



Adoption and use of author identifier services: A French national survey

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Abstract: This paper studies awareness and use of author identifier services (AIDs) in the French academic community and explores needs and forms of support required for these tools, using a national questionnaire survey. ArXivID, IdHAL, ORCID, ResearcherID and Scopus Author ID were investigated. A total of 6125 people completed the questionnaire in full. The results of this survey show that discipline and age play an important role in French researchers' familiarity with AIDs. IdHAL and ORCID were by far the two best known AIDs, probably because they have been promoted by institutions in France for several years. French researchers use AIDs mainly to respond to external requests (e.g., to submit an article or a research project), while, surprisingly, few use them to 'facilitate their work'. When French researchers were asked about their needs and the form of support required for AIDs, more than 30% of them said they either required an introduction to or practical training in these tools. The results of this national survey should help stakeholders to adapt their policies and to guide and support researchers more efficiently in the use of these tools.

INTRODUCTION

The accurate identification of researchers and their scientific production is crucial for all stakeholders in global research (e.g., publishers, funders, universities, research assessors), as many actions depend on this process (e.g., promotions, obtaining funding). However, because of the increasing number of online scientific articles, finding the entire scientific production of a given author or an institution is sometimes like looking for a needle in a haystack (Jinha, 2010). The difficulties encountered in identifying researchers' scientific publications are numerous and well known: problems of homonymy, name changes, as a result of marriage for example, or the use of groups of authors (Craft, 2020; Fenner & Haak, 2014; Meadows & Haak, 2018). Changes in researchers' affiliations over time, because of mobility

and/or lack of uniformity in reporting affiliations are also well-known difficulties (Mering, 2017; Tran & Lyon, 2017).

Author identifiers (AIDs) have been shown to be able to overcome most of these difficulties by ensuring that researchers' contributions are correctly identified, easy to find and recognized (Meadows et al., 2019; Meadows & Haak, 2018). Article repository websites and preprint servers such as Research Papers in Economics (RePEc) in 1999 and ArXiv in 2005 were the first to introduce and use AIDs (Warner, 2010). In France, HAL, the French open archive, developed its own AID (IdHAL) in 2014. The Scopus Author ID in 2006 and the Web of Science ResearcherID in 2008 were developed by bibliographic databases (Elsevier and Thomson Reuters, respectively). These AIDs were created to assign a unique identification to bibliographic records in these databases, aiming to assign articles to their

authors unambiguously (Youtie et al., 2017). The main disadvantage of these identifiers is that they are linked to a database, and they therefore lack universality. To provide an AID independent from article repository sites, preprint servers and bibliographic databases, Open Researcher & Contributor ID (ORCID) was launched in 2012. ORCID is an open, international, non-profit project and community (ORCID, 2024). This digital researcher identifier has been widely promoted for its open-source, interdisciplinary and transnational approach. It is now the most widely used AID by researchers (Bello & Galindo-Rueda, 2020; Boudry & Durand-Barthez, 2020; Tran & Lyon, 2017), and seems to now be the predominant standard for author identification in academic communication (Pampel et al., 2023). ORCID is required by many services used by researchers, such as submission platforms or grant application agencies (Citrome, 2016; Gasparian et al., 2014). ORCID has also been described as being able to combat research misconduct, in particular by curbing authorship misconduct, detecting predatory journals and publishers, and tracking unwanted records in academic publishing (Xu & Hu, 2024). However, this service is not exempt from criticism: the creation of an ORCID profile is neither monitored nor controlled, allowing researchers to create multiple profiles (Wang et al., 2024), resulting in duplicates (Schnieders et al., 2022; Teixeira da Silva, 2020). It should be noted that while all these tools act as AIDs, ResearcherID and Scopus Author ID are promoted as profile systems, with specific functionality for managing citations and metrics, due to their integration in bibliographic databases. Integrated or linked to other ecosystems such as open archives, ArXivID and ORCID have been developed more around the identifier itself, while IdHAL is somewhere inbetween.

