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Knowledge and use of the ORCID author identifier in France: A national survey

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Competing interests

The authors declare no competing interest.

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Abstract

The aim of this article was to explore the use and awareness of the ORCID identifier in the French national research community. Six thousand one hundred and twenty-five researchers completed the questionnaire in full, amounting to approximately 3.2% of the French national population of researchers. The respondents were asked about their reasons for creating an ORCID identifier, how they had discovered ORCID, what the characteristics of their ORCID profile were (privacy, completion of the various sections, etc.) and how they used it (context, motivations and obstacles). They were also asked about their knowledge of the ORCID ecosystem. The researchers overall reported a concrete, pragmatic knowledge of the ORCID identifier. The political and strategic framework remains generally unclear, or is unfamiliar, whether in terms of the objectives or the general interest of this tool. Researchers often only perceive the most obvious functionalities in their daily work, such as having an online profile. The less immediate or less individual features, such as being able to distinguish themselves from other researchers, are therefore not as well-known and used. This study should help stakeholders in France and internationally to adapt their policies, and to support researchers more efficiently in the use of the ORCID identifier.

Key points

- Researchers are confronted with ORCID for the first time and create an ORCID identifier usually as a result of an external request
- Researchers used their ORCID identifier mainly when publishing articles
- Overall, the researchers expressed a concrete and pragmatic knowledge and use of ORCID identifier

Keywords

Researcher identifiers; ORCID; national survey; digital tools; use; PID

Introduction

The aim of author identifiers is to accurately link researchers to their scientific production. They are intended to overcome problems of homonymy, name changes (as a result of marriage) or changes in affiliation over time (as a result of researchers' mobility), lack of consistency in the reporting of affiliations, or the use of author groups (Craft, 2020; Meadows & Haak, 2018; Tran & Lyon, 2017; Mering, 2017; Fenner & Haak, 2014). The correct identification of researchers and their scientific production is very important for all stakeholders in research (e.g. publishers, funders, universities,

research evaluators, etc.) because many actions depend on this stage (such as promotion, obtaining funding, etc.).

Unique identifiers have been developed for books for many years (e.g. the International Serial Book Number). The same is true for journals (e.g. the International Standard Serial Numbers) or scientific articles (e.g. Digital Object Identifiers). Unique identifiers have also been developed for authors in libraries, such as the International Standard Name Identifier (ISNI) or the Library of Congress Name Authority File (LC/NAF) in the United States. Article repositories and preprint servers such as Research Papers in Economics (RePEc) in 1999 and arXiv in 2005, were the first to introduce and use author identifiers (AIDs) (Warner 2010). Developed by Elsevier and Thomson Reuters, the first AIDs in bibliographic databases appeared in 2006 (Scopus Author ID in 2006 and Web of Science ResearcherID in 2008, respectively), aiming to provide a unique identification for bibliographic records. To provide an AID that is independent from article repositories, preprint servers and bibliographic databases, the Open Researcher & Contributor ID (ORCID) was launched in 2012.

ORCID is an open, international, non-profit, transnational and community project (ORCID, 2020). In particular, ORCID is a 16-digit number identifier that allows each author to be uniquely identified and enables researchers to include all the publications of their choice in their profile, to monitor the data entered, and to interact and exchange data with the various global research services. Indeed, unlike other AIDs, this service is interoperable with most of the actors involved in research, and it enables the exchange of information with other websites (e.g. CrossRef) (Gasparyan et al., 2014; Arunachalam & Madhan, 2016; Haak et al., 2018; Houghton & Foster, 2024).

This AID has been widely promoted for its open source and its interdisciplinary and transnational approach (Youtie et al., 2017). It is now the most widely used author identifier by researchers (Tran & Lyon, 2017; Bello & Galindo-Rueda, 2020; Boudry & Durand-Barthez, 2020) and is required by many services used by researchers, e.g. submission platforms, national or international grant application agencies (Citrome, 2016; Gasparyan et al., 2014). As mentioned by Xu and Hu (2024), ORCID can also help to fight against research misconduct, in particular by curbing authorship-related misconduct, detecting predatory journals and publishers, and tracking undesirable records in academic publishing.

This service, however, is not exempt from criticism: the creation of an ORCID identifier is neither monitored nor controlled, enabling researchers to create multiple accounts, which leads to duplicates (Schnieders et al., 2022; Teixeira da Silva, 2020). Some authors have also pointed out that ORCID is vulnerable to fraud and hacking (Leopold, 2016), and tends to accumulate inactive or out-dated profiles (Memon & Azim, 2019; Schnieders et al., 2022). As privacy settings enable researchers

to hide the content of their profile, some profiles can be completely private with no content available (Boudry & Durand-Barthez, 2020; Craft, 2020). It has also been suggested that the compulsory use of ORCID to access publisher or agency systems is problematic for the freedom of academic research (Choraś & Jaroszevska-Choraś, 2020; Teixeira da Silva, 2021). Finally, some authors have also identified issues with data protection, privacy, and the right to be forgotten in the case of deactivation of ORCID accounts (Choraś & Jaroszevska-Choraś, 2020; Houghton & Foster, 2024).

