ISCTE IUL
REPOSITÓRIO
INSTITUTO UNIVERSITÁRIO DE LISBOA

# Repositório ISCTE-IUL

Deposited in *Repositório ISCTE-IUL*:
2025-07-24

Deposited version:
Accepted Version

Peer-review status of attached file:
Peer-reviewed

Citation for published item:
Cairns, D. (2025). Researchers in Portugal: The brain drain, circulation and digital nomadism nexus. International Migration. 63 (4)

Further information on publisher's website:
10.1111/imig.70063

Publisher's copyright statement:
This is the peer reviewed version of the following article: Cairns, D. (2025). Researchers in Portugal: The brain drain, circulation and digital nomadism nexus. International Migration. 63 (4), which has been published in final form at https://dx.doi.org/10.1111/imig.70063. This article may be used for non-commercial purposes in accordance with the Publisher's Terms and Conditions for self-archiving.

Use policy

Creative Commons CC BY 4.0
The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a link is made to the metadata record in the Repository
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Serviços de Informação e Documentação, Instituto Universitário de Lisboa (ISCTE-IUL)
Av. das Forças Armadas, Edifício II, 1649-026 Lisboa Portugal
Phone: +(351) 217 903 024 | e-mail: administrador.repositorio@iscte-iul.pt
https://repositorio.iscte-iul.pt

# Researchers in Portugal: The Brain Drain, Circulation and Digital Nomadism Nexus

## AUTHOR(S) AND AFFILIATION

<removed due to blinding>

## ACKNOWLEDGEMENTS

<removed due to blinding>

**Abstract:** Researchers are often associated with migration and forms of geographical movement that include mobility facilitated by digital technology. This article explores experiences from across this spatial nexus in Portugal, using evidence from 48 interviews with researchers conducted in 2022 and 2023. At a conceptual level, the discussion takes into account the salience of the ideas of "brain drain" and "brain circulation" alongside emerging signs of "digital nomadism". The evidence suggests that migration has been important to certain interviewees in the past, particularly in the formative years of their careers, mostly in the sense of "brain circulation" rather than "brain drain", with indications that people who started their research careers more recently are engaging in hybrid working modes, living in one place while employed at a university in another, interpreted as a pragmatic form of digital technology-enabled nomadism.

**Keywords:** Brain Circulation; Brain Drain; Digital Nomadism; Migration; Portugal; Researchers

## INTRODUCTION

Like many knowledge workers, people employed in universities as researchers have strong associations with different forms of migration and mobility (Ackers, 2005: Morano-Foadi, 2005). Reasons for moving may vary, but broadening the geographical scope of professional experience can open up access to new opportunities and generate gains for societies, depending on whether or not people return to the sending society (Baláz et al., 2004). More recently, digital technology has enabled additional forms of exchange to emerge, including digital nomadism, implying that researchers' migrations and mobility might change over time, as new possibilities arise.

In this article I engages with this issue, focusing on one specific national context, Portugal. Using interview evidence from researchers, the aim is to look at how geographical circulation has been used in their careers, including migratory movement, circular visits to other countries and spatially-hybrid working. In regard to the scope of the material, interviewees range from people with decades of post-PhD experience to those recently taking-up a first postdoctoral position, in addition to mid-career stage researchers who moved to Portugal from other countries and Portuguese nationals who returned to the country after spending time abroad.

This evidence is taken from a study that aimed to better appreciate the mobility dimension of the profession, also engaging with relevant policy debates,[1] engaging with researchers at different levels of seniority from a wide range of scientific disciplines, enabling a transversal view of the spatial dimension of research careers to emerge. Given this scope, the article is able to look at the impact of different migration and mobility experiences, with an emphasis on contrasts and commonalities between people who started their academic careers at different times, contextualized as a nexus of different spatial activities.

## RESEARCHERS AND MIGRATION

Acknowledging diversity in spatial movement as it pertains to researchers suggests theoretical alignment with the idea of migration and mobility as a "nexus" or "continuum" (Piccoli et al., 2024). This can be involve categorizing spatial actions in terms of durations, destinations and distances, but there is also the impact of these actions to consider in terms of value to individual career development, as well as the manner in which these activities are mediated by broader social, economic and political considerations.

In relation to this nexus, various conceptual paradigms have been developed relating to highly skilled individuals, most notably, "brain drain" and "brain circulation." Suffice to say, the former has its origins in concerns about an "emigration of scientists" that arose in the 1950s from the United Kingdom to the United States, interpreted as a "parasitic" phenomenon (Balmer et al., 2009: 339-340, 246). The fear was that high value migrants would move their "skills from one country to another, contributing to international inequalities (Docquier & Rapoport, 2012: 2-3), via lost public finance and welfare contributions (Bhagwati & Hamada, 1974; Ette & Witte, 2021; Daumann & Klöcker, 2024). Since this time, the meaning of the term has expanded, applied various forms of highly skilled outward migration (Docquier & Marfouk, 2006; Galan & Agasisti, 2014), and the international movement of students and recent graduates (see, e.g., Cerdeira et al., 2016).