In the context of open science, it is important to investigate researchers' awareness and use of AIDs in order to assess who the users of these identifiers are, and how aware they are of these tools. The answers to these questions could help decision-makers implement incentive policies, and to decide whether or not to promote the use of these tools and/or to improve training and services. Many articles have been published on the problem of author identification and the usefulness of AIDs including ORCID (Bohannon & Doran, 2017; Haak et al., 2012; Youtie et al., 2017). Many studies have also been carried out to specifically assess the extent to which digital researcher identifiers are used by researchers (Boudry & Durand-Barthez, 2020; Fernandez-Marcial et al., 2023; Heusse & Cabanac, 2022; Mikki et al., 2015; Morgan & Eichenlaub, 2018; Porter, 2022; Schnieders et al., 2022). However few questionnaire surveys have been conducted to investigate awareness and use of AIDs (Armstrong et al., 2015; Bello & Galindo-Rueda, 2020; Macgregor et al., 2023; Meadows, 2019; Meadows et al., 2017; Tran & Lyon, 2017), even at national level. The objectives of this research project were therefore to study awareness and use of AIDs, and to explore needs and forms of support required for AIDs in the French research community, using a national questionnaire survey.

Key points

- Discipline and age play an important role in French researchers' familiarity with author identifier services (AIDs).
- French researchers use AIDs mainly to respond to external requests while few use them to 'facilitate their work'.
- The needs in terms of support for the use of AIDs are considerable: more than 30% of researchers say they need an introduction or practical training in the use of these tools.

METHODS

The data for this study was collected through a national questionnaire survey. The target populations were researchers, lecturers and university professors, engineers, doctoral students and all supporting research staff in France. It was developed on the LimeSurvey platform ('LimeSurvey GmbH') of the University of Caen Normandy, and consisted of two distinct parts, comprising 42 questions in all. The first part of the questionnaire was related to AIDs, while the second part contained questions specifically related to ORCID. This article presents the results of the first part, and the second part will be published separately later on account of the significant volume of data collected. The survey was anonymous and validated by the data protection officer of Normandy University to ensure compliance with the rules in force regarding data collection and processing. The survey was available online from 9 November 2022 to 7 February 2023; that is, for almost 3 months. The Ministry of Higher Education and Research ensured its dissemination in the French research community as soon as the survey was available online, directly to research establishments. The latter were instructed to inform their staff of the existence of this study and to encourage them to take part. Two reminders were issued in December 2022 and January 2023. It should be noted that this survey was designed to be reproducible in the future or at a different level.

Five AIDs were included in this study:

- ArXiv author identifier (ArXivID): ArXivID is the AID of the open-access repository ArXiv;
- IdHAL: IdHAL is the AID of the French national open archive HAL;
- ORCID: the ORCID platform is an international non-profit organization, the purpose of which is to create and maintain a database of distinct researcher identifiers and to provide open access to link research activities and outcomes;
- ResearcherID: ResearcherID is a Clarivate tool that creates identities for research scholars and enables them to generate research profiles, including their titles, affiliations, research interests and publication lists. This identifier is linked to the Web of Science database via an algorithm-based abstracting and indexing service;

- Scopus Author ID: Scopus Author ID is a tool run by the Elsevier Publishing Group. This algorithm-based abstracting and indexing service uses data only from journals in the Scopus database.

Apart from IdHAL, which was chosen for this study because of its local use in France, the other four AIDs were chosen because they appeared to be the most often cited and the most often discussed AIDs in the literature (e.g., Memon & Azim, 2019; Tran & Lyon, 2017; Warner, 2010).

RESULTS

Socio-demographic characteristics of the respondents

Over the 3 months when the questionnaire was available, 7987 people connected to the homepage. A total of 6125 researchers (76.7%) completed the questionnaire in full, amounting to approximately 3.2% of the national population of researchers (including research engineers and funded doctoral students) (Ministère de l'Enseignement Supérieur et de la Recherche, 2023). The socio-demographic characteristics of the respondents are presented in Table 1.

The majority of respondents to the questionnaire were affiliated to universities (53.1%), which was higher than the national

figure of 42% in 2020 (Ministère de l'Enseignement Supérieur et de la Recherche, 2023). Conversely, people affiliated to research organizations and health institutions were under-represented compared with national data: 36.8% compared with 43% and 1.3% compared with 9%, respectively. The distribution of respondents who identified themselves as belonging to Science, Technology and Medicine (STM) and Humanities and Social Sciences (HSS) disciplines was 74.2% ($n = 4544$) and 25.8% ($n = 1581$), respectively. This distribution was fairly similar to that observed at a national level, which excludes doctoral students, postdocs and supporting research staff (79% and 21%, respectively). If we exclude respondents who answered 'Other' or did not wish to answer, the percentage of female respondents was 41.9%, a figure very close to that of the percentage of women working in French public research (41%). Age data were not available to compare our sample with the national population.

