STUDY OF THE PROFILE OF THE BRAZILIAN SCIENTIFIC DIASPORA IN FRANCE

ESTUDO DO PERFIL DA DIÁSPORA CIENTÍFICA BRASILEIRA NA FRANÇA

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Abstract. On the occasion of the celebration of the 40 years of the Association of Brazilian Researchers and Students in France (APEB-FR) in 2024, a statistical analysis about the profile of its members over a 10-year period was conducted, and the results are presented and discussed in this work. Additionally, these characteristics are compared with those extracted from two specific data collections on the Brazilian scientific diaspora in France: one conducted in 1993 and obtained from this association's historical archives, and another at the end of 2024, on the occasion of the Annual Meeting of the Brazilian Scientific Diaspora in France, organized by the Brazilian Embassy in France. The results show, overall and across time, a predominance of female researchers between the ages of 35 and 50 who come to France to pursue their doctorates in the humanities, linguistics, literature, and social arts. The results show an interesting temporal variation, where the demographic profile appears to be changing in recent years. There is a trend toward gender balance and an increase in the percentages of both young students and researchers and professionals coming to France to work in the field of education, science, technology and innovation (postdoctoral fellows, researchers, and professors). Regarding the field of knowledge, the data fr'om the 1990s differ from the most recent, where at that time there was a more significant participation from the exact and earth sciences and engineering fields, while more recently there has been an increase in the interdisciplinary nature of the work of these Brazilians.

Keywords: Scientific Diaspora, France and Brazil, Statistics, APEB-FR.

Resumo. Por ocasião da celebração dos 40 anos da Associação de Pesquisadores e Estudantes Brasileiros na França (APEB-FR) em 2024, foi realizada uma análise estatística sobre o perfil de seus membros ao longo de um período de 10 anos, cujos resultados são apresentados e discutidos neste trabalho. Adicionalmente, essas características são comparadas com aquelas extraídas de duas coletas de dados específicas sobre a diáspora científica brasileira na França: uma realizada em 1993, obtida nos arquivos históricos da Associação, e outra no final de 2024, por ocasião do Encontro Anual da Diáspora Científica Brasileira na França, organizado pela Embaixada do Brasil na França. Os resultados mostram, de forma geral e ao longo do tempo, uma predominância de pesquisadoras entre 35 e 50 anos que chegam à França para realizar o doutorado nas áreas de humanidades, linguística, literatura e artes sociais. Os dados revelam ainda uma interessante variação temporal, indicando que o perfil demográfico parece estar mudando nos últimos anos. Observa-se uma tendência ao equilíbrio de gênero e um aumento nos percentuais tanto de estudantes jovens quanto de pesquisadores e profissionais que vêm à França para atuar nas áreas de educação, ciência, tecnologia e inovação (pós-doutorandos, pesquisadores e professores). No que diz respeito às áreas do conhecimento, os dados da década de 1990 diferem dos mais recentes: naquele período, havia uma participação mais significativa das ciências exatas e da terra e das engenharias, enquanto mais recentemente verifica-se um aumento da interdisciplinaridade no trabalho desses brasileiros.

Palavras-chave: Diáspora científica; França e Brasil; Estatísticas; APEB-FR.

1 Introduction

The emigration of highly qualified Brazilian professionals, particularly within the realms of science, technology, and academia, is a growing and complex phenomenon driven by various factors. This movement, while challenging, is increasingly pursued by individuals seeking better work conditions, research funding, political stability, and academic opportunities abroad. Recent studies, such as those by Carneiro et al. (2022, 2024a, 2024b), identify key motivations for this scientific diaspora, including postdoctoral opportunities, foreign scholarships, and dissatisfaction with domestic science policies.

This migratory trend aligns with global patterns of internationalization in education, science, technology, and innovation (ESTI). However, the traditional notion of "brain drain" has been increasingly contested in favor of concepts such as "brain circulation" and "brain networking", which emphasize the potential of diaspora scientists to contribute transnationally to the advancement of their home countries. Research has shown that internationally mobile researchers often achieve higher scientific impact, as measured by citation metrics (Sugimoto et al., 2017), thus contributing to a more efficient and significant research practice. Policy discourse has thus shifted toward establishing transnational scientific networks rather than enforcing physical return. This paradigm underscores the strategic value of leveraging the diaspora's expertise and connections rather than viewing emigration as a loss. Therefore, it is clear that assessing and monitoring the phenomenon of the scientific diaspora is crucial for formulating strategies and public policies for this segment of society (Carneiro, 2020; Carneiro, 2024b). This allows these highly qualified individuals residing abroad to contribute to Brazilian ESTI and return, in the form of knowledge, the investment once made in them by the State. The desire to increase opportunities for collaboration and contribution to Brazilian society, already carried out by these professionals voluntarily in formal and informal collaborations with Brazilian academics and industrialists (Moura Leite, 2023), is commonly expressed when they are confronted with questions about their emigration and their relations with our country (PUB Paris, 2023-present) and should be seen as a great opportunity.

