

# Bibliometrics indicators in Caribbean islands : specificity of French West Indies authorship analyzed from 1989 to 2018

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## Introduction

Bibliometrics is a mathematical method used in different scientific fields to measure scientific output from the number of publications, the prestige of a journal, and citations generated after publication. For more than 30 years, national plans have been put in place to develop research within the French University Hospital Centers, including the regions of Guadeloupe and Martinique (French West Indies, FWI). These two French regions are not located geographically in Europe but in the Caribbean Sea. On these two sites, there is the creation of the respective university centers (CHU) in 1985 for the University Hospital of Guadeloupe (CHUG) and in 1986 for the CHU Martinique (CHUM). The FWIs are by their geographical position, exposed to strong climatic constraints at the origin of emerging vector diseases (Chikungunya, Dengue, ZIKA), but also of climatic phenomena such as earthquakes, cyclonic phenomena. There is therefore a need for major cooperation between the Caribbean countries to address these threats. To our knowledge, no bibliometric study has been carried out on the scientific collaboration between the various institutions located in the FWI. The objective of this study was to measure the scientific productivity and the state of collaboration between both sites of Martinique and Guadeloupe at the regional, national and international levels.

## Methods

This bibliometric study was conducted from the international database Web of Science over the period 1989 to 2018 (30 years)

Three types of bibliometric indicators were used:

- Quantitative indicators included the number of publications per five-year period to measure the scientific productivity of both sites by type of publication.
- Structural indicators : In order to more precisely study collaborations between authors, all the data identified by each PMID were extracted in Pubmed Database
- Performance indicators were: 1) the quality of publications measured by the average impact factor, and 2) the average number of citations per article over the same period

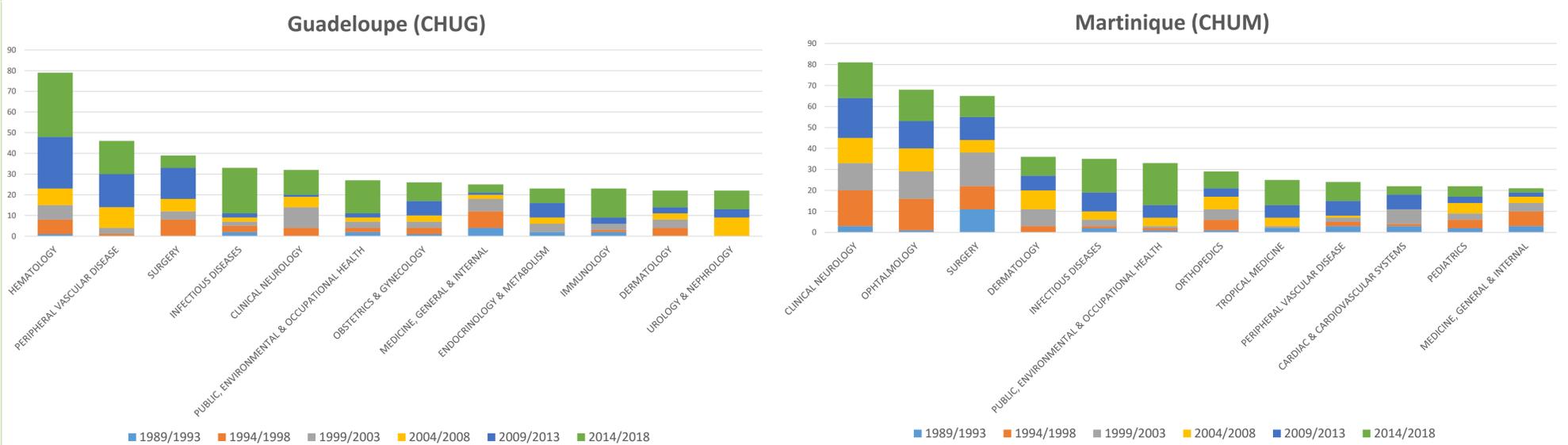


Chart 1. Distribution of articles published at the CHUs of Guadeloupe (A) and Martinique (B) by field of research between 1989 and 2018.