Familiarity with AIDs

The first question in the survey was 'Are you familiar with the notion of author identifiers?' The respondents could choose among five levels from '0—Not familiar' to '4—Fully familiar'. Of the respondents, 59.1% ($n = 3619$) stated they were familiar or very familiar with AIDs, while 14.7% said that they were not at all familiar (Fig. 1). Respondents in the STM disciplines were generally more familiar with AIDs, than respondents in HSS. Concerning respondent age, those under 30 years old were by far the least familiar with AIDs, while those aged 31–45 were the most familiar.

Awareness and having an account with AIDs

The respondents were then asked about their awareness of the five AIDs studied and whether or not they had an account on any of these AIDs within their academic activity (Fig. 2).

ArXivID, ResearcherID and Scopus Author ID were the least known of the five AIDs proposed to respondents and they were the identifiers for which the link between awareness and use was the lowest. Furthermore, the percentage of respondents who had an account on these three AIDs was small (ranging from 13.9% to 32% respectively for ArXivID and ResearcherID). It should also be noted that for these three AIDs, a relatively small proportion of respondents had an account among those aware of these AIDs, indicating the low interest of respondents in creating an account with them (for disciplinary or other reasons). IdHAL and ORCID were by far the two best-known AIDs in the French research community. It is worth noting that, in contrast to the three other AIDs, the proportion of respondents who had an account was high among those who were aware of these two AIDs (66.9% and 80.1% respectively for IdHAL and ORCID). As shown in Fig. 3, except for IdHAL, respondents with an account on the four other AIDs proposed were over-represented in the STM group.

The respondents were also asked the following question 'Do you know or have an account on another AID? If so, please specify'. A total of 1782 respondents answered this question. The analysis of the results showed that a significant number of

TABLE 1 Socio-demographic characteristics of respondents.

Variables	Categories	Numbers (%)
Institution	Universities	3252 (53.1%)
	Research organizations (e.g., French National Centre for Scientific Research or National Institute of Health and Medical Research)	2252 (36.8%)
	Specialized higher education facilities ('Grandes écoles')	450 (7.3%)
	Health institutions (e.g., university hospitals)	81 (1.3%)
	Others	90 (1.5%)
Gender	Male	3345 (54.6%)
	Female	2410 (39.3%)
	Other	28 (0.5%)
	Prefers not to answer the question	342 (5.6%)
Age	<30 years	739 (12.1%)
	31–45 years	2058 (33.6%)
	46–55 years	1835 (30%)
	56 years and over	1408 (23%)
	Prefers not to answer the question	85 (1.4%)
Discipline	Sciences, Technology, and Medicine (STM)	4544 (74.2%)
	Humanities and Social Sciences (HSS)	1581 (25.8%)