Despite these limitations, this author identifier seems in the best position today to establish itself as a standard. A number of articles have been published describing the problems of author identification and the usefulness of digital researcher identifiers, including ORCID (Bohannon & Doran, 2017; Haak et al., 2012; Youtie et al., 2017). A number of studies have also been conducted to specifically assess the extent to which digital researcher identifiers are used by researchers (Mikki et al., 2015; Tran & Lyon, 2017; Morgan & Eichenlaub, 2018; Boudry & Durand-Barthez, 2020; Heusse & Cabanac, 2022; Schnieders et al., 2022; Porter, 2022; Fernandez-Marcial et al., 2023). It is also important to look at the use and knowledge of ORCID to understand who the users of this identifier are and what they know about this AID. To this end, the ORCID organization has been exploring the use and awareness of the ORCID identifier since 2015 at a global level. (Armstrong et al., 2015; Meadows et al., 2019).

The aim of this article was to explore the use and awareness of the ORCID identifier in the French national research community, using a national questionnaire survey.

Methods

Data for this study was collected through a national questionnaire survey. The target populations were researchers, lectures 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 2 distinct parts, with a total of 42 questions. The first part of the questionnaire was related to AIDs in general, among which ORCID, while the second part contained questions specifically related to ORCID. This article presents the results of the second part, the results for the first part will be published separately, given the large amount 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 for almost 3 months, from 9 November 2022 to 7 February 2023. The French Ministry of Higher Education and Research ensured its dissemination to the French research community. Two reminders were sent out 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.

Results

Socio-demographic characteristics of the respondents

In the 3-month period when the questionnaire was available, 7,987 people connected to the homepage. Six thousand one hundred and twenty-five 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.

Variables	Categories	Number (%)
Institution	Universities	3,252 (53.1%)
	Research organizations (e.g. French National Centre for Scientific Research or National Institute of Health and Medical Research)	2,252 (36.8%)
	Specialized universities ("Grandes écoles")	450 (7.3%)
	Health institutions (e.g. university hospitals)	81 (1.3%)
	Others	90 (1.5%)
Gender	Male	3,345 (54.6%)
	Female	2,410 (39.3%)
	Other	28 (0.5%)
	Prefer not to answer the question	342 (5.6%)
Age	<30 years	739 (12.1%)
	31-45 years	2,058; (33.6%)
	46-55 years	1,835 (30%)
	56 years and over	1,408 (23 %)
	Prefer not to answer the question	85 (1.4%)
Discipline	Sciences, Technology, and Medicine (STM)	4,544 (74.2%)
	Humanities and Social Sciences (HSS)	1,581 (25.8%)

Table 1 : Socio-demographic characteristics of respondents

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% versus 43% and 1.3% versus 9% respectively. The breakdown between respondents who declared themselves in STM and HSS was 74.2% (n=4544) and 25.8% (n=1581) respectively. This distribution was fairly similar to that observed at national level, which excludes doctoral students, post-docs 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 is 41.9%, a figure very close to that of the percentage of women working in French public research (41%). No age data were available to compare our sample overall with the national population.

Numbers and characteristics of researchers with ORCID identifiers

Of the 6,125 respondents, 4,910 (80.2%) reported having an ORCID identifier, 520 (8.5%) reported knowing ORCID without having an account, and 695 (11.3%) reported not being aware of ORCID. It should be noted that the percentage of respondents with an ORCID identifier was much higher than percentages described in the literature on French researchers. A study carried out at the University of Caen in 2019 (Boudry & Durand-Barthez, 2020) and one carried out at the University of Toulouse in 2020 (Heusse & Cabanac, 2022) reported that 17.1% and 41.8% of researchers respectively had an ORCID identifier. Although these two studies were published three and four years before this study, in 2020 and 2022 respectively, it seems that the present proportion of respondents with an ORCID identifier (80.2%) is likely to be overestimated. This could indicate a potential bias in the recruitment of researchers to complete this questionnaire. Indeed, researchers who were familiar with AIDs and had an account on these tools, including ORCID, were probably more likely to respond to this questionnaire than those who were not, or were less familiar with AIDs. Nevertheless, the results of our study confirm the main conclusions of previous studies. As previously described, our data showed that STM researchers with an ORCID identifier were overrepresented (Boudry & Durand-Barthez, 2020; Heusse & Cabanac, 2022; Porter, 2022; Schnieders et al., 2022; Bordons et al., 2024). They amounted to 74.2% (n = 4544) of all respondents in STM, while they accounted for 80% (n = 3926) of those with an ORCID identifier. As pointed out by Bordons *et al.* (2024), this “difference may be due to the more challenging implementation of ORCID in humanities publications due to the wide variety of publication channels, including smaller channels with limited capacity to incorporate this identifier into their procedures”. In terms of age, researchers with an ORCID identifier under the age of 30 (such as Ph.D. students) were under-represented, while those aged 31 – 45 years (early career researchers) were over-represented (Figure 1).