As a more elastic term, "brain circulation" can be interpreted as relating to a cross-fertilisation of talent among the highly skilled, specifically scientists, acknowledging the potential benefit of future financial benefits for the sending society country after individuals' return. At a more systematic level, the phenomenon has been discussed in terms of advantages relating to

income and taxation differentials, as well as the enhancement of individuals' human capital, especially their competencies and skills, extending to obtaining a competitive advantage in the labour market (Tung, 2008; see also DeVortez & Ma, 2002; Saxenian, 2006), including "connectionist" practices (Cañibano & Woolley, 2015). Brain circulation is hence not simply a case of economic maximization but also a reflection of a desire to become more employable in the "home" country on return via a "triangular human talent flow" (Tung, 2008: 298). An important implication is that while "brain circulation" is seen as temporary, "brain drain" can involve the permanent loss of people who are not readily replaceable. In consequence, policies, especially at European level, aspire to replace "brain drain" with circulatory movement (see, e.g., Directorate-General for Research & Innovation, 2023).

A further conceptual point of reference relates to use of digital technology and current debate on "digital nomadism" (Cook, 2023; Sciuva, 2025). Some aspects of digitalisation in the profession are familiar to the point of banality and pass without consideration of their "migratory" connotations: keeping in touch with colleagues from different locations via email, using online platforms in designing and implementing projects, remote supervision of students and evaluation of funding proposals. Other aspects relate more specifically to using technology to reduce or replace corporeal travel, thus intersecting with environmental concerns. Perhaps the most prominent example is remote working, prevalent among researchers even before being popularised during the COVID-19 pandemic. More exceptionally, people can be formally employed in one place while residing in another, maximizing leisure opportunities and minimizing financial costs through an imaginative form of geoarbitrage (Makimoto & Manners, 1997; Reichenberger, 1998; Thompson, 2019, 2021; Holleran, 2022).

All these issues have a bearing on the dynamics of researcher mobility and migration, workers who may engage in one or more of these practices during their careers, including over-lapping or nested spatial experiences; for example, being mobile within a migration episode. The following discussion makes reference to these practices as parts of a spatial nexus, relating to researchers at different points in their careers, changing as new possibilities emerge and become widespread. However, in addition to noting the role of spending time abroad in fostering professional development, negative aspects are acknowledged. For example, using digitally-enabled forms of nomadism to cope with rising living costs in the country's main urban centres (Reichenberger, 2018; Hermann & Paris, 2020; Malet Calvo, 2022). The use of the "home office" (Sánchez-Vergara et al., 2023) might then be interpreted as economic pragmatism rather than liberation from the workplace, particularly for people who Portugal unaware of the challenges (Buhr, 2023).

## RESEARCH CAREERS IN PORTUGAL

Internal dynamics can help define the parameters of a career, with researchers bounded by the availability of opportunities that affect their ability to stay in a particular country. At a more general level, spending time abroad as an incoming or outgoing migrant can possess what might be described as a certain amount of "epistemological value" (Oliveira et al., 2023), an issue relatable to the idea of mobility as a contributor to the building of skills and capacities that helps define the attractiveness of different spatial practices. Looking at its utility to the development of research careers in Portugal, in the past, ambitious individuals might have felt it necessary to move abroad, but subsequently, more prospects have emerged closer to home, particularly following a period of expansion in the mid-1990s associated with the pioneering work of then Science Minister Mariano

Gago and the availability of EU structural funds (Entradas, 2015). Less promising has been the integration of neoliberal management principles into Portuguese universities, shifting decision-making powers from academics to administrators, alongside continued concerns regarding exclusionary practices related to academic inbreeding (Tavares et al., 2015). Therefore, despite findings from a study by Cardoso et al. (2018) suggesting that academic careers in Portugal remain attractive, workplaces are not necessarily welcoming for new entrants from home or abroad, meaning that a strong, if somewhat convoluted, imperative for outward mobility remains.

This imperative can be exercised within many global regions, including the European nexus, with member states adhering to principles of free movement being important sites of exchange. As the evidence presented in the second half of the article suggests, spending time in another European country has been popular for Portuguese scholars since the country joined the EU in 1986, helping reify intra-EU "brain circulation." Nevertheless, such movement can become constrained by circumstances, with developments such as Brexit problematizing a previously popular destination, complicating life for incoming researchers from the UK and Portuguese diaspora academics who have remained in the UK or wish to move there (Elo et al., 2023).

In seeking to better appreciate the spatial dimension of research careers, contextual factors do not explain everything. Not everyone is willing to move due to issues expressed in terms of human "stickiness" (Emmanuel et al., 2019). People may actively refuse to move abroad or return due to their emotional connections to present place of residence, as well as the extent of their ability to exercise agency. In simpler terms, factors such as family connections and community engagement help keep people in place, mitigating against both brain drain and circulation, but perhaps making digitally-based forms of exchange appear more attractive. These considerations account for the focus of the research to be discussed on a heterogeneous range of spatial practices,

including moves that involve corporeal travel and other practices that favour staying closer to home.

## THE STUDY

Although many recent works have focused on micro-level trends in researchers' migration and mobility, looking at different mobility experiences in quantitative terms (see, e.g., Fu et al., 2025), this article is focused on a micro level exploration grounded in qualitative evidence, specifically, interviews with individuals based at 28 university-based research units in Portugal. To be eligibility for inclusion in the study, people had to be employed as a researcher at their university after having completed a PhD, and, in regard to the cases used in this article, with substantial migration or mobility experience, having moved to Portugal or spending time abroad followed by return. Table 1 provides an overview of these individuals, with details of gender, scientific field, region in which the research unit is based. Also included for the purposes of organising this discussion is an indication of seniority, with number of years since completion of PhD used to distinguish three levels: senior researcher (over 15 years post-PhD), mid-career researcher (between 10 and 15 years) and junior researcher (less than ten years).[2] Pseudonyms are used in the text to protect interviewees' anonymity, with other identifying information also removed.