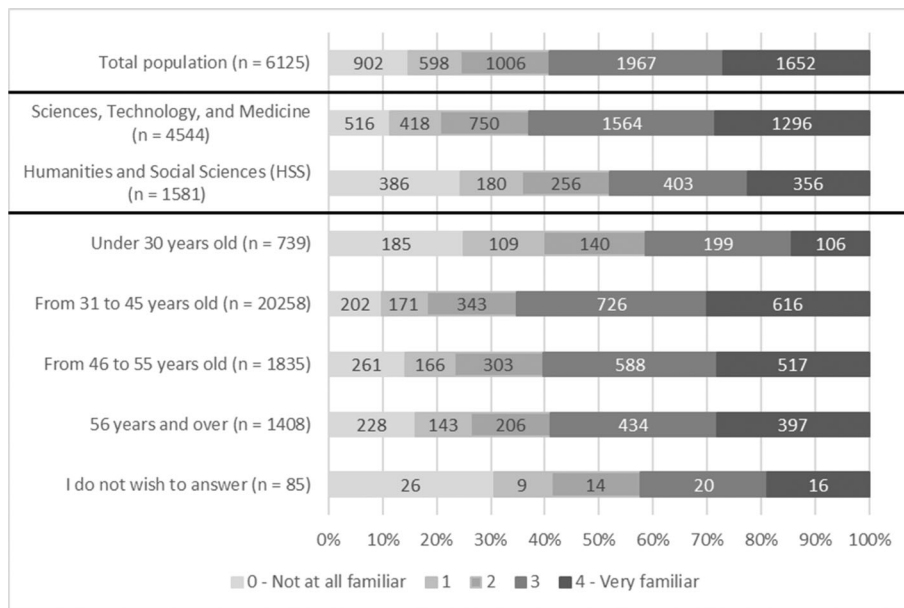


FIGURE 1 Respondents' familiarity with AIDs according to discipline and age. Mandatory response. Number of respondents: 6125. Only one answer possible.

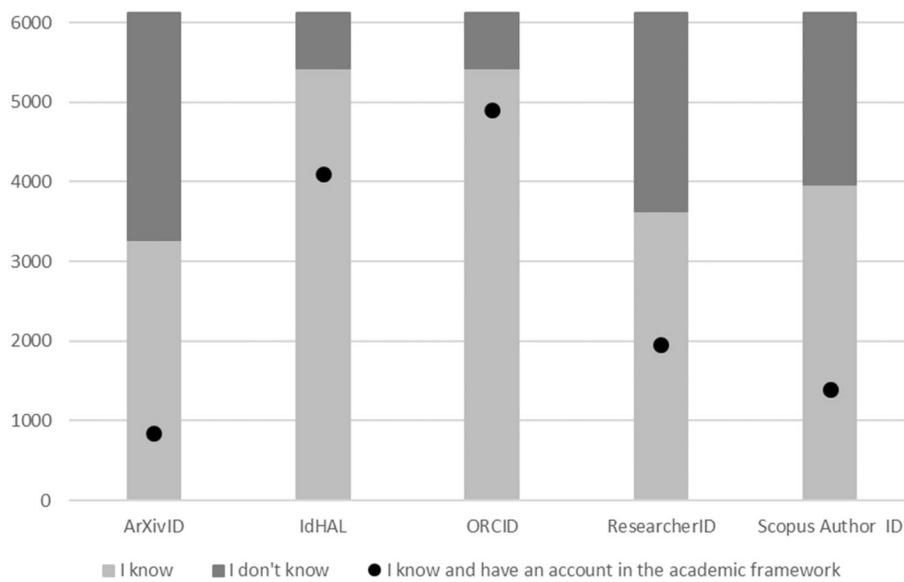


FIGURE 2 Awareness of AIDs. Account on AIDs. Mandatory response. Number of respondents: 6125. Only one answer possible.

researchers did not master the concept of AID. In some cases, their answers included online profiles (e.g., Academia, ResearchGate), bibliographic databases (e.g., ScienceDirect), publisher names (e.g., Springer), specific researcher evaluation methods or metrics (e.g., h-index), or authentication tools.

Reasons for creating an account with one or more AID

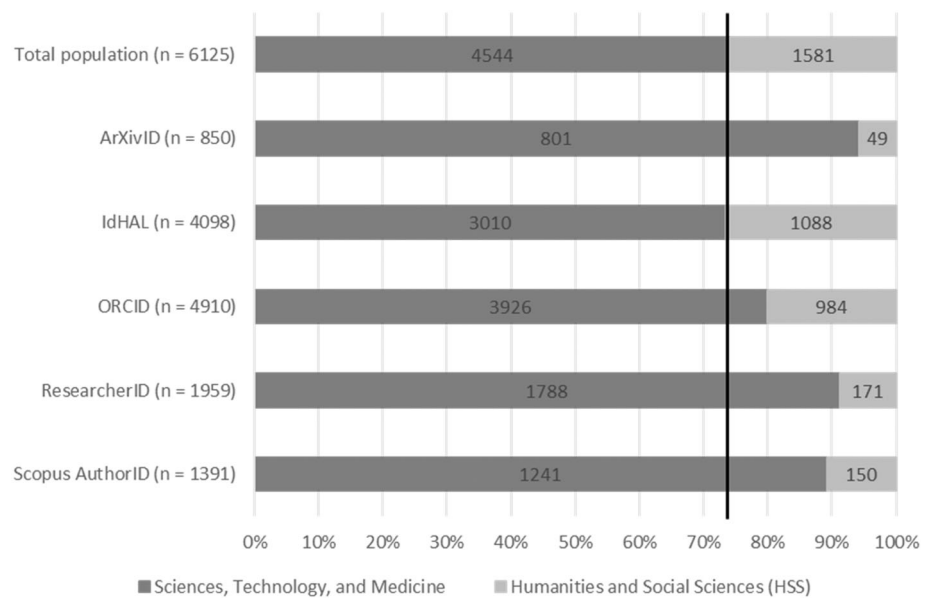
Regarding the reasons for creating an account on the different AIDs studied, the first reason for creating an ORCID or IdHAL account was an external request in more than 50% of cases (external requests from institutions or publishers, requests from thesis or laboratory supervisors) (Table 2). Conversely, the first reason for

