21 years old when they finish their degree. I know people, colleagues or people who are doing their PhD who are at most 24, 25 years old and already have publications, they have everything. I started doing this when I was 30. [...] I'm still at that interphase between being an early researcher and being someone more senior. Because of my age I sometimes inspire more confidence, as I have some experience and people ask me more questions, etcetera, but I don't feel ready yet to start my own research group, to look for my own projects.'

All research participants clearly see a PhD as a point of departure to develop a research-oriented career, and not as a destination. Still, they do not mindlessly embrace an identity as 'early-career' or 'young' researchers. Alma is critical towards the notion of ECR and doctoral student:

'[...] it is an oxymoron to say that doctoral students are students because a person who is doing a doctorate is advancing in their career, but they are already experts in something and what they are doing is consolidating experience or expertise, as they say, they are not leaders in their field, but they are experts already.'

For João, introduced above, being young as a researcher is rather characterised by eagerness that has not been overshadowed by experience:

'I think I still have the spirit of a young researcher, I still have the will, the enthusiasm of a young researcher. I think maybe it's a bit like that. But – and from the point of view of experience – I consider myself experienced; I consider myself confident in different issues.'

5. CONCLUSIONS

This report has analysed the narratives of ECRs living in or coming from LAC in order to explore their experiences, personal decisions and career aspirations. In looking at the interplay between the constraints they face to develop their careers and the strategies they use to navigate the research systems in which they work, this analysis offers a nuanced perspective on the agentive capacities of young researchers and the socio-structural factors that shape their careers.

The lack of resources for scientific development is the most critical issue identified by our interviewees. They described how the decrease in research funding, deficient and insufficient research infrastructure, job precarity and financial insecurity constitute the main obstacles in their

career development. As mentioned above, there is a body of empirical evidence showing that there are gains in research spending in most of the world, except in Latin America and Central Asia (UNESCO 2021).

Research intensity has gradually increased in most LAC countries, but its quality is being compromised by chronic underfunding. This issue reflects the disinterest of governments and decision-makers in the region in fostering and investing in the development of robust scientific and higher education systems.

Underfunded research systems, job precarity, financial insecurity and deficient infrastructure have various consequences for ECRs. Competition for insufficient resources and research positions means that many ECRs spend extended periods of time without permanent or continuous employment prospects, as well as working non-remunerated overtime. Scholarly research requires motivation and long-term commitment, not only from researchers but also from governments, funding agencies, and research and higher education institutions. Apart from funding issues, our research participants pointed at other constraints such as bureaucratic procedures, clientelism and patronage, productivism in science, and the tension between career and life goals. Although these constraints are framed by most of our interviewees as circumstances that need to be endured, several interviewees described a series of strategies that allow them to cope with these problems, some of which are enumerated below.

One key strategy is networking. ECRs cultivate social relationships within and beyond the institutions in which they work that allow them to increase their opportunities, access and exchange information and secure financial resources. While these more or less institutionalised relationships help them to cope with and sometimes overcome obstacles, our research participants also highlighted the importance of moving countries, sectors and institutions to pursue alternative paths in their careers. Therefore, different forms of mobility, along with networking, constitute crucial strategies in the career trajectories of ECRs in LAC. However, it is unknown how international, inter-sectoral and organisational mobilities relate to each other. Although the current literature tends to emphasise international mobility, we need to step away from this 'international exceptionalism' to understand how inter-sectoral, organisational and international mobilities shape each other. Furthermore, examining the nexus between networking and these forms of mobility would greatly benefit from further analysis in subsequent phases of GloSYS LAC.

The strategic use of language among ECRs in the LAC region constitutes a practice that resonates with those of ECRs in other world regions (Anderson 2013). This is particularly reflected among young researchers publishing in journals in English from peripheral and semi-peripheral scientific

systems (Petric 2014). Among our interviewees there is a recognition and acceptance that English is the main language of science. However, most of the ECRs manifested that they adapt the language used to the target audience, purpose of the publication and the impact it may have in their career development. As anywhere else, publications constitute a form of currency: '*the more, the better*', and while sometimes their contributions to local, national and regional issues are published in Spanish or Portuguese, they try to publish as much as possible in international English-medium journals as it is a more valuable currency for their academic career progression.