Despite some data being available through governmental channels, accurate quantification of Brazilian scientific emigration remains limited. Efforts to address this gap include surveys and data analysis of academic output and online academic profiles (e.g., LATTES CVs). Carneiro et al. (2022) surveyed over 1,200 Brazilian ESTI professionals residing in 42 countries, identifying the U.S. (40%),

UK (13%), Canada (7.9%), Germany (6.7%), and France (4.2%) as top destinations, while noting that Portugal—despite being the second highest destiny for Brazilian emigrants (10%)—plays a lesser role in hosting ESTI professionals (2%). In France specifically, Brazilian scientific diaspora organizations have a long-standing presence. The APEB-FR (Associação de Pesquisadores e Estudantes Brasileiros na França), founded in 1984, exemplifies this tradition, fostering research collaboration and academic exchange. However, a proliferation of groups with varied focuses—academic, cultural, political—has led to a fragmented landscape. Current efforts aim to consolidate these networks for more effective representation and policy engagement with Brazilian authorities.

This movement toward diaspora integration mirrors broader global trends. Numerous networks have been established in countries such as Germany (APOENA), Switzerland (Rede Brasil-Suíça), Japan (ABrJ), the UK (ABEP-UK), Italy (Diaspora Riccercatori), the U.S. (multiple PUB chapters), and others, often supported by Brazilian embassies through their SECTEC offices. The Brazilian Ministry of Foreign Affairs has acknowledged these actors in recent publications, such as the Mapping of Innovation-Promoting Environments Abroad (BRASIL, 2025). International conferences and bilateral meetings increasingly address the role of the Brazilian scientific diaspora, further emphasizing the value of transnational collaboration and cultural diversity in research.

Considering this, understanding and mapping the Brazilian scientific diaspora—particularly in key host countries such as France—is critical for informing public policy and harnessing the full potential of globally mobile professionals in advancing Brazilian ESTI.

2 Methodology

This study draws on three distinct data sources to profile Brazilian students and professionals in science, technology, and innovation (ESTI) in France. The results of this research were presented during the IV Meeting of the Brazilian ESTI Diaspora in France (2024), co-organized by APEB-FR and the Brazilian Embassy in Paris, as part of the association's 40th-anniversary celebrations.

The first dataset stems from a historical document analysis of APEB-FR's digitized archives. Specifically, issue no. 12 of the Nouvelles APEB newsletter (1993) included a database compiled by the association's board, aggregating 1,512 entries based on CAPES and CNPq scholarship records and direct member contact. For this study, only data concerning academic discipline and study modality were used, due to significant changes in funding structures over time. The second dataset comprises membership data collected via an online form between 2014 and 2024 (445 entries). Variables selected for analysis include age, gender, field of expertise, and motivation for residing in France. The third dataset consists of 96 registration forms from participants in the 2024 diaspora event mentioned before, with limited overlap (23%) with APEB-FR members. Although additional demographic and professional information was collected—such as Brazilian region of origin, current residence in France, and future plans to return—only selected variables relevant to the study's objectives were analyzed: gender, age, field of knowledge and academic interest in France.

3 Results

The analysis of Brazilian students and professionals in ESTI residing in France, based on the three datasets (identified as APEB-1993, APEB-10years, and EVENT-2024), reveals evolving demographic, academic, and disciplinary profiles. From Figure 1, that show the gender distribution for APEB-10years and EVENT2024, it is possible to see a predominance of women in the Brazilian scientific diaspora in France: 61% among APEB-FR members (2014–2024) and 65.5% among 2024 event participants (Figure 1a–b). However, the historical data indicate a trend toward gender parity in recent years (Figure 1c).