creating an ArXivID, ResearcherID or Scopus Author ID account was related to individual choice (more than 50%). It should also be noted that for all the AIDs studied with the exception of IdHAL, thesis or laboratory supervisors had little influence on the researchers' decision to create an account. Finally, exchanges between colleagues played a role, and while not dominant, were at least relatively important in the decision of researchers to create an account on an AIDs (1–2 cases out of 10).

Actual use of AIDs

When researchers were asked about their actual use of the different AIDs studied, it was striking to note that they reported using AIDs mainly to respond to external requests (e.g., to submit

FIGURE 3 Number of accounts by discipline on the five AIDs studied. Vertical line: Reference value for the whole population indicating the over- or under-representation of STM or HSS researchers versus total population. STM researchers were over-represented on ArXivID, ORCID, ResearcherID and Scopus Author ID.



an article or a research project) (Table 3). They also used AIDs for bibliographic and bibliometric purposes (to obtain an up-to-date list of their research work or an online profile). Very few used them to ‘facilitate their work’ (e.g., to limit data entries, exchange information with other players in global education and research). The researchers did not consider using AIDs to differentiate themselves from other researchers. Finally, it appeared that some AIDs, especially ResearcherID and Scopus Author ID, were used for a specific functionality that they offer that is lacking in other AIDs (e.g., citation tracking).

Needs and forms of support required for AIDs

Respondents were then asked about their needs and forms of support required in relation to AIDs. They were asked about their needs for an introduction or practical training (Fig. 4). The proportions of respondents needing these two types of assistance reached 30% and 35%, respectively. Interestingly, just over 10% of the respondents did not know how to define their training needs for these tools.

In terms of the respondents’ needs for support by discipline and age, HSS researchers (Fig. 5) and researchers under 30 years old (Fig. 6), corresponding to early career researchers, were more likely to desire an introduction to or practical training in AIDs.

As shown in Fig. 7, the most frequently requested forms of support were online functions (online training, tutorials). Nevertheless, requests for face-to-face interventions or personalized support still amounted to a significant proportion, around 30%.

DISCUSSION

The aim of this study was to assess the use and awareness of AIDs, and to investigate the needs and forms of support required

for AIDs in the French national research community, using a national questionnaire survey. To the best of our knowledge, this is the first time a national survey of this nature has been performed.

Our results showed that discipline and age played an important role in the researchers’ familiarity with AIDs: researchers in HSS and those under 30 years of age were significantly less familiar than other researchers.