< Insert Table 1 here>

Fieldwork was conducted between October 2022 and September 2023. Research units were identified out of a document prepared by the most prominent state funding agency in Portugal, the Foundation for Science and Technology (FCT), its *Atlas of Research Units* (2022), which divides

centres into six categories: natural sciences, engineering and technological sciences, medical and health sciences, agricultural sciences, social sciences and humanities. At a minimum of four units were included in the study from each of these six areas from the FCT Atlas, selected according to a maximum diversity principle, related to the eminence of the unit, including the size of its workforce and its geographical location.

Interview questions covered issues that related to researchers' careers, including migration and mobility, but for this article, I focus only on this dimension, given the remit of this journal. Interviews were semi-structured, with the structured part of the discussion relating to motivations for pursuing a research career. Given the eclectic nature of migration and mobility experiences – no two people followed the same pathway – this material was not subject to computer assisted analysis due to the high level of diversity and need for human understanding. Instead, the transcripts were manually grouped according to the three levels of seniority previously noted, and the most prominent themes selected for inclusion in the discussion of results. I should however note that even if an accurate account of the interviewees' experiences, this evidence is not representative of the broader population of researchers in Portugal, and should not be mis-interpreted as such.

Having identified suitable sites for the research, the interviewee selection process itself was straightforward. In each institution, the unit director or equivalent was interviewed. Independently of these interviews, personal invitations were sent to researchers at junior and mid-career levels within the unit, with one-to-one meetings subsequently arranged with people who responded positively, at a time and date of their choosing, and in suitably private locations. Their participation was entirely voluntary, with no input from unit directors in the selection process. Everyone who participated in the study was provided with details of the project, its funding and consent

procedure. After securing consent, the interviews were conducted in Portuguese or English according to the interviewee's preference, recorded, then later transcribed, translated and analysed by the author. While a total of 100 interviews were completed, in the discussion that follows, only people with substantial migration experience are included to reflect the focus of this article, amounting to 48 cases.

## RESULTS

The discussion of results starts with the eight senior researchers in the group of 48 interviewees, all of whom had over 15 years of experience since completing their PhDs, including migration with positive impacts on career development, followed by discussion of mid-career and junior levels.

### Senior researchers' migrations

This group of senior interviewees included people who moved to Portugal from abroad for quite unambiguous reasons, such as escaping challenging social and political circumstances. A fascinating account was provided by Luís, now a senior professor at a university in the north of Portugal, who arrived in the country at an early point in his career following a military coup in his native country:

> I wanted to do biology, but in [native country] there was no real opportunity to do so. […] I applied to medical school but the problem was of course, now, there was a coup d'état. […] Basically, they [the military] closed the university down.

Luís was then driven by the ambition to start an academic career rather than the desire to be a migrant researcher, realising that this would not be possible at home, linking professional ambitions with societal circumstances. Since this time, Luís has been extremely successful in Portugal, suggesting that he made a good decision, and while he has not migrated again, he did enjoy a short stint working in the US, as well as six months teaching in his native country.

Other experienced researchers left Portugal at an early stage in their careers and subsequently returning. This was the case with Carlos, an engineer who moved to the UK due to the lack of opportunities in the years after Portugal's transition to democracy in 1974:

> When I started, it was just after the revolution in Portugal […] and we had no PhD courses in Portugal. […] I went to [the UK], because I got a position at [name of university]. I was lucky, because I got to work with someone who won the Nobel Prize […] and when I came back to Portugal, I did my PhD here.

As was the case with Luís, social and political context had a bearing on the formative years of Carlos' career, in his case, the Portuguese revolution of 1974. His solution was to move to the UK where he was able to gain a professional foothold and accumulate experience, then use these advantages on return to Portugal in 1979.

One other example I want to cite relates to Ricardo, with over 25 years' experience of working as researcher in the humanities, including time spent in the US at a prestigious university at an early point in his career. This was pivotal to establishing himself in Portugal after his return:

> When I arrived here fresh from my American education, I didn't have a job waiting for me, but I applied for what there was here. […] When I got back to Lisbon there was a competition for [a position] and I had quite a strong curriculum at the time. So, I was successful.

Ricardo mentioned one other important mobility experience that happened before this point in in time, at a conference in Madrid, that was instrumental in igniting his enthusiasm, illustrating how even a relatively short visit can have a huge impact:

> It was at an international conference that I heard a number of papers, but the two that impressed me the most were one by [name of presenter] of [name of university] and another by [name of presenter], who at that time was at [name of university in US] and I was attracted to that kind of discourse, […] the clear methodology, the transparent arguments, the comprehensive view of things allowing for different perspectives. And then I realised, "Oh, if this is [name of research field], I could do it and I would be happy with it." Because before that, I really didn't plan to become a professional in [name of research field].

Evaluating these accounts, all three cases demonstrate the importance of time abroad at a formative point in a career, with knowledge, skills and inspiration put to good use later on in Portugal. This suggests codification as "brain circulation" rather than "brain drain," with all the other cases in the group of senior interviewees confirming this impression. None of the accounts gathered suggest that "brain drain" processes took place, with a negative impact on Portugal although this may reflect a research design that did not engage with people who left the country

and did not return. More to the point, the evidence demonstrates the value of circulatory migration to individuals and their research institutions, implying that the practice has been virtuous to Portugal in the recent past, and the "productivity pay-off" (Fernández-Zubieta et al. 2015) appears to be the career itself. People may have left, but they returned, and brought with them valuable skills and contacts put to good use in Portuguese universities.