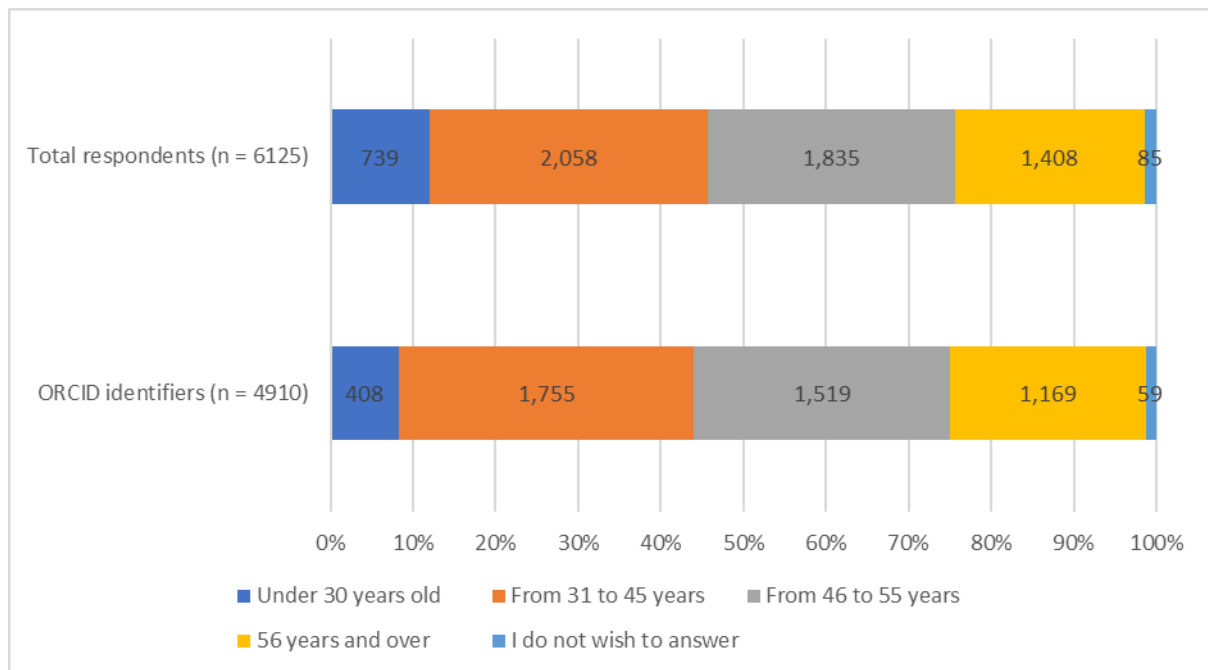


Figure 1 : ORCID identifiers according to age

Respondents with scientific or administrative responsibilities who had an ORCID identifier were more numerous: 3,131 (51.1%) respondents exercised scientific or administrative responsibilities out of the total respondents (n = 6,125), and 2,833 (57.6%) out of 4,910 had an ORCID identifier. The same was true for researchers involved in international projects: 3555 (58%) respondents were involved in international projects out of the total respondents (n = 6,125), and 3,188 (64.9%) out of 4,910 had an ORCID identifier. These results could reflect a greater exposure of these two categories of researchers to national or international services, encouraging or obliging them to use ORCID.

The discovery of ORCID and reasons for creation of an ORCID identifier

Among the respondents who stated that they were familiar with ORCID or had an ORCID identifier (n = 5,430), 37.7% said they discovered ORCID through a publisher. Indeed, an increasing number of publishers, particularly in STM, are encouraging, or to a lesser extent, requiring, researchers to create an ORCID identifier when submitting their manuscripts (Boudry, 2021) (Table 2). The proportion of HSS researchers having discovered ORCID through a publisher was smaller, reflecting the smaller proportion of HSS publishers using submission platforms. Colleagues played an important role in the discovery of ORCID, whereas, surprisingly, funders seemed to play only a minor role.

Total respondents (n=5 430)	Sciences, Technology, and Medicine (STM) (n=4,242)	Humanities and Social Sciences (HSS) (n=1,188)
Publisher (n=37.7%)	Publisher (41.7%)	Publisher (23.4%)
I don't remember (20.4%)	I don't remember (21.6%)	Institution (19.5%)
Colleagues (14.2%)	Colleagues (13.6%)	Colleagues (16.5%)
Institution (12.6%)	Institution (10.7%)	I don't remember (16%)
Other (7.8%)	Other (5.9%)	Other (14.6%)
Thesis or laboratory supervisor (4.8%)	Thesis or laboratory supervisor (4.7%)	Thesis or laboratory supervisor (5%)
Conference or congress (1.3%)	Conference or congress (1%)	Funder (2.7%)
Funder (1.3%)	Funder (0.8%)	Conference or congress (2.3%)

Table 2 : Discovery of ORCID. Respondents with an ORCID identifier (n = 4,910) and respondents who reported knowing ORCID without having an account (n = 520). Only one possible answer

When distinguishing between respondents who knew about ORCID without having an account and those who had an ORCID identifier, the proportion of respondents who discovered ORCID through a publisher was much larger in the second category (Figure 2). This confirms the dominant role of publishers in the creation of ORCID identifiers. On the other hand, respondents who knew about ORCID without having an account mainly discovered it through their institutions. This seems to indicate an informing rather than a prescriptive role of institutions.