A comparative approach to the ways in which ECRs use English for advancing their careers, communicating with peers or disseminating research outcomes is a promising research area that requires further investigation. It might be relevant for future studies to dissect the national/international binary that currently frames most studies on academic publishing. Instead of taking this binary for granted, these new studies could look at the strategies that ECRs use for publishing in international English-medium and non-English-medium journals, and the ways in which new publishing options (such as Open Science practices) impact their careers. Similarly, looking at the dynamic use of different languages at conferences and the pervasive use of digital technologies to exchange information among researchers located in different places of the world could greatly benefit the understanding of the internationalisation of scientific activities as trans-local processes.

The interviews that we have conducted with ECRs in LAC reveal important facets of the interplay between constraints and strategies, and how these are used to build research-oriented careers. In analysing ECRs, it is important to constantly remind ourselves that the notion of 'early-career researcher', 'young scholar' and 'young scientist' refers to professional categories, and not to actual people. A remedy to a thinking habit that overlooks people's lives is to consider how their personal circumstances intersect with their career trajectories. This report has sought to contribute to this perspective by bringing personal dimensions of ECRs in LAC to the analysis of the contexts in which they live and work.

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This report has analysed the most prominent themes that emerged from the interviews we conducted with ECRs from LAC. As an exploratory phase dedicated to identifying the critical points that intervene in ECRs' careers, this first step of GloSYS LAC is a reference for developing a large-scale survey. Previous GloSYS studies conducted mixed-methods research in Asia and Africa. While their surveys have similar objectives, their themes, questions and length differ to a certain extent. The quantitative phase of GloSYS LAC must strike a balance between establishing a dialogue with previous GloSYS studies – with their overarching objectives and research foci – and the issues that have a particular relevance in LAC. Thus, this report and the documentation of the first phase of GloSYS LAC constitute relevant instruments to produce an adequate survey. There are several points that could assist the survey design for GloSYS LAC:

1. It is crucial to reconsider the length of the survey to ensure the successful completion by respondents. The survey must be tested to ensure that it is completed in a reasonable amount of time.

2. This reconsideration can have two aspects: reducing the number of questions and consolidating the questions that have a similar content and structure.

3. There must be a clear sequence of themes and questions in a way that the responses do not require merging. This preparation is an extra-effort that can make descriptive and multivariate analyses easier.

4. Matt Keane, former GYA Research Assistant working on GloSYS Africa, indicated that the GloSYS Africa survey was completed in somewhere between 30 minutes and 1 hour. It would be ideal to reduce this time, so that the GloSYS LAC survey is designed to be responded in about 20 to 30 minutes on average. The reason behind this simplification and reduction of length is to ensure a satisfactory response rate.

5. It is important to consider the themes in this report to revise the survey's content. The use of English as a second language; networking strategies; the overlapping of inter-sectoral, institutional, disciplinary, international and regional mobilities; issues of clientelism or tension between career and life goals are some of the themes that could be considered in this new survey design.

As part of the research design of GloSYS LAC, we suggest to conduct explanatory interviews with senior academics and administrators, as well as ECRs based in the focal countries. The aim of this third phase is to further inquire about institutional perspectives on the themes that emerged from the previous steps. This set of interviews can also be conducted online in the first language of the research participants, using purposive sampling and talking to people working in a wide range of

academic disciplines. The use of timelines can be particularly advantageous during these interviews, since the temporal dimension was often alluded to during the first set of interviews and it would have been helpful to also capture the progression of ECRs' career trajectories. Unfortunately, we did not use timelines in that phase. A final step consolidating and integrating different types of data is crucial to arrive at a robust understanding of the social contexts in which ECRs in LAC develop their careers. This fourth step can elaborate on the agentive capacity of young researchers and the socio-structural factors that affect them.