**Mid-career circulation**

This part of the discussion of results broadens discussion of the "brain circulation" theme through taking into account reflections from 27 interviewees at mid-career level, defined as between ten and fifteen years of post-PhD experience, all of whom had moved to Portugal from other countries or returned after spending time abroad at foreign universities.

In regard to their career development, practically all of those who had moved to Portugal benefitted from postdoctoral level project funding, mostly fellowships from the national science foundation, FCT, and more exceptionally, project funds from the European Commission. Their careers were also marked by an issue discussed in previous publications, that relates to the challenge of piecing together a career out of a succession of grants and fellowships instead of having a tenured position (Author, xxxx). Suffice to say, they have constructed their careers one piece at a time via a succession of employment episodes in Portugal, often preceded undergraduate and postgraduate study, or postdoctoral work, in a range of different countries, often taking advantage of free movement in Europe (Favell, 2008). Such movement also tends to be driven by academic ambition. Unlike Luís or Carlos, there were no cases at mid-career level of people moving because of political circumstances or economic hardship. The emphasis was on finding

better or at least different opportunities abroad, albeit taking into account issues such as eligibility requirements and the perceived fairness of recruitment practices.

In regard to how this process happens, the interviewees' accounts confirm the reliance on support from national governments, especially FCT. As previously noted, its calls at postdoctoral level have tended to be fairly open in regard to the national backgrounds of applicants, enabling people to come to Portugal even when not fully conversant in the local language. There is also a feeling that the country suffers less from political interference that people see as skewing the awarding of funding awards towards favoured candidates elsewhere. This was the view of humanities researcher, Carl, who moved to Portugal from Germany:

> I graduated with honours and the best exam results, which surprised me, but I still didn't get funding in Germany. That's the classic situation for postdocs. I mean, they have this system in Germany that is tied to political parties, which is crazy, like, and it's really hard to get funding if you're not socially active and stuff like that.

It should also be noted that there are also examples of people moving to Portugal due to the attractiveness of a particular university or having prior connections with a particular academic, especially people able to provide assistance with applications. This was the case with Trevor, who moved to Portugal from the UK:

> Through a contact of my PhD supervisor [in the UK], I applied for and was offered a postdoctoral position at [Portuguese university]. [Then] I successfully applied for a five-year position as an assistant researcher, funded through [name of research unit]. I have

remained at there ever since, apart from a six-month period during which I was employed by [another research unit in Portugal].

Given that he has managed to remain continuously employed as a researcher in Portugal for almost fifteen years, Trevor can be seen as a beneficiary of the openness of the FCT postdoctoral fellowship programme. Another attraction of this specific initiative, which ran from the late 1990s until 2016, was the ability of candidates to define their own research programme. This appealed Marijana, now working as a humanities researcher, who appreciated the academic freedom on offer in Portugal:

> I was born in Belgrade, ex-Yugoslavia. I finished my studies there, pre-Bologna, which is which was like, five plus years. Then I did my Master's thesis also in Belgrade, because I wanted to go beyond the borders of my own discipline and to do more things connected with [research topic]. And then I did my PhD at [Dutch university] which means that I broadened even more my academic fields institutionally. And then I did my postdoc in [Portuguese university].

From this point, Marijana was able to secure a second postdoctoral position in Portugal at her research unit, which she was engaged in at the time of the interview, providing another example of overseas talent benefiting from the international accessibility of FCT funding, extending to people from outside the EU.

In regard to Portuguese researchers who moved abroad then returned, their migrations tended to take place in the early stages of careers or while still studying. This was the case for Marta, now working at a social sciences research unit, who completed her studies in Germany:

> I went to Germany to finish my PhD, which was one of the best things that ever happened to me. But honestly, it happened because my PhD supervisor at the time in Portugal had moved to Germany. And most of his team also moved, so we moved with him. So, it was actually like he went to Germany and then we went along because there we would have more opportunities and funding, and our supervisor present.

Although this move to Germany might be seen as somewhat involuntary, Marta indicates that it was a positive experience, broadening her expertise and introducing her to topics she was able to develop further on return to Portugal, something put to good use in her current job as researcher in a large-scale European Commission funded project.

Marta's case represents success arising from having once studied in Germany. However, for other Portuguese researchers, things did not always work out as planned. Sometimes this was due to better opportunities emerging at home while abroad. For example, José works at a research unit in the natural sciences. As he explains, "I went to work in Brazil. To another institute, for a year. I didn't stay there because I won a FCT postdoc scholarship to return." Isabel, who works at medical research unit in the north of Portugal, curtailed a move to Luxembourg for personal reasons, although she was more successful with an earlier visit to the UK:

> Yes, I was in Luxembourg for a postdoc. [Before then] I had to move. […] I needed to get the scholarship from an American organisation, which was focused on [name of specialism]. I was lucky enough to get one of those because […] I didn't have enough of the criteria, or CV or experience, to get a scholarship from FCT at that time. So, it was really good. Then I went to [name of UK university] and then I came back again. [Next], I applied to Luxembourg, in order to get that scholarship, and I stayed there, but I didn't stay long because of personal issues. I was married at the time. He was living here. I was living there.

What are often referred to as "family reasons" explain why other Portuguese interviewees limited the amount of time they spent abroad for postgraduate study and postdoctoral work. For instance, early in his career, João went to The Netherlands and the Czech Republic, knowing this would be for a fixed period:

> My first postdoc was in The Netherlands, it really seemed like a good opportunity. I enjoyed it but at the same time, there were a few things in Dutch science that I didn't appreciate so much. […] Then there was this opportunity in the Czech Republic. With friendly people, and I thought, ok, I will earn a lot less money but I'll have more freedom there. I'll keep building my CV and keep learning some things, so I went there. And then this opportunity came up in Portugal and I thought, "Ok, it's time to stabilise, to go back home, be closer to family" and so on. "My parents are getting older, my aunts are getting older, and my nieces are growing-up". You have lots of reasons to come back. But it was

deliberate […] not stay in The Netherlands. I could have stayed in the Czech Republic. But I thought, yes, there's a good opportunity back home.