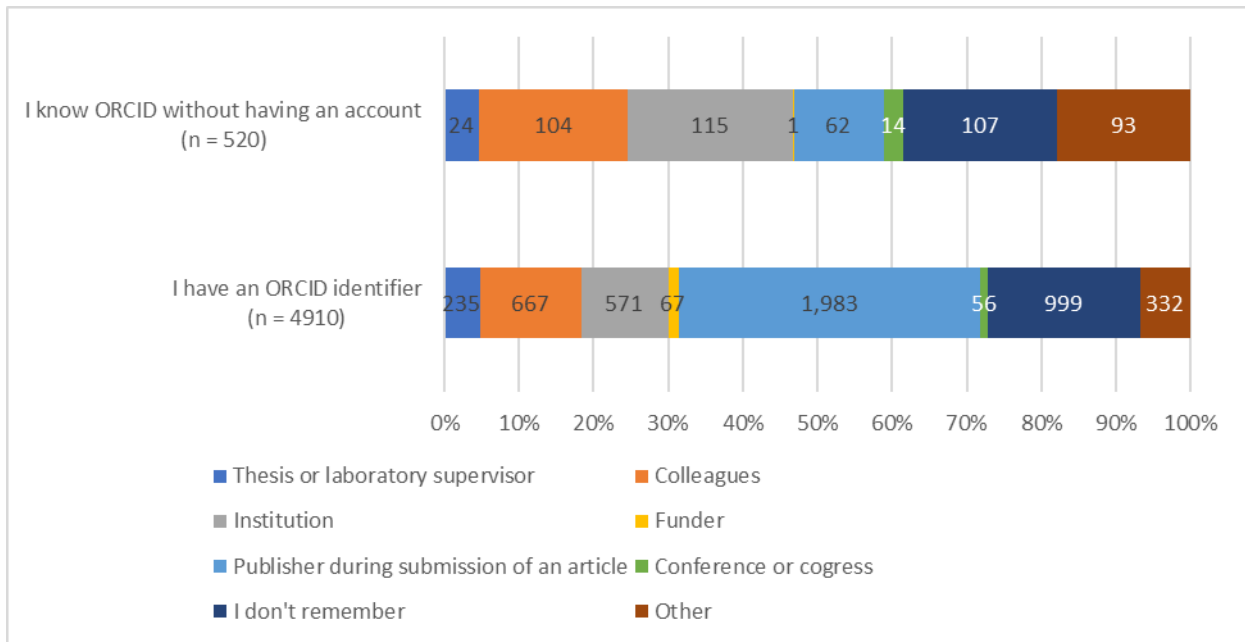


Figure 2 : Discovery of ORCID. Respondents with an ORCID identifier (n = 4,910) or respondents who reported knowing ORCID without having an account (n = 520). Only one possible answer

The first reason for creating an ORCID identifier originated from external requests in more than 50% of cases (e.g. external requests from institutions or publishers, requests from the thesis or laboratory supervisors) (Table 3). Indeed, as already pointed out by Houghton and Foster (2024), there are now numerous incentives to create an ORCID identifier, especially from publishers for article submission (Citrome, 2016), or institutional mandates for researchers. Surprisingly, and unlike results from previous studies (Dunford & Rosenblum, 2018; Houghton & Foster, 2024), funders seem to play a very minor role in the discovery of ORCID. Exchanges between colleagues play, if not a dominant role, a relatively important one in researchers' decision to create an ORCID identifier (1 in 10 cases).

What are the main reasons for creating an ORCID identifier?	
Spontaneous approach	32.7% (n = 1,604)
As a result of awareness / training	8.5% (n = 418)
Exchanges between colleagues	10.2% (n = 502)
External request (institution, publisher...)	46% (n = 2,260)
Request from my thesis or laboratory supervisor	6% (n = 294)
Other reason	3.9% (n = 193)

Table 3 : Main reasons for creating an ORCID identifier. Respondents with an ORCID identifier (n = 4,910). Several possible answers