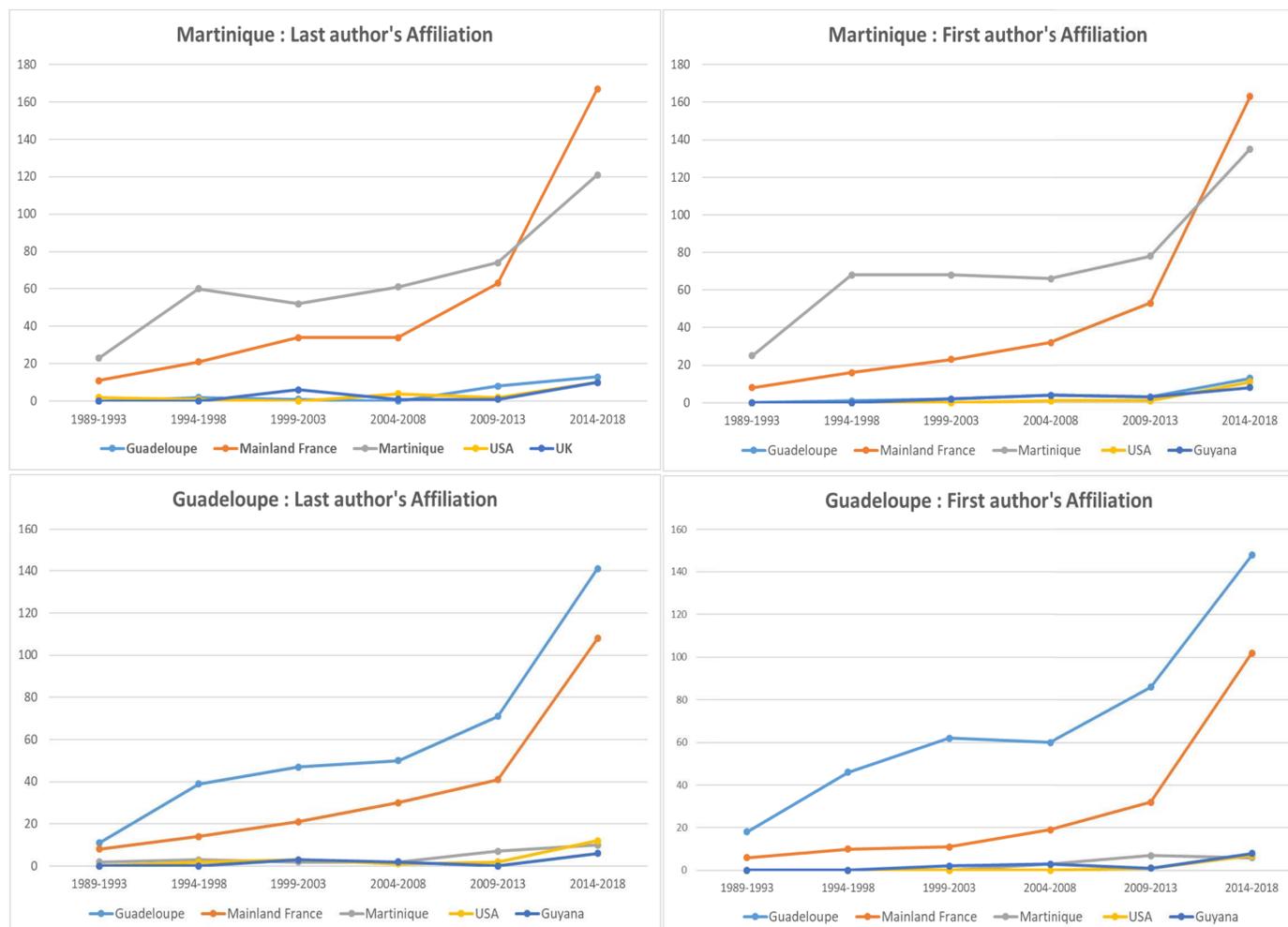


Figure 2 : Evolution of the number of articles according to the ranks of authors in Guadeloupe (A and B) and in Martinique (C and D)

## Results

Between 1989 and 2018 a total of 1522 articles were indexed : 837 for the CHUM and 685 for the CHUG. For both sites, there is an increasing number of articles published over the years with a maximum of articles on the last period studied, ie between 2014 and 2018 with 363 articles at CHUM and 292 at CHUG. For the Martinique site, the proportion of items included in the first two Quartiles (Q1, Q2) is constantly increasing from 21.4% and 10.7% over the first five years to 40.0% and 25.1% respectively. The majority of articles for both sites are included in category Q1 (35.8% for CHUM and 35.2% for CHUG). For both sites, the first and last authors of published articles are mostly from metropolitan France and either CHUG or CHUM: In Guadeloupe, the first authors represent 65.8% (420 authors) and the last 56.3% (359 authors). In Martinique, we find the same configuration, first authors represent 55.8 (440 authors) and the last 49.6% (391 authors). At the CHUM, over the last 30 years, the 3 main Research Area were CLINICAL NEUROLOGY, OPHTHALMOLOGY, SURGERY representing all 3 a proportion 28.7% of all domains grouped with a larger number of articles published in the field CLINICAL NEUROLOGY with 81 articles. At CHUG, the HEMATOLOGY research field is widely represented with 79 published articles.

## Conclusions

This is, to our knowledge, the first study conducted on the bibliometric analysis of the FWI over a period of 30 years. This quantitative and qualitative analysis of the various publications allows us to assess the evolution of scientific and medical research in both regions as well as the extent of regional and international collaborations. It highlights the insufficiency, the need to put more programs of scientific and medical cooperation between the two regions in order to cope with the growing weight of the emerging chronic diseases and disease whose prevalence is important in the Caribbean zone.

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