APPENDIX 2: DESCRIPTION OF THE INTERVIEWEES

This qualitative study involved 31 interviews with ECRs living in or coming from the six focal countries (only one interviewee was born outside these countries). We conducted 5 interviews in the cases of Argentina, Brazil, Colombia, Cuba and Panama, and 6 in Guatemala. Fourteen of them were women and seventeen men. The average age of the interviewees was 37 years at the moment of data collection (May to July 2021), ranging from 32 to 45 years. 32,3 % of the interviewees currently lived outside their country of origin in LAC, Europe or North America. 35,5 % of the interviewees have one or more children. From the interviewees who have children, 54,5% have one child, 27,3% two children, and 18,2% more than two children. 74,2 % of the interviewees belonged to a discipline in the field of STEMM sciences, 22,6 % to Social Sciences and 3,2 % to Humanities.
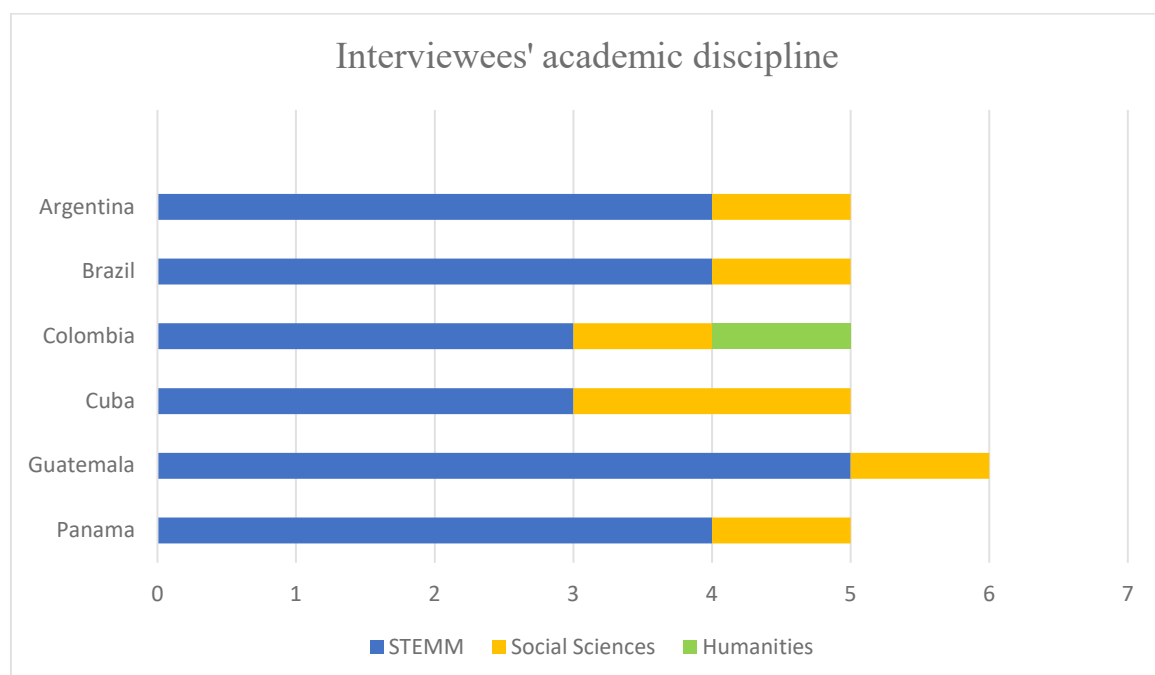