Knowledge of the ORCID ecosystem

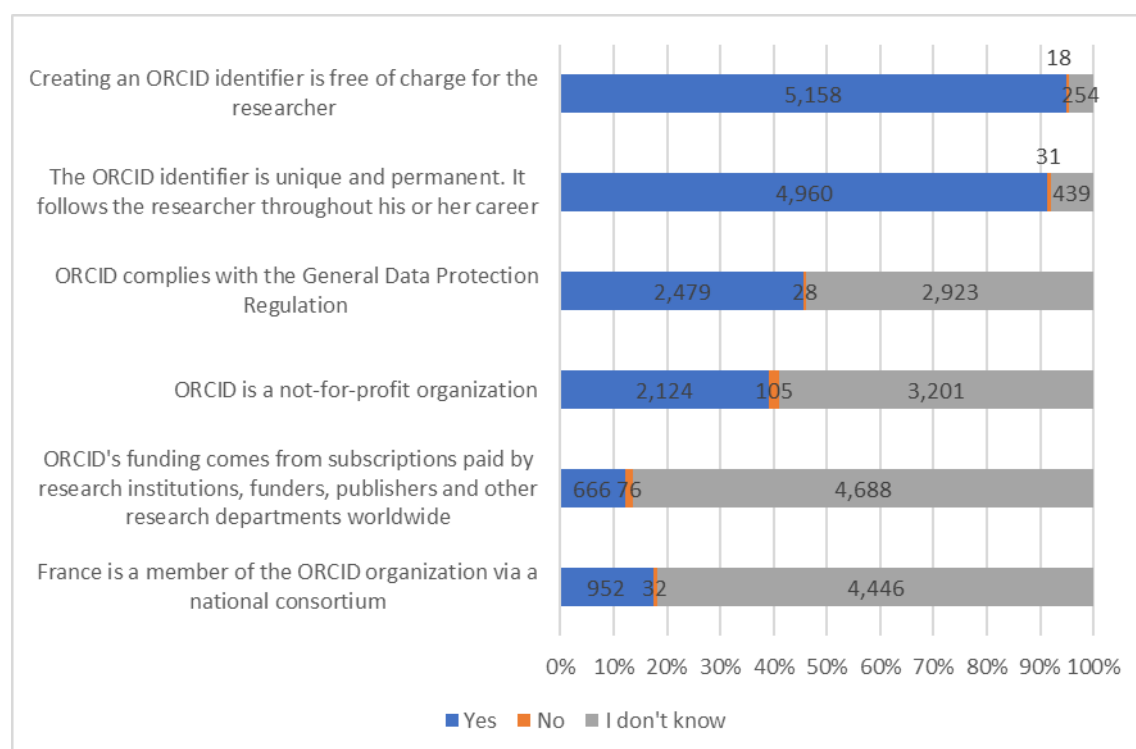


Figure 3 : Knowledge of the ORCID ecosystem. Respondents with an ORCID identifier (n = 4,910) or respondents who reported knowing ORCID without having an account (n = 520)

The respondents were then asked about their knowledge of the ORCID ecosystem. Only responses from respondents who said that they were familiar with ORCID or had an ORCID identifier were included (n= 5430). Quite logically, it is clear that the further the questions asked moved away from the researchers themselves and their immediate concerns (free account creation, durability of the identifier) to focus on the ORCID ecosystem per se (financial resources, French membership of the ORCID organization), the larger was the percentage of respondents declaring that they did not know the answer (Figure 3).

This also reflects the fact that a researcher does not need to be familiar with the ORCID ecosystem to be interested in it and use it.

Characteristics of ORCID profiles

Researchers who reported having several ORCID identifiers, or who did not know if they had several identifiers, amounted to 3.4% (n = 164) of the respondents (43 (0.9%) and 121 (2.5%) respectively). The proportion of researchers with several ORCID identifiers was therefore quite small. The possibility for researchers to create several ORCID identifiers, as mentioned by Teixeira da Silva (2020), remains a cause for concern. It is important to note that the multiplicity of ORCID identifiers contradicts one of the primary objectives of AIDs, i.e. their uniqueness for each researcher.

When researchers were asked how long they had had their ORCID identifier, 78.6% (n = 3,859) reported they had had their ORCID identifier for three years or more, 14.6% (n = 699), from one to two years, 5.1% (n = 248), for less than a year, and 2.1% (n = 104) said they could not remember. In fact, publishers have been using ORCID for their submissions for several years now, starting in 2016-2017 (Meadows, 2017), which explains why most researchers today have had an ORCID identifier for more than three years. Furthermore, in the French setting, ORCID was promoted as early as 2018-2022 in the first French National Plan for Open Science (Ministère de l'Enseignement Supérieur et de la Recherche, 2018), and awareness/training actions have been launched since this period (Letrouit et al., 2021).

In terms of ORCID profile visibility, more than half (54%) of the respondents indicated that their profile was public (Table 4). In addition, almost a quarter of the respondents did not know whether their profile was private or public, indicating a lack of understanding of their own use of ORCID. A proportion of 2.6% of private profiles was reported, in contrast with the results of two studies published in 2021 and 2024 which indicated proportions of respectively 27.1% of private profiles at international level (Boudry, 2021), and around 5% for European Research Council (ERC) Spanish researchers (Bordons et al., 2024). These private profiles, where content cannot be verified, are potentially problematic as they can underpin fake ORCID profiles (Teixeira da Silva, 2020).

Your profile is ?	
Public (everyone can see it)	54% (n = 2,653)
Partially public (some parts are not visible)	19.3% (n = 948)
Private (nobody can see it)	2.6% (n = 128)
I don't know	24.1% (n = 1,181)

Table 4 : Visibility of ORCID profiles. Respondents with an ORCID identifier (n = 4,910). Only one possible answer

When the researchers were asked about the sections they had completed on their ORCID profiles, unsurprisingly the "work" (publications) section came first (more than 60% of the researchers

completed this section) (Figure 4). However, this percentage seems small compared to those reported in other studies (86.5% and 98% for Fernandez-Marcial *et al.* (2023) and Bordons *et al.* (2024), respectively). We are not able to explain this small percentage, because, apart from doctoral students, almost all the researchers should have been able to complete this section. Nearly 20% of the researchers did not add any information to their ORCID profile, suggesting that they very probably created an ORCID identifier solely to access a service for which ORCID use was encouraged or mandatory and which they needed. It is worth noting that, with the exception of the “work” section, there were no significant differences between STM and HSS researchers.