There would then seem to be limits in regard to how long stays abroad can be sustained in some cases, with family life entering the equation as people move into middle age, closing down many possibilities. In the case of João, this led to a compression of migration into the career-building phase, along with the understanding that skills and expertise acquired abroad were to be used on return to Portugal.

These accounts provided further demonstrations of how "brain circulation" happened researchers coming to work in Portugal and others who went abroad then returned, laden with new skills and competencies, with experiences being generally, but not always, positive. It is also notable that people took advantage of the relative openness of European borders during the early years of the twenty-first century, and in some cases, funding opportunities provided by the European institutions. Comparing the mid-career researchers cited here with their senior peers, there is perhaps less unambiguous success but still no suggestion that any of these people were part of a "brain drain" phenomenon. Their experiences were however more diffuse in terms of destinations, durations and the impact on career development, suggesting a broadening of the nexus of possibilities, but one that did not necessarily mean that a successful and stable career would be the outcome.

**Junior researchers' migration and mobility**

Discussion of the interviews closes with exploration of 13 junior level researchers' accounts, providing an opportunity to look at more recent experiences, and how the international dimension

of research work is being transformed by the use of digital technology. At this point I should note another limitation of the study, unavoidable in this instance due to the fact that people had fewer opportunities to travel in recent years due to the COVID-19 pandemic, an event that was still prominent in the minds of these researchers when the fieldwork was being conducted, and explains why there are fewer than might be expected cases of mobile researchers in this sub-group of interviewees.

What is clear is that even though remote working became commonplace during the pandemic in many professions, it was already a familiar aspect of research work, to the point of not constituting an innovation (see also Vertovec, 1999). More exceptionally, there are signs that practices such as living in one place while being employed at an institution located hundreds or thousands of kilometres away, perhaps not even in the same country or continent within the researcher population, reported by a number of research unit directors who used this arrangement, in exceptional circumstances, to address specific labour shortages in their institutions that could not be met by people from the domestic labour market. Among the junior interviewees, a small number indicated that they had engaged in nomadic practices enabled by digital technology, not out of choice or as a means of address a specific labour deficit in their institution but rather for reasons of financial expediency, including one clear case of intra-regional circulation nested within migration. This involved combining remote working with periodic long-distance commuting, using digital technology to keep in touch with colleagues while working at home.

This arrangement is explained by Paulo, a recent arrival in Portugal, having completed a PhD in humanities the previous year. He already has quite a complex migration history, including time spent in one European country studying for his doctorate and a Master's degree in another. While he points out that living in Portugal has some advantages related to what he terms the

"human environment", especially its arts, cuisine and local culture, living costs are much higher and salaries lower compared to his previous places of residence:

> With our salaries, I cannot personally afford a flat in [city of university]. It is almost impossible to find a flat in [name of city] for two people and a dog. So, we live in [name of small town]. And it takes one hour or two hours from where I live to get to the university. That's why I don't go to the university very often.

In consequence, Paulo has adopted a strategy of travelling to his university once a week, the rest of the time working remotely, hosting online seminars while at home. This is not a state of affairs he views as satisfactory, with his housing prospects further limited by not having a permanent contract with his institution. Furthermore, he talked at length about bureaucratic problems that arose during the initial months of his stay, including issues related to equivalence of qualifications requirements, a relatively recent introduction by FCT for foreign candidates that Paulo sees a means of deterring researchers from coming to Portugal. Given these complications, Paulo does not see himself staying in the country after the expiry of his present employment contract in 2024.

Looking at other scenarios, cost-of-living issues also appear to be affecting Portuguese nationals. For example, Ana is a researcher in the health field who in the past combined academic activities with working as a nurse and teaching. This meant splitting her time between four separate cities in the north and south of the country, none of which were geographically close to each other. Her main reason for doing so was financial. As she explains:

> I have to work a lot to have enough money to survive, to take care of the children and family. […] I'm already teaching at [name of university], and here in [university in home city], I have a position as invited teacher.

In practice, she has been living in one place, teaching part-time in universities in two other Portuguese cities, and during her recently completed PhD, enrolled at a university in another, in addition to her work as a nurse in her home city. However, unlike Paulo, all this teaching work has to be carried out in person, although much of her research work was conducted remotely. Not surprising, Ana is very tired and frustrated in regard to the amount of travelling required, but is nevertheless quite positive and optimistic in regard to her hopes for finding a research position in Portugal that will enable her to be less nomadic.

What these two quite different cases share is an integration of mobility-related solutions to overcome challenging issues, including the use of technology, but in configurations that differ from forms of digital nomadism that integrate employment with leisure (Aroles et al., 2020). It is also notable that neither interviewee is content with their situation. Paulo wants to leave Portugal once his current contract ends and Ana focused on finding a research position rooted in one place so she does not have to travel. Both want to avoid a spatial splitting of home and work that technology has enabled, implying that this form of digitalisation is retrogressive.