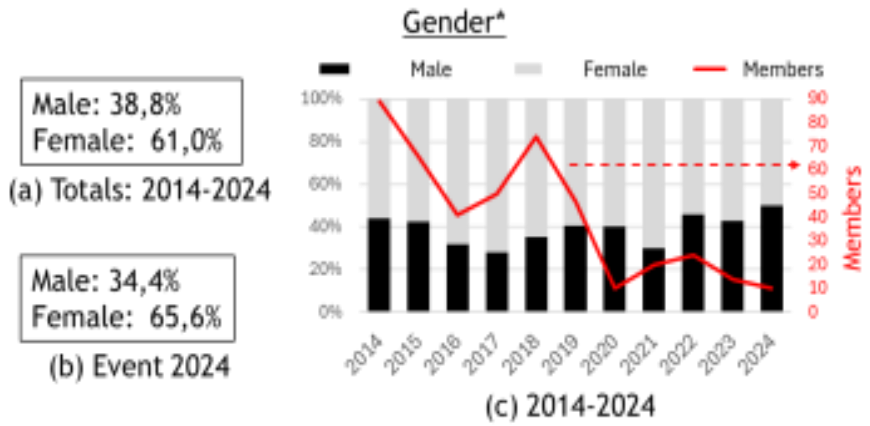

Figure 1. Distribution of Brazilian ESTI students and professionals in France by gender, obtained: (a) from the sum of the APEB-10years data and (b) from the EVENT2024. (c) is the temporal distribution (bars) of the APEB-10years dataset and also contains the evolution of the number of APEB-FR members (line). The gender scale is read on the left axis and that of members on the right axis. *Options related to other genders accounted for less than 0.5% of the results and are not presented.

Age distribution, shown in Figure 2, reveals a majority of individuals between 35 and 50 years old, although there is a recent increase in younger participants (25–35 years) among new members and a notable presence of those under 25 at EVENT2024 dataset (Figure 2a–c). These shifts suggest generational renewal within the diaspora and potentially reduced engagement with traditional associations like APEB-FR.

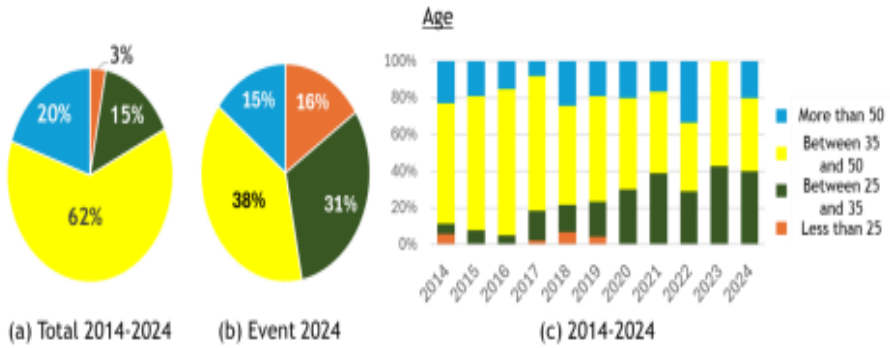

Figure 2. Age distribution of Brazilian ESTI students and professionals in France obtained: (a) with the totalization of the APEB-10years and (b) in the EVENT2024 dataset. (c) is the temporal distribution of the data presented in (a).

As noticed in Figure 3, that shown the academic interest in France, doctoral studies remain the primary academic motivation for Brazilian migration to France across all timeframes (Figure 3a–c). While undergraduate and master's levels appear marginal historically, their presence is more significant in the younger cohort attending the 2024 event. Notably, postdoctoral researchers and professionals have become increasingly represented in recent years (Figure 3d), likely influenced by worsening socio-political conditions in Brazil.

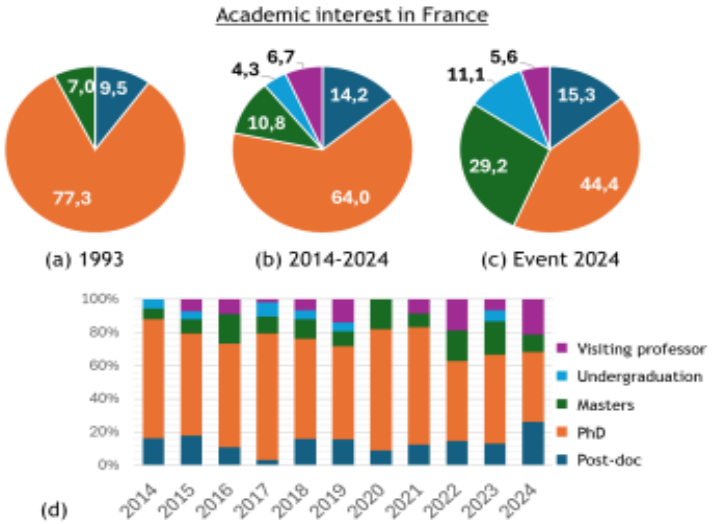

Figure 3. Academic interest of Brazilian students and professionals in ESTI in France obtained: (a) in the APEB1993 study, (b) with the totalization of the APEB-10years and (c) in the EVENT2024 dataset. (d) is the temporal distribution of the data presented in (b).