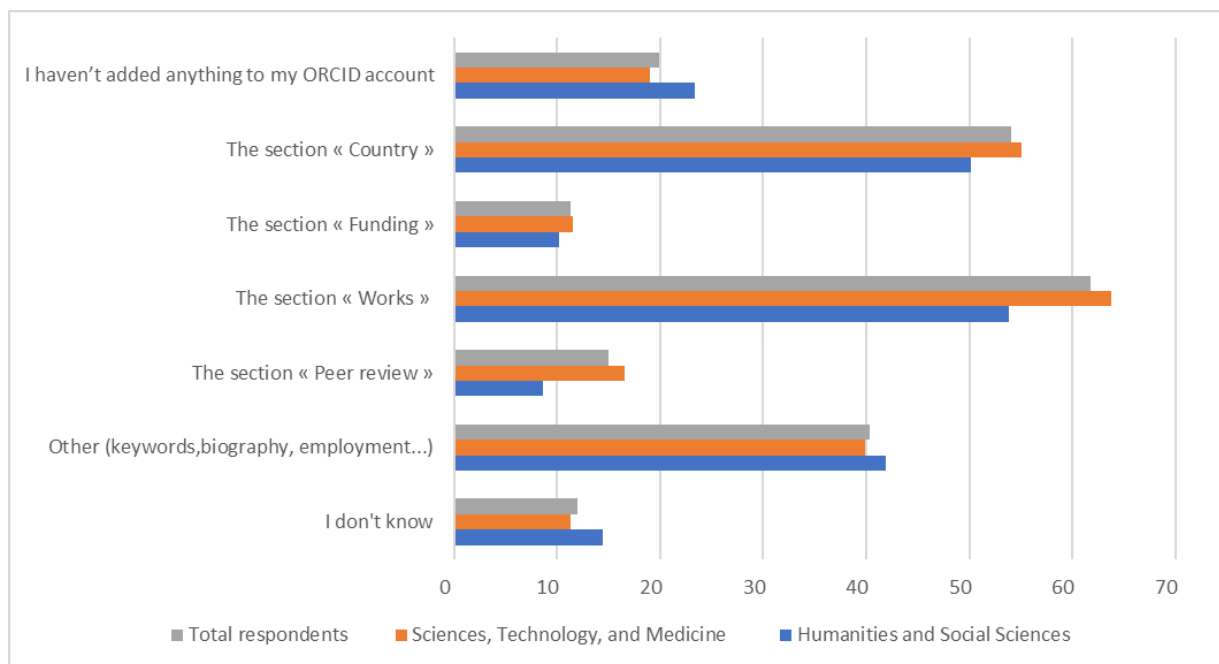


Figure 4 : Completion rates of the various sections on ORCID profiles (percentages). Respondents who reported having an ORCID identifier. Number of respondents: 4,910 (3,926 STM and 984 HSS). Several possible answers

Sixty-four point six per cent of the researchers added content to their ORCID profiles themselves, and more than 50% (54.2%) authorized one or more services or institutions to complete their profiles (Table 5) (compared to 25% in a 2019 ORCID global study (8,163 respondents) (Meadows 2019)). The role of institutions in adding content to ORCID profiles was very minor: only 5.9% of respondents authorized their institution to access and update their ORCID profiles. This is quite logical as few French institutions currently offer this service.

How do you add content to your ORCID profile?	
I add information myself (e.g. manually or via BibTeX)	64.6% (n = 2,543)
I have authorized one or more services or organizations to add information to my ORCID profile (e.g. Crossref, Editorial Manager or ResearcherID, etc.)	54.2% (n = 2,132)
I have authorized my institution to intervene on my ORCID profile and update it for me (Trusted organization)	5.9% (n = 234)
I have delegated the management of my profile to another person (Trusted individual)	0.2% (n = 9)
I haven't added anything to my ORCID profile	14.5% (n = 571)

Table 5 : Adding content to ORCID profiles. Respondents who reported having an ORCID identifier and having added content. Number of respondents: 3,934. Several possible answers

More than 60% of the respondents mentioned logging into their ORCID account only once or twice a year (Table 6). Worldwide ORCID statistics show that 60% of ORCID accounts are active per year in the “work” section (*ORCID Statistics, 2023*). This is likely to indicate a low level of use of their ORCID accounts, or low a frequency of profile updates; some researchers update their profile once or twice a year to optimize this task and save time. Some authors have pointed out that this could be suggestive of some reluctance towards the time spent filling out and maintaining an ORCID profile, as the biggest issue with using an ORCID identifier is keeping it up to date (Houghton & Foster, 2024; Sprague, 2017). However, one must note that some information such as publications can be updated quickly through services and organisations that act as intermediaries (automatic update). This automatic updating is a great advantage of the system, which may not be well exploited due to researchers' lack of knowledge (it is used by 54.2% of the respondents (Table 5)).