The age of "brain circulation" may not be at an end, but people are starting to structure their movement differently, taking into account financial imperatives as well as, or instead of, purely professional development considerations. This does not correlate well with existing views of "digital nomadism" that interpolate leisure or cite issues like tax minimization as motivations (Thompson, 2019, 2021), suggesting that research careers may be subject to different logics. It

might then be said that there are signs that digital technology in the research profession is less an enabler of the fulfilment of personal desires and more a reaction to changing, and challenging, circumstances. In simpler terms, people like Paulo and Ana are nomadic within Portugal as it is necessary, not because it became fashionable.

## CONCLUSIONS AND IMPLICATIONS

This article has sought to open-up debate on the geographical circulation of researchers, taking into account existing ideas and insights emerging from evidence. While "brain drain" and "brain circulation" are familiar ideas, if less prominently employed in studies outside economics or macro level analysis (see, e.g., Saxenian, 2005), the discussion informs understanding of these issues through looking at the contemporary Portuguese context. More specifically, the interviewees' accounts demonstrate that there has been an evolution of sorts in researchers' engagement with the mobility/migration nexus, implying that the manner in which they circulate has changed over time, as the range of possibilities expanded, then diversified via digitalization.

Rather than looking at how these practices have contributed to economic development in a specific country, the emphasis has been on the development of the interviewees' careers. In some case, mobility and migration enabled research careers to start or flourish, and diversify, or continue at times of uncertainty. While there are positive connotations, it might also be said that the process of extracting value from overseas experience became more convoluted as circulatory practices expanded in scope and popularity, while actions that resemble "digital nomadism" appear closer to the kinds of experiences associated with the spread of the gig economy rather than highly-skilled professions (Thompson, 2021). On the other hand, technology provides a means of coping with precarity in the research profession in Portugal arising from changing social and economic

circumstances, although this is far from unique to this national context and not exclusive to the research profession (Colomb & Gallent, 2022). Whether or not dissatisfaction with the quality of careers prompts an actual "brain drain" of researchers from Portugal is another matter, but as we learnt from recent arrival Paulo, at least one person has already had enough of the country and its over-heated housing market.

From a theoretically informed point of view, it is evident that a widening of the "migration-mobility nexus" (Piccoli et al., 2024) has taken place over a period of several decades in Portugal, and that different generations of researchers made different spatial choices, as this nexus expanded in relation to destinations, durations and virtual possibilities. The latter are still in their incipient stages, suggesting that the "digital nomadism" of researchers requires further investigation, opening-up an important future direction for empirical study. Current signs are that this is a marginal phenomenon, at least in terms of the number of officially recognised digital nomads taking advantage of the available visas in Portugal (Monteiro, 2023; Hari & Triandafyllidou, 2025), with studies also suggesting that some workers may struggle to make the practice sustainable (Sequera, 2025). This may be due to relatively recent problems that have interrupted many forms of corporeal circulation and artificially encouraged nomadism. As has been pointed previously in this journal, the pandemic accelerated both the possibilities and the limitations of this form of remote working, especially in relation to intersections precarity (Sanul, 2022), a situation confirmed by the researchers cited in the previous section. The suggestion is that "digital nomadism" is not for all researchers, but may nevertheless find its place in the nexus as a means of addressing specific labour requirements in specialist research units.

In regard to policy implications, the discussion of results suggests that hybrid modes of circulation might not be the right approach in regard to attracting and retaining talent in countries

like Portugal, not least due to issues such as an entrenched housing crisis (Malet Calvo, 2022). Policymakers might then be advised to focus on strengthening and solidifying researchers' working conditions in order to attract and retain talent; not only in terms of contractual situations and salaries but also interventions in the housing market to help support professionals. Such a move would also be consistent with existing policy on research careers in Portugal, including an imminent at the time of writing tenure programme for researchers. There are also broader implications for higher education in this national context, related to the ability of spatially displaced members of staff to contribute to institutions in which they are rarely physically present. This might be seen as a kind of reverse-desertification that will have most impact on the main urban centres that host most of the country's research units, namely Lisbon, Porto and Coimbra, should academics no longer be able afford to live there (see also Crevoisier et al., 2024).

## CONFLICT OF INTEREST STATEMENT

There are no conflicts of interest in relation to the issues discussed in this article.

## DATA AVAILABILITY STATEMENT

Data is not available to the public due to the personal and confidential nature of the evidence, in keeping with the terms of the ethical approval process and consent procedures with interviewees.

## ENDNOTES

1. <Details of research project blinded>

2. Use of the term 'junior researcher' reflects the official designation used in Portuguese universities for early career stage employees. Due to its official status, I have retained the term

despite the fact that the designation is unpopular with researchers who started their careers and/or finished their PhDs relatively late in life.

## REFERENCES


Ackers, L. (2005) Moving people and knowledge: Scientific mobility in the European Union. *International Migration,* 43(5), 99-131.

Aroles, J., Granter, E. & Vaujany, F. (2020) "Becoming mainstream": The professionalisation and corporatisation of digital nomadism. *New Technology, Work and Employment,* 35(1), 114-129.

Author. xxxx.

Author. xxxx.

Bhagwati, J. & Hamada, K. (1974) The brain drain, international integration of markets for professionals and unemployment: A theoretical analysis. *Journal of Development Economics*, 1(1), 19-42.

Baláz, V., Williams, A.M. & Kollár, D. (2004) Temporary versus permanent brain drain: Economic implications. *International Migration,* 42(4), 3-34.

Balmer, B., Godwin, M. & Gregory, J. (2009) The Royal Society and the "brain drain": Natural scientists meet social science. *Notes and Records of the Royal Society,* 63, 339-353.