Figure 2: Interviewees' academic discipline

The majority of the interviewees (87,1 %) hold a PhD degree. Two are still doing their doctorates, and two others have not started a PhD yet.
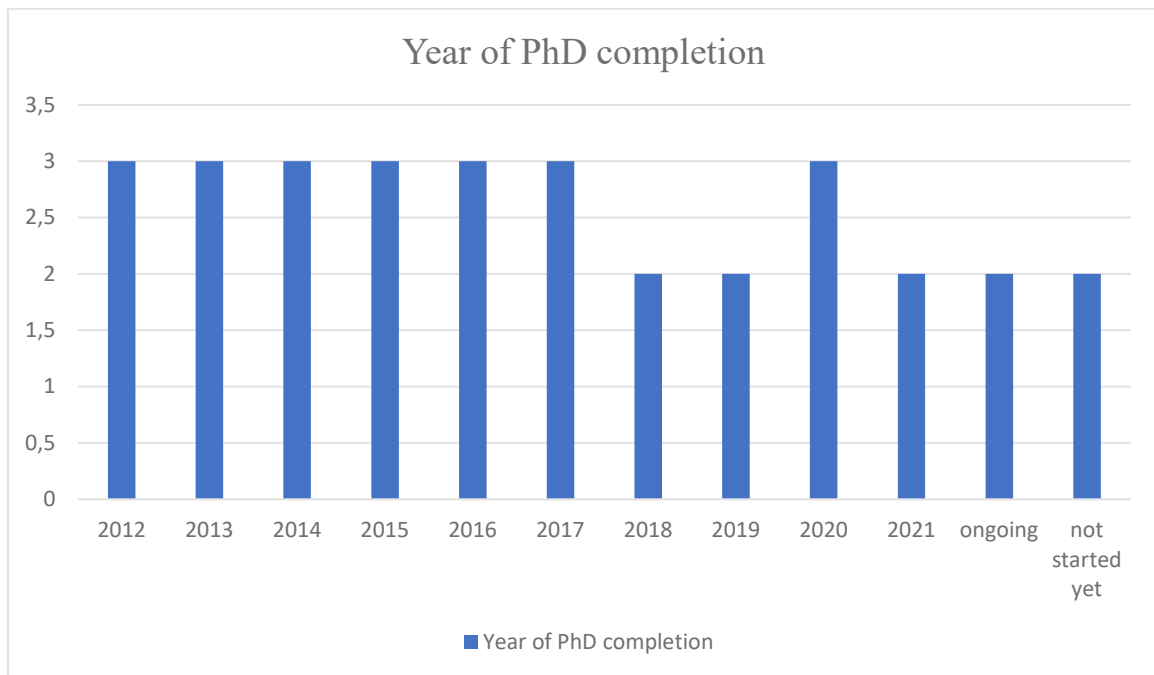

Figure 3: Year of PhD completion

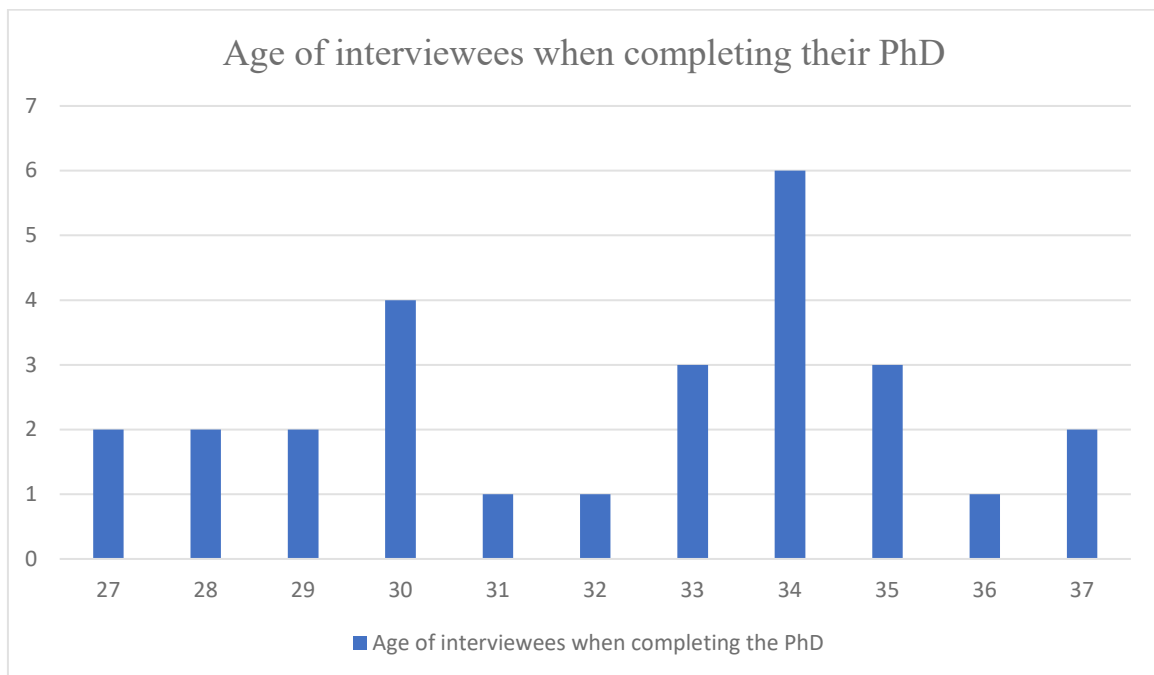Those who have a PhD have completed their doctorate on average at the age of 32,2.