How often do you log in to your ORCID account?	
Weekly	1.6% (n = 77)
Monthly	20.4% (n = 1,002)
1 or 2 times a year	61% (n = 2,993)
I have never logged back into my ORCID account after creating it	12.7% (n = 625)
I don't know	4.3% (n = 213)

Table 6 : Frequency of connection to the ORCID account. Respondents with an ORCID identifier (n = 4,910). Only one possible answer

These results are not consistent with those published by Bordons et al. (2024), where only 10% of the ORCID profiles of ERC Spanish researchers had not been updated for more than 6 months. This difference could be explained by the specificity of their study population (ERC researchers) who could be more committed to ORCID than the population in the present study. More than 12% of respondents said they had not logged back into their ORCID account since its creation. In this case, it is quite likely that these researchers created an ORCID identifier just to give them access to a service they needed (e.g. submission of an article using a submission platform). We can assume that these

respondents are very probably the reason for the significant number of empty profiles (20%) described above.

Use of ORCID Identifier

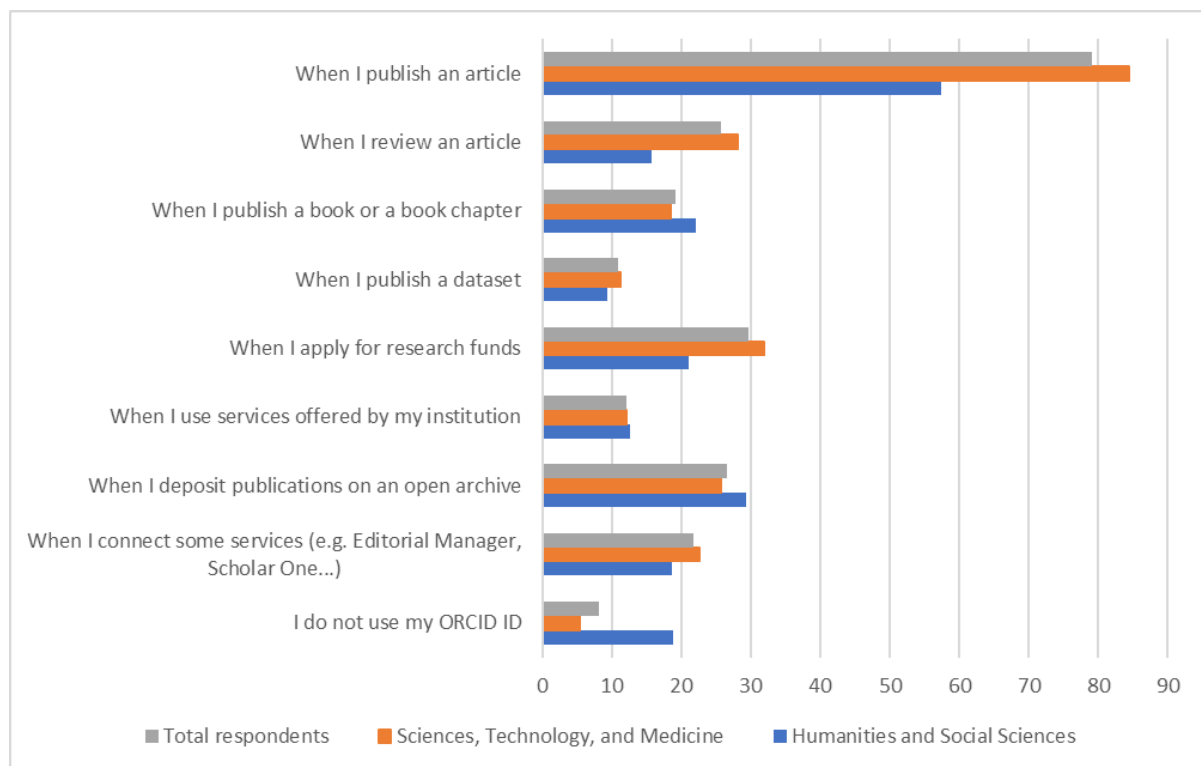


Figure 5 : Use of ORCID identifier. Respondents who reported having an ORCID identifier (percentages). Number of respondents: 4,910 (3,926 STM and 984 HSS). Several possible answers

When asked about the context in which they used their ORCID identifier, almost 80% of the respondents said they used it when publishing articles (Figure 5). This is consistent with the fact that an increasing number of scientific journals, particularly in STM, are encouraging or requiring authors to have an ORCID identifier when submitting an article (Citrome, 2016). As an example, in 2021, in their last 100 published articles, almost half of the journals indexed by PubMed contained one or more ORCIDs declared by authors (Boudry, 2021). This means that these journals either encourage or require authors to declare an ORCID when submitting articles via submission platforms. The smaller proportion of HSS researchers who said they used their ORCID account is directly linked to the fact that publishers in these disciplines much less frequently ask authors to declare an ORCID when submitting their articles (Boudry, 2021). This is corroborated by the fact that articles in the HSS field contain fewer ORCIDs than those in the STM field (Mikki et al., 2015; Boudry, 2021). Data on the use of an ORCID identifier when a book is published is very different from that for articles, which is directly linked to publication processes for books, which still only rarely require the use of an ORCID identifier. Finally, in contrast with the proportion of the respondents who said they did not enter any information on their ORCID profile (nearly 20%, who could be thought not to use their ORCID account

at all, see Figure 4), less than 10% of the respondents said they did not use their ORCID identifier. This difference highlights a very specific use of ORCID by some researchers, who almost certainly use it as a gateway to access services without their profile containing any information whatsoever (single sign-on). As already pointed out by Fernandez-Marcial (2023), this lack of completeness of the profiles highlights the fact that there is less involvement in maintaining an ORCID profile than in creating one.