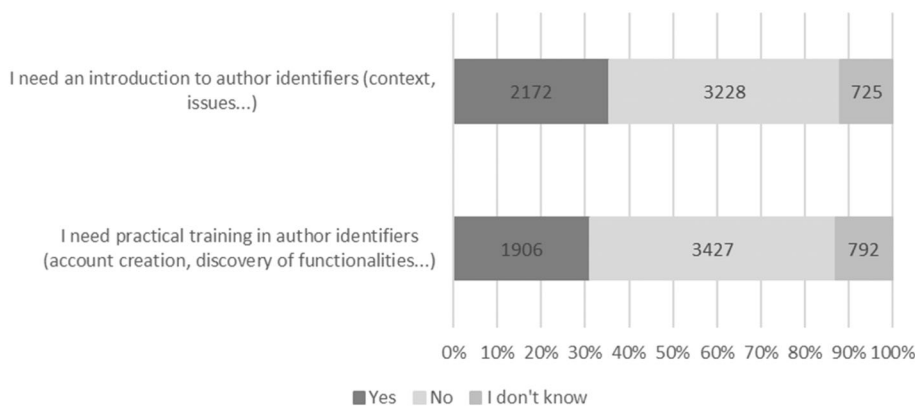
ArXivID, ResearcherID and Scopus Author ID were the least known of the five AIDs proposed to the respondents. ResearcherID and Scopus Author ID are associated with two bibliographic databases that provide content mainly intended for STM researchers, which reduces their scope for HSS. The lack of awareness of ArXivID for almost 50% of the respondents can be explained by its very strong and almost exclusive disciplinary link to physics, mathematics and computer science. This excludes its use in other disciplinary fields. IdHAL and ORCID were by far the two best known AIDs. Indeed, they have been promoted for several years via national or local plans or charters in the context of open science, but also by institutions (e.g., via the open archive HAL at national level in France for IdHAL), or by publishers for ORCID. It is worth noting that the proportion of respondents with an IdHAL and ORCID account was high among those who claimed to know these two AIDs (66.9% and 80.1% respectively for IdHAL and ORCID). Knowledge of these two AIDs seems to be linked to the creation of an account on these two AIDs. Indeed, French researchers are strongly encouraged or even obliged to create accounts on these two AIDs, for annual reporting for example. It should be noted that the percentage of respondents with an ORCID account (more than 80%) is much higher than proportions described in the literature concerning French researchers. A study carried out at the University of Caen in 2019 (Boudry & Durand-Barthez, 2020) and another carried out at the University of Toulouse in 2020

TABLE 2 Main reasons for creating an account on AIDs. Respondents who declared having at least one account on one of the five digital identifiers offered. Response only for sites on which respondents already had an account. Multiple answers possible.

ArXivID (n = 850)	IdHAL (n = 4098)	ORCID (n = 4910)	ResearcherID (n = 1959)	Scopus Author ID (n = 1391)
Individual reason (62.6%)	External request (39.2%)	External request (46%)	Individual reason (51.8%)	Individual reason (51.8%)
Other reason (33.1%)	Request from my thesis or laboratory supervisor (23.9%)	Individual reason (32.7%)	External request (31.6%)	External request (35.8%)
Exchanges between colleagues (24.9%)	Awareness/training (19%)	Exchanges between colleagues (10.2%)	Exchanges between colleagues (13.8%)	Other reason (16.3%)
External request (16.9%)	Individual reason (16.4%)	Awareness/training (8.5%)	Other reason (10.1%)	Exchanges between colleagues (11.2%)
Request from my thesis or laboratory supervisor (7.9%)	Exchanges between colleagues (8.1%)	Request from my thesis or laboratory supervisor (6%)	Awareness/training (5.9%)	Awareness/training (5.9%)
Awareness/training (4.1%)	Other reason (4.2%)	Other reason (3.9%)	Request from my thesis or laboratory supervisor (2.8%)	Request from my thesis or laboratory supervisor (1.7%)

TABLE 3 Actual usage of author identifiers. Respondents having at least one account on one of the five digital identifiers proposed. Response only for websites on which respondents already had an account. Multiple answers possible.

ArXivID (n = 850)	IdHAL (n = 4098)	ORCID (n = 4910)	ResearcherID (n = 1959)	Scopus Author ID (n = 1391)
External request (68%)	Having an up-to-date list of my work (49%)	External request (59.1%)	Tracking citations of my publications (38.3%)	Tracking citations of my publications (41.7%)
Other (31.8%)	External request (41.7%)	Having an up-to-date list of my work (41.6%)	Having an up-to-date list of my work (35.9%)	Having an up-to-date list of my work (34.1%)
Having an up-to-date list of my work (26.5%)	Having an online profile (30.3%)	Having an online profile (39.1%)	Having an online profile (35%)	External request (30.1%)
Making my work easier (16.5%)	Making my work easier (17.7%)	Making my work easier (22.2%)	External request (29%)	Having an online profile (28.7%)
Having an online profile (13.6%)	Distinguishing myself from other researchers (11.1%)	Distinguishing myself from other researchers (21.7%)	Distinguishing myself from other researchers (14.5%)	Other (15.8%)
Tracking citations of my publications (12.9%)	Tracking citations of my publications (10.8%)	Tracking citations of my publications (17.1%)	Making my work easier (13.9%)	Distinguishing myself from other researchers (14%)
Distinguishing myself from other researchers (9.9%)	Other (9.7%)	Other (4.2%)	Other (13.3%)	Making my work easier (13.7%)