Buhr, F. (2023) Estilos de vida móveis e suas infraestruturas: Notas sobre Lisboa. *Revista Brasileira de Sociologia*, 11(28), 98-118.

Cañibano, C. & Woolley, R. (2015) Towards a socio-economics of the brain drain and distributed human capital. *International Migration*, 53(1), 115-130.

Cardoso, S., Carvalho, T. & Videira, P. (2019) Is it still worth working in academia? The views from Portuguese academics. *Higher Education Policy*, 32, 663-679.

Cerdeira, L., Machado-Taylor, M. de L., Cabrito, B., Patrocínio, T., Brites, R., Gomes, R., Teixeira Lopes, J., Vaz, H., Peixoto, P., Magalhães, D., Silva, S. & Ganga, R. (2016) Brain drain and the disenchantment of being a higher education student in Portugal. *Journal of Higher Education Policy and Management*, 38(1), 68-77.

Colomb, C. & Gallent, N. (2022) Post-COVID-19 mobilities and the housing crisis in European urban and rural destinations. Policy challenges and research agenda. *Planning Practice & Research*, 37(5), 624–641.

Cook, D. (2023) What is a digital nomad? Definition and taxonomy in the era of mainstream remote work. *World Leisure Journal,* 65(2), 256-275.

Crevoisier, O, Arrighi, J.-T. & Mueller, S. (2024) A European Desert? The Territorial Economics and Politics of Emigration in Crisis Regions. Available from: https://nccr-onthemove.ch/projects/a-european-desert-the-territorial-economics-and-politics-of-emigration-in-crisis-regions/

Directorate-General for Research and Innovation. (2023) *From brain drain to brain circulation: The PSF supports national policy-makers in designing major R&I reforms*. Luxembourg: Publications Office of the European Union.

Docquier, F. & Rapoport, H. (2012) Globalization, brain drain, and development. *Journal of Economic Literature,* 50(3), 681-730.

Docquier, F.& Marfouk, A. (2006) International migration by educational attainment (1990-2000). In C. Ozden & M. Schiff (Eds). *International Migration, Remittances and Development*, pp. 151-200. New York: Palgrave Macmillan.

DeVortez, D.J. & Ma, J. (2002) Triangular human capital flows between sending, entrepot and the rest of the world regions. *Canadian Studies in Population,* 29(1), 53-69.

Elo, M., Silva, S.C. & Vlačić, B. (2023) The role of satisfaction in labor diaspora dynamics: An analysis of BREXIT effects. *Thunderbird International Business Review*, 65(1), 143-159.

Emmanuel, N.D., Elo, M. & Piekkari, R. (2019) Human stickiness as a counterforce to brain drain: Purpose-driven behaviour among Tanzanian medical doctors and implications for policy. *Journal of International Business Policy*, 2(4), 314-332

Entradas, M. (2015) Envolvimento societal pelos centros de I e D. In: M. L. Rodrigues & M. Heitor (Eds.), *40 Anos de Políticas de Ciência e de Ensino Superior,* pp. 503-518. Lisboa: Almedina.

Ette, A. & Witte, N. (2021) Brain drain or brain circulation? Economic and non-economic factors driving the international migration of German citizens. In: M. Erlinghagen, A. Ette, N.F. Schneider and N. Witte (Eds) *The Global Lives of German Migrants*, pp. 65-83. Cham: Springer.

Favell, A. (2008) *Eurostars and Eurocities: Free Movement and Mobility in an Integrating Europe*. Malden, MA: Blackwell.

Fernández-Zubieta, A., Geuna, A. & Lawson, C. (2015) Productivity pay-offs from academic mobility: Should I stay or should I go? *Industrial and Corporate Change*, 25(1), 91-114.

Fu, Y.C., Vásquez, J.J.M., Macasaet, B.T., Hou, A.Y.C. & Powell, J.J.W. (2025) Game of brains: Examining researcher brain gain and brain drain and research university policy. *Higher Education Policy*, 37(2), 237-258.

Galan, A. & Agasisti, T. (2014) From Brain drain to knowledge transfer: Experiences of the Italian academe. *International Migration*, 52(4), 60-63.

Hari, K.C. & Triandafyllidou, A. (2025) Digital nomadism and the emergence of digital nomad visas: What policy objectives do states aim to achieve? *International Migration Review*, https://doi.org/10.1177/01979183241306367.

Hermann, I. & Paris, C.M. (2020) Digital nomadism: The nexus of remote working and travel mobility. *Information Technology and Tourism,* 22, 329-334.

Holleran, M. (2022) Pandemics and geoarbitrage: Digital nomadism before and after COVID-19. *City*, 26(5/6), 831-847.

Daumann, F. & Klöcker, J.A. (2024) International migration and the transfer system: A method to limit brain drain and excessive use of the welfare state. *Economics Bulletin*, 44(4), 1464-1468.

Makimoto, T. & Manners, D. (1997) *Digital Nomad*. Chichester: Wiley.

Malet Calvo, D. (2022) A wonderful but uncertain time: Youth transitions of Erasmus students and Lisbon's housing crisis. In: Cairns, D. (eds) *The Palgrave Handbook of Youth Mobility and Educational Migration*, pp. 453-464. Cham: Palgrave Macmillan.

Monteiro, R. (2023) Portugal emitiu "cerca de 200 vistos" para nómadas digitais em dois meses e meio. *Público*. Available from: https://www.publico.pt/2023/01/18/p3/noticia/portugal-emitiu-cerca-200-vistos-nomadas-digitais-dois-meses-meio-2035496.

Morano-Foadi, S. (2005) Scientific mobility, career progression, and excellence in the European Research Area. *International Migration,* 43(5), 133-162.