Figure 4: Age of interviewees when completing their PhD

58,6% of the interviewees have obtained their PhD outside their home country, either in LAC, Europe, North America or Asia.
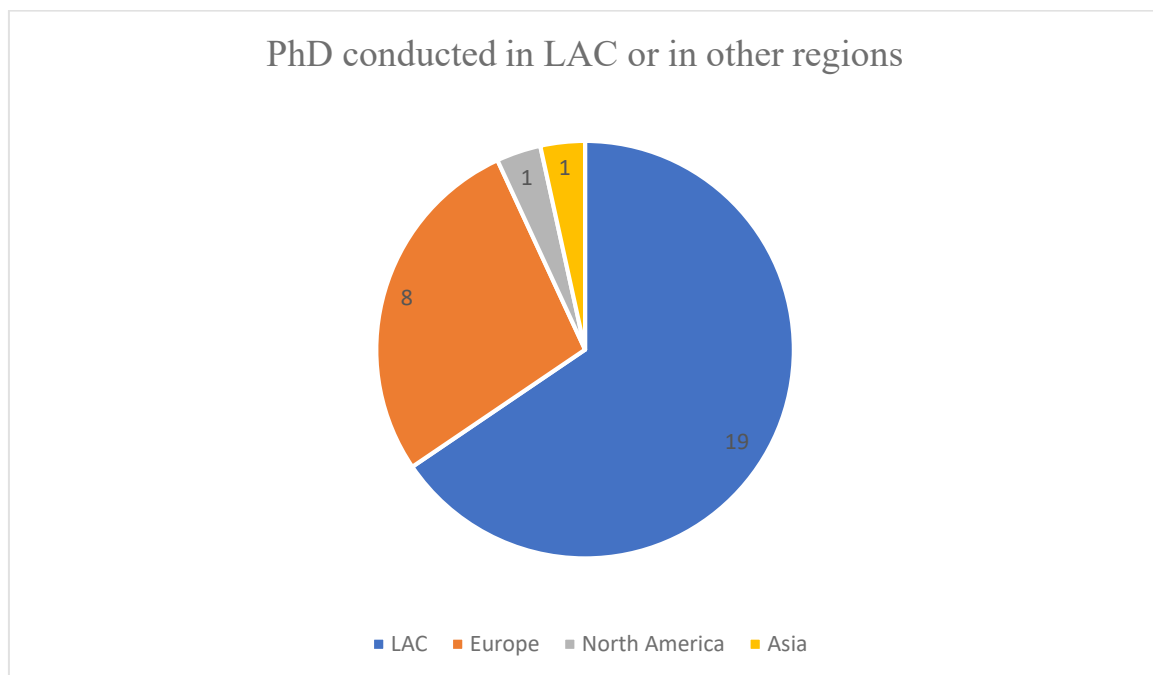

Figure 5: PhD conducted in LAC or in other regions

While many of the interviewees considered themselves early-career researchers, their responses were often nuanced, highlighting that they were not physically young, yet in the process of constructing their expertise in their fields. The table below shows how ambiguous many of the responses were:
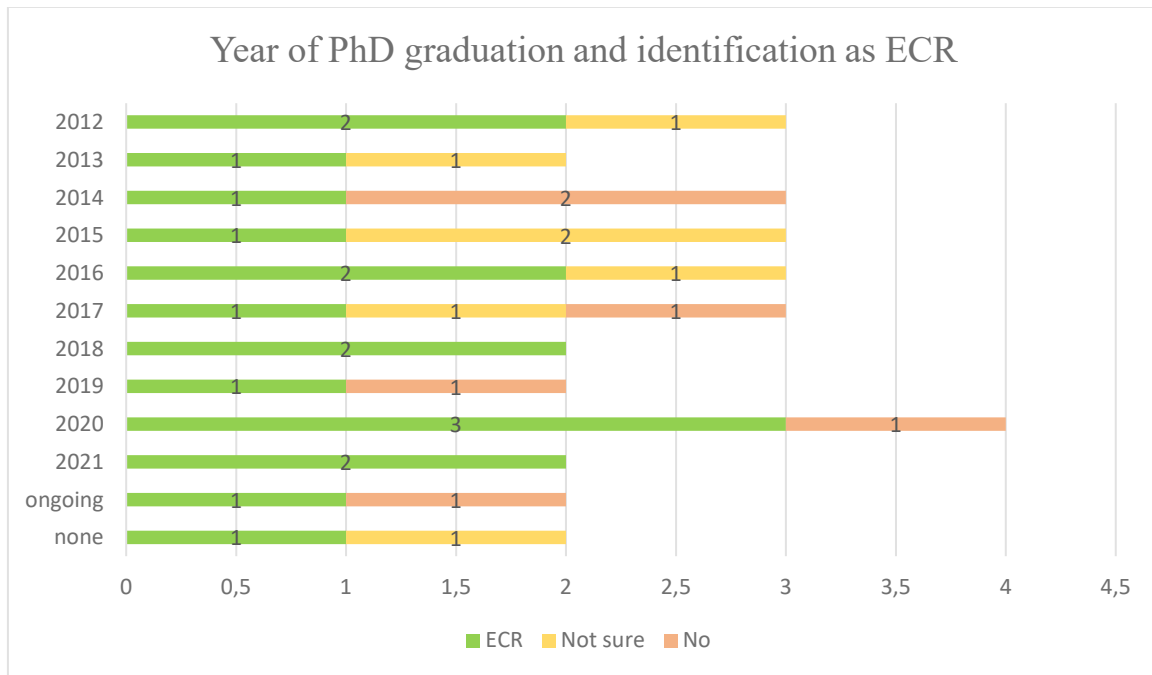
Figure 6: Year of PhD graduation and identification as ECR