**FIGURE 4** Needs for support on author identifiers. Only one answer possible.

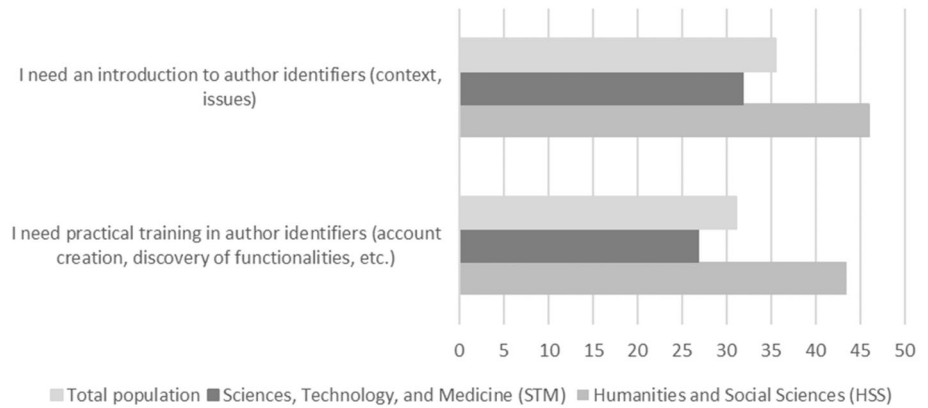


FIGURE 5 Needs for support on author identifiers according to discipline. Only one answer possible.

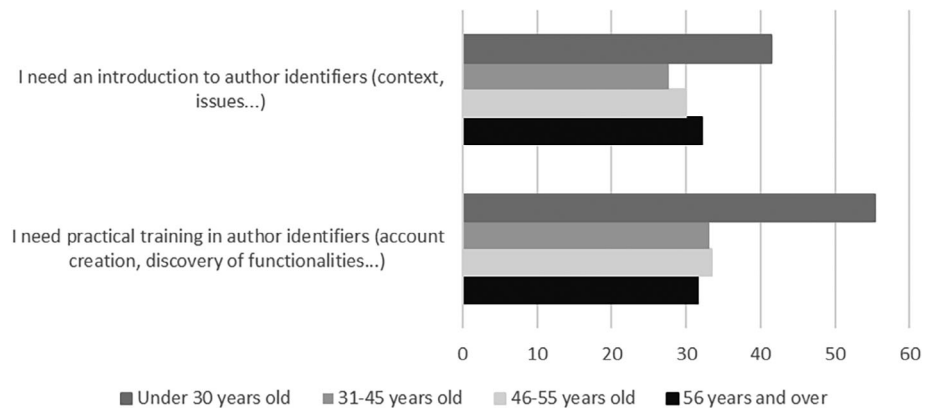


FIGURE 6 Support needs on author identifiers according to age. Only one answer possible.

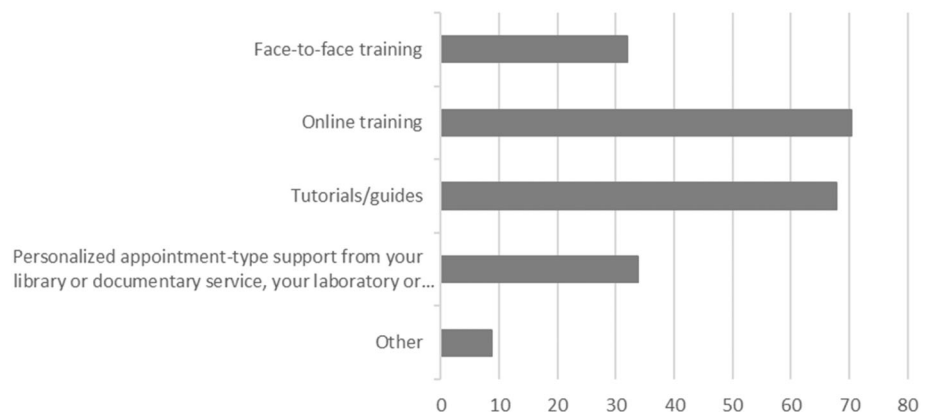


FIGURE 7 Forms of support required. Results expressed as a percentage in relation to the number of respondents who declared they needed support ($n = 2518$). Multiple answers possible.