Finally, from analysis of Figure 4, it is remarkable that the disciplinary composition of the diaspora shows a dominance by the humanities, linguistics, arts, and social sciences, accounting for over 75% of APEB-FR members across the historical record (Figure 4b, 4d). A marked rise in interdisciplinary fields was observed in the EVENT2024 dataset (31.3%), reflecting broader shifts in global scientific practice (Figure 4c). While earlier data (APEB1993) show a more balanced disciplinary representation (Figure 4a), this trend has narrowed over time. The underrepresentation of STEM fields may reflect enduring perceptions of France as a destination more aligned with social sciences and humanities, with countries like the U.S., UK, and Germany perceived as more attractive for exact and technological disciplines.

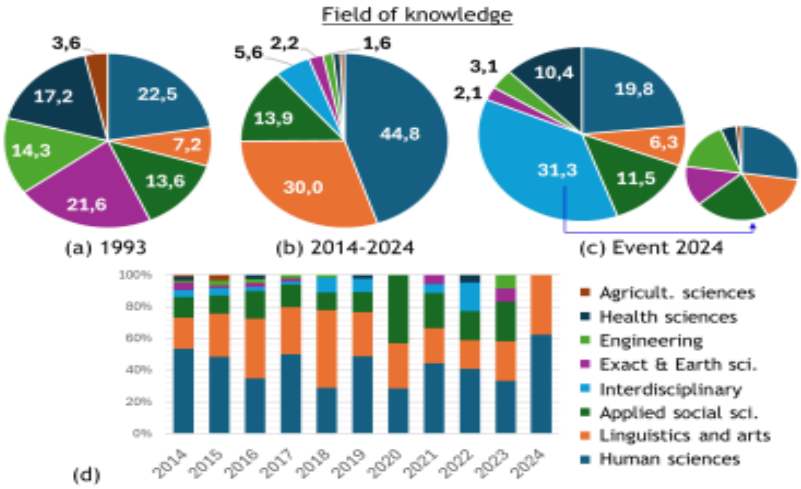

Figure 4. Distribution of Brazilian ESTI students and professionals in France by area of knowledge obtained: (a) in APEB1993, (b) with the totalization of APEB-10years data and (c) in the 2024 event. (d) is the temporal distribution of the data presented in (b).

4 Conclusions and perspectives

This study outlined the profile of Brazilian students and professionals in ESTI in France based on three independent data sets, showing that the predominant profile is women aged 35 to 50 pursuing doctorates in the humanities, linguistics, arts, and social sciences. However, temporal analysis revealed an increase in younger students and a migration of more experienced professionals focused on work, maintaining the predominance of these fields but with greater interdisciplinarity.

Several questions arise for future research, such as: (1) Why France attracts so many Brazilian women in the humanities and social sciences? (2) Why was there a decline in APEB-FR membership and what is its relation to the dispersion across other networks? (3) How to better leverage the knowledge of highly skilled Brazilians abroad? (4) What public policies could facilitate effective contributions from the scientific diaspora in the fields of education, science, technology and innovation to Brazil's development, even while abroad?