While younger interviewees identified more easily with the category of early-career researcher, many did so with caution, emphasising that they were neither young, nor inexperienced.
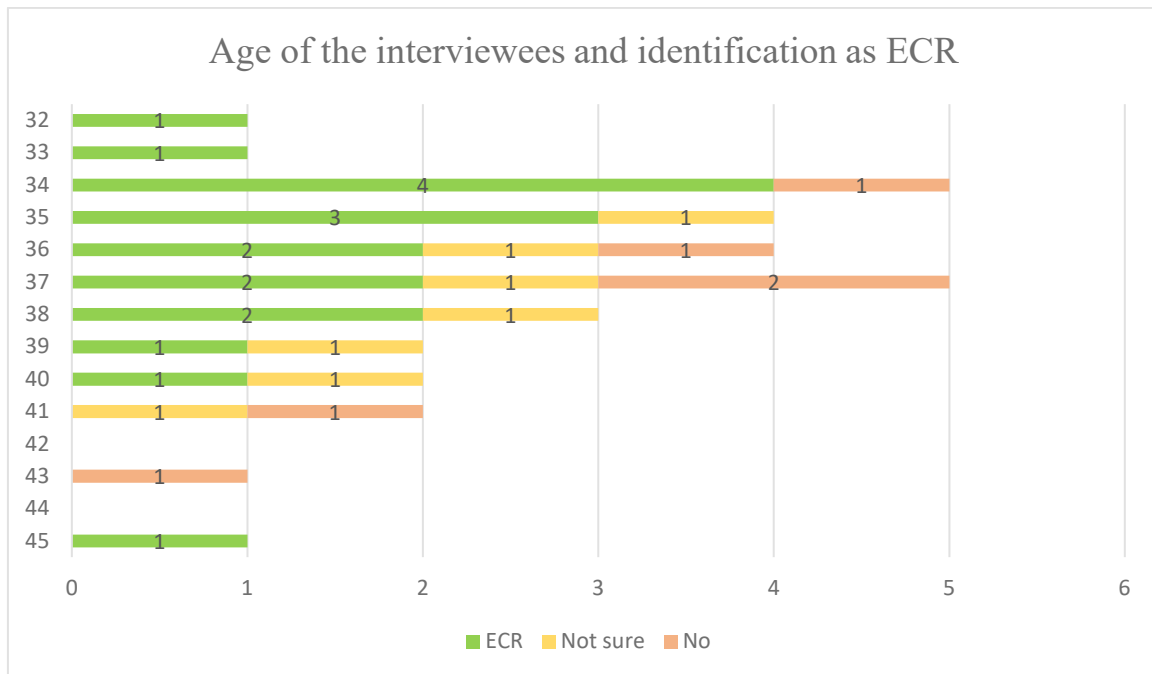

Figure 7: Age of the interviewees and identification as ECR