(Heusse & Cabanac, 2022) reported that 17.1% and 41.8% of researchers respectively had an ORCID account. Although the data from these two studies was collected more than 3 years before the present study, it seems that this proportion of respondents with an ORCID account (80.1%) is probably over-estimated. This could indicate a probable bias in the recruitment of researchers to complete this questionnaire. Indeed, researchers who are familiar with AIDs and have an account on these tools, including ORCID, were probably more likely to respond to this questionnaire than those who were not, or who

were less familiar with AIDs. With the exception of IdHAL, respondents with an account on the other four AIDs are over-represented in the STM group. This over-representation of STM respondents on the ArXivID, ResearcherID and Scopus Author ID identifiers is the consequence of their STM orientation. In accordance with previous studies carried out in French universities (Boudry & Durand-Barthez, 2020; Heusse & Cabanac, 2022), respondents who reported having an ORCID account were also over-represented in STM disciplines. It is important to note that responses to the question 'Do you know

or have an account on another AID?’ highlights the confusion between AIDs, accounts, academic social networks and authentication tools. The proliferation of online accounts and the way they can be created seems to be confusing for some researchers.

The reasons for creating an account on the five AIDs studied vary. The main reason for creating an ORCID or IdHAL account is external requests in over 50% of cases (external requests from institutions or publishers, requests from thesis or laboratory supervisors) (Table 2). This can be explained by the numerous incentives (especially from publishers when submitting articles), or institutional requests, relayed by the laboratory supervisor, encouraging researchers to create an ORCID or an IdHAL account. It should also be noted that for all the AIDs studied, with the exception of IdHAL, thesis or laboratory supervisors had little influence on the researchers’ decision to create an account. Thesis and/or laboratory supervisors have a prescriptive role encouraging researchers to have an IdHAL account, so that their publications are present on the open archive HAL. This is in accordance with French national policies, which strongly encourage the submission of publications on the French national open archive HAL.

Surprisingly, very few researchers use these services to ‘facilitate their work’ (e.g., to limit data entry, to automatically exchange information), although this use is described in the literature as very useful and promising for researchers (Haak et al., 2012; Meadows et al., 2019). This could be explained by the fact that researchers reported using AIDs mainly to respond to external requests. In such cases, researchers are not encouraged to discover and use the full functionalities of AIDs, but only those entailed by these external requests. This is pointed out for ORCID in the ORCID Strategic Plan 2022–2025, which mentions that ‘users are confused about what ORCID is, what it does and what features it offers’ (From Vision to Value, 2021). Many researchers have partially identified one of the main benefits of using AIDs, that is, differentiating themselves from other researchers, perhaps because this study was conducted in France, where the problems of homonymy or transliteration are less acute than in other parts of the world (e.g., Asia).

Concerning support needs for AIDs, they are considerable, since more than 30% of the researchers indicated that they needed an introduction to, or practical training in these tools. Surprisingly, after the COVID crisis, which led to the development and generalization of online training, more than 30% of researchers still requested face-to-face interventions or personalized support. This strong demand for training should reassure those involved in training in the services they offer: in 2020, more than 70% of French university libraries offered support for AIDs (Letrouit et al., 2021).

In conclusion, the results of this national survey provide insight into the adoption and use of AIDs in France. This study should be helpful for stakeholders when adapting their policies and guiding and supporting researchers in the use of these tools.

AUTHOR CONTRIBUTIONS

All authors contributed to the study conception and design. Data collection was performed by Christophe Boudry and Aline Bouchard. Data analysis was performed by Christophe Boudry and Aline Bouchard. The first draft of the manuscript was written by Christophe Boudry and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

INFORMED CONSENT STATEMENT

The survey was anonymous and validated by the data protection officer of Normandie University to ensure compliance with the rules in force regarding data collection and processing. Although the questionnaire was anonymous, some respondents entered personal information in the free-entry zone. This personal data was restricted to the investigating team and was removed before analysis of the results.

DATA AVAILABILITY STATEMENT

The survey data is available on ‘Recherche Data Gouv’: Boudry, Christophe; Bouchard, Aline, 2024, ‘Enquête nationale “Utilisation et usages des identifiants numériques chercheurs en France”’. Recherche Data Gouv. [10.57745/1BHIOY](https://doi.org/10.57745/1BHIOY).

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