References

1. APEB-FR, 1993. "O que é o banco de dados – APEB?". **Nouvelles APEB**, 12, Paris, França, 1993.
2. _____, 2023. **"Estatuto Social da APEB-FR"**. Disponível em: http://www.apebfr.org/blog/wp content/uploads/2023/11/2023-04-17-Estatutos-APEB-FR.pdf. Access on 17/07/2025.
3. _____, 2025. **Site da APEB-FR**: https://www.apebfr.org/blog/
4. ARAÚJO, Galber Rodrigues e LIMA, Melissa Caldeira Brant de Souza, 2021. **"Mapeamento da Diáspora Brasileira de Ciência, Tecnologia e Inovação na Áustria, na Eslováquia e na Eslovênia"**. Disponível em: https://www.gov.br/empresas-e-negocios/pt-br/invest-exportbrasil/exportar/conheca-os-mercados/pesquisas-de-mercado/estudo-de-mercado.pdf/austria.pdf Access on 17/07/2025.
5. BRASIL, Embaixada do Brasil em Portugal, 2025. **"Mapeamento da Diáspora Científica Brasileira em Portugal".** Disponível em: https://drive.google.com/file/d/17wYBEDBQr5kWT8ZGEiHk_kB5cO03cAAk/view. Access on 17/07/2025.
6. _____, Ministério Das Relações Exteriores, 2024. "**Comunidades brasileiras no exterior: Ano base 2023"**. Disponível em: https://www.gov.br/mre/pt-br/assuntos/portal consular/BrasileirosnoExterior2023.pdf. Access on 17/07/2025.
7. _____, Ministério Das Relações Exteriores, 2025. **"Série de Mapeamentos de Ambientes Promotores de Inovação no Exterior"**. Disponível em https://www.gov.br/mre/pt br/assuntos/ciencia-tecnologia-e-inovacao/serie-de-mapeamentos-de-ambientes-promotores-de inovacao-no-exterior. Access on 17/07/2025.
8. BRAUN, Júlia, 2025. Artigo da BBC Brasil: **"Migração de brasileiros ultracapacitados**

cresce nos EUA em meio à alta de deportações nos últimos anos". Disponível em https://www.bbc.com/portuguese/articles/c4gpkrjjr1yo. Access on 17/07/2025.
9. CAMPUS FRANCE, 2025. **"Le programme COFECUB**". Disponível em: https://www.campusfrance.org/fr/cofecub. Access on 17/07/2025.
10. CARNEIRO, Ana Maria, 2020. "Diáspora brasileira de ciência, tecnologia e inovação: panorama, iniciativas auto-organizadas e políticas de engajamento". **Idéias**, Campinas, SP, v.11, 1-29, e020010.
11. _____, 2024a. "Diáspora científica: levantamento inédito ajuda a entender quem são e o que sentem os pesquisadores que deixaram o Brasil". **The Conversation**. Disponível em: https://theconversation.com/diaspora-cientifica-levantamento-inedito-ajuda-a-entender-quem-sao-e o-que-sentem-os-pesquisadores-que-deixaram-o-brasil-237710. Access on 09/03/2025.
12. _____, 2024b. **"Metodologia para localizar e seguir a diáspora científica: abordagem multimétodos"**. Em: 9º Encontro Brasileiro de Bibliometria e Cientometria. Brasília, Brasil.
13. CDEFI, 2025. **"Les programmes de mobilité Internationale**". Disponível em: http://www.cdefi.fr/fr/activites/les-programmes-de-mobilite-internationale. Access on 17/07/2025.
14. FRANÇA, Embaixada da França no Brasil, 2022. **"França-Brasil: A ciência como caminho para a sustentabilidade"**. Disponível em: https://br.ambafrance.org/Franca-Brasil-A-ciencia-como caminho-para-a-sustentabilidade. Access on 17/07/2025.
15. GRANJA, Cintia Denise, 2021. "O programa Ciência sem Fronteiras e a falha sistêmica no ciclo de políticas públicas". **Ensaio: aval. pol. públ. educ**. 29 (110).
16. MCMANUS, Concepta. "Mapping the Brazilian Scientific Diaspora: Migration Patterns of PhDs in Global Mobility". **bioRxiv**. Disponível em: https://doi.org/10.1101/2024.04.22.590567. Access on 17/07/2025.
17. MARQUES, Fabrício, 2017. Artigo para a Revista Pesquisa Fapesp: "**O fim do Ciência sem Fronteiras depois de R$ 13 bilhões investidos em bolsas no exterior".** Disponível em https://portal.sbpcnet.org.br/noticias/o-fim-do-ciencia-sem-fronteiras-depois-de-r-13-bilhoes investidos-em-bolsas-no-exterior. Access on 17/07/2025.
18. MOURA LEITE, Neto, 2023. Entrevista com Ana Maria Carneiro em artigo publicado no Science Arena: **"O outro lado da fuga de cérebros"**. Disponível em: https://www.sciencearena.org/entrevistas/o-outro-lado-da-fuga-de-cerebros/. Access on 17/07/2025.
19. PUB Paris, 2023-presente. Podcast do PUB Paris com uma série de entrevistas e palestras de membros da diáspora brasileira de ECT&I: **"PodPUB, o podcast do PUB**". Disponível em: https://open.spotify.com/show/6NEMJtWp00H2YSXEd7Rg11. Access on 09/03/2025.
20. SUGIMOTO, Cassidy, 2017. "Scientists have most impact when they're free to move". **Nature** 550, 29-31