Oliveira, T., Nada, C. & Magalhães, A. (2023) Academic migration and epistemological value: Exploring the experience of migrant academics in Portugal. *Education Sciences*, 13(7), 720.

Piccoli, L., Gianni, M., Ruedin, D., Achermann, C., Dahinden, J., Hoffmeyer-Zlotnik, P., Nedelcu, M. & Zittoun, T. (2024) What is the nexus between migration and mobility? A framework to understand the interplay between different ideal types of human movement. *Sociology*, 58(5), 1019-1037.

Reichenberger, I. (2018) Digital nomads: A quest for holistic freedom in work and leisure. *Annals of Leisure Research,* 21(3), 364-380.

Sánchez-Vergara, J.I., Orel, M. & Capdevila, I. (2023) "Home office is the here and now." Digital nomad visa systems and remote work-focused leisure policies. *World Leisure Journal,* 65(2), 236-255.

Sanul, G. (2022) Digital nomadism and global mobility: Challenges and suggestions for international migration policies. *International Migration*, 60(6), 272-275.

Saxenian, A. (2005) From brain drain to brain circulation: Transnational communities and regional upgrading in India and China. *Studies in Comparative International Development*, 40, 35-61.

Saxenian, A. (2006) *The New Argonauts: Regional Advantage in a Global Economy*. Cambridge: Harvard University Press.

Sequera, J. (2025) Struggling with the digital nomad: Transnational teleworkers as the new "creative class" in the urban marketplace? *International Journal of Urban and Regional Research*, 49(1), 204-213.

Sciuva, E. (2025) Geographies of digital nomadism: A research agenda. *Geography Compass*, 19(2), e70016.

Tavares, O., Cardoso, S., Carvalho, T., Sousa, S. B. & Santiago, R. (2015) Academic inbreeding in the Portuguese academia. *Higher Education*, 69(6), 991-1006.

Thompson, B.Y. (2019) The digital nomad lifestyle: (Remote) work/leisure balance, privilege, and constructed community. *International Journal of the Sociology of Leisure,* 2(1-2), 27-42.

Thompson, B.Y. (2021) *Digital Nomads Living on the Margins: Remote-Working Laptop Entrepreneurs in the Gig Economy*. Emerald Publishing Limited.

Tung, R.L. (2008) Brain circulation, diaspora, and international competitiveness. *European Management Journal*, 26(5), 298-304.

Vertovec, S. (1999) Conceiving and researching transnationalism. *Ethnic and Racial Studies*, 22(2), 447-462.

**Table 1**. Interviewees, with gender, scientific field, region of research unit and experience level

| Name | Gender | Field | Region | Experience |
|---|---|---|---|---|
| António | Male | Medicine | North | Senior |
| Carlos | Male | Engineering | Centre | Senior |
| Fernando | Male | Engineering | North | Senior |
| Luís | Male | Medicine | Porto | Senior |
| Maria | Female | Agriculture | Centre | Senior |
| Pedro | Male | Medicine | North | Senior |
| Nuno | Male | Natural Sciences | Centre | Senior |
| Ricardo | Male | Humanities | Centre | Senior |
| Amélia | Female | Medicine | North | Mid |
| Carl | Male | Humanities | Centre | Mid |
| Cecília | Female | Medicine | North | Mid |
| Cristina | Female | Medicine | Centre | Mid |
| Daniel | Male | Humanities | Centre | Mid |
| Daniela | Female | Natural Sciences | Centre | Mid |
| Diana | Female | Social Science | Centre | Mid |
| Elsa | Female | Humanities | Centre | Mid |
| Emmanuel | Male | Engineering | Centre | Mid |
| Filipa | Female | Natural Science | Centre | Mid |
| Graça | Female | Engineering | North | Mid |
| Isabel | Male | Natural Sciences | Centre | Mid |
| João | Male | Engineering | North | Mid |

| | | | | |
|---|---|---|---|---|
| José | Male | Natural Sciences | Centre | Mid |
| Leonor | Female | Humanities | Centre | Mid |
| Marcelo | Male | Natural Sciences | Centre | Mid |
| Marijana | Female | Humanities | Centre | Mid |
| Marta | Female | Social Sciences | Centre | Mid |
| Mateus | Male | Social Sciences | North | Mid |
| Rafael | Male | Humanities | Centre | Mid |
| Renata | Female | Humanities | Centre | Mid |
| Rodrigo | Male | Engineering | North | Mid |
| Rosana | Female | Natural Sciences | Centre | Mid |
| Tiago | Male | Humanities | Centre | Mid |
| Trevor | Male | Engineering | North | Mid |
| Violeta | Female | Humanities | Centre | Mid |
| Vitor | Male | Humanities | Centre | Mid |
| Ana | Female | Medicine | South | Junior |
| Cláudia | Female | Medicine | North | Junior |
| Diogo | Female | Agriculture | North | Junior |
| Filipe | Male | Agriculture | North | Junior |
| Franz | Male | Humanities | Centre | Junior |
| Hélder | Male | Social Sciences | Centre | Junior |
| Joana | Female | Agriculture | North | Junior |
| João | Male | Natural Sciences | Centre | Junior |
| Juliana | Female | Social Sciences | North | Junior |

| | | | | |
|---|---|---|---|---|
| Mariana | Female | Humanities | North | Junior |
| Miguel | Male | Natural Sciences | Centre | Junior |
| Paulo | Male | Humanities | Centre | Junior |
| Valter | Male | Humanities | Centre | Junior |