	Yes	No	I don't know
Have you ever been obliged to use your ORCID identifier?	59.3% (n = 2,914)	30.8% (n = 1,512)	9.9% (n = 484)
Have you ever used your ORCID identifier spontaneously?	53.8% (n = 2,644)	39.6% (n = 1,942)	6.6% (n = 324)

Table 7: Mandatory and spontaneous use of ORCID identifier. Respondents with an ORCID identifier (n = 4,910). Only one possible answer

The requirement to provide an ORCID identifier for the corresponding author, and sometimes for all authors, is becoming increasingly common when manuscripts are submitted (Citrome, 2016). The same is true for the increasing number of funding bodies (Gasparyan et al., 2014; Xu & Hu, 2024) that require researchers to provide an ORCID when responding to calls for proposals. It is therefore not surprising that 59.1% of the researchers stated they had been required to use their ORCID identifier (Table 7). As pointed out by Teixeira da Silva (2020), this obligation is potentially problematic in terms of researchers' academic freedom. In particular, this author highlights the fact that this obligation could ultimately prevent researchers who refuse to use ORCID for one reason or another from publishing in certain journals and from having access to research funds offered by certain funding bodies. On the other hand, 53.8% of the researchers stated that they used their ORCID identifier spontaneously, showing that more than half of the respondents with an ORCID identifier behaved proactively with regard to the use of their ORCID identifier. This most certainly shows that they found a personal interest in using ORCID beyond the imposed obligations they may have encountered. Conversely, it means that the other respondents did not use ORCID proactively, which corroborates the conclusions drawn by Schnieders *et al.* (Schnieders et al., 2022) who argued that the requirement for researchers to be involved in validating, updating and correcting data could be the reason for the low levels of use of ORCID.

What are your motivations for using the ORCID Identifier?	
None, I created an ORCID identifier out of necessity	30.8% (n = 1,511)
To find information about colleagues	16.2% (n = 794)
Because it is used by my co-authors and colleagues	22.6% (n = 1,108)
To save time (streamlining/facilitating work/limiting entries)	33.5% (n = 1,645)
To distinguish myself from other researchers (e.g. homonymy problem)	21.2% (n = 1,042)
For its free nature and its governance (non-profit association)	32.8% (n = 1,611)
For its place in a large and varied ecosystem	33.1% (n = 1,624)
For its polyvalence whatever the country or establishment in which I work	54.1% (n = 2,655)
To have an online profile/CV and monitor the visibility of my various research activities	48.5% (n = 2,380)

Table 8 : Motivations for using an ORCID Identifier. Respondents with an ORCID identifier (n = 4,910). Several possible answers

With regard to reasons for using an ORCID identifier, the respondents stated that they used it first and foremost because it was durable and enabled them to have an online profile/CV, which is one of the main features and functions of an ORCID identifier (Table 8). The respondents clearly identified the opportunity offered by an ORCID identifier to streamline their work and save time. Another notable point is that almost one researcher in three said that they had created their ORCID identifier purely out of necessity.

What are the obstacles to using the ORCID identifier? *	
There is no barrier to the use of ORCID	47.4% (n = 2,574)
I would use ORCID if it was mandatory	8.8% (n = 477)
ORCID is still underdeveloped in my community	17.5% (n = 951)
I see no point in using ORCID	14.8% (n = 802)
I do not wish to share data with a non-institutional actor supported by major publishers	6.4% (n = 346)
ORCID features evolve regularly and I don't have time to keep up with them	10.9% (n = 591)
It is difficult to use	4.8% (n = 262)
It's time-consuming	11.6% (n = 630)

Table 9 : Obstacles to the use of the ORCID identifier. Respondents with an ORCID identifier (n = 4,910) and respondents who reported knowing ORCID without having an account (n = 520). Several possible answers

When the respondents were asked about barriers to using an ORCID identifier, over 50% of those with an ORCID identifier said that they felt there were no barriers to its use (Table 9). This indicates that the use of ORCID identifiers is primarily viewed positively by the respondents. The main obstacle to the use of an ORCID identifier for respondents with an ORCID identifier was the fact that they

considered that it was still underdeveloped in their community. As researchers are generally very attached and attentive to the practices of their own communities, it seems quite logical that they should not wish to invest in an ORCID identifier if they perceive it as a source of exclusion from their colleagues' practices. There is also a lack of interest in using the ORCID identifier, considering that this lack of interest could be less important in the future as researchers become more knowledgeable.

Conclusion

The aim of this article was to explore the use and awareness of the ORCID identifier 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 type has been performed. This study illustrates the uses and modes of appropriation of the ORCID identifier in the current academic context. Overall, the researchers expressed a concrete and pragmatic knowledge of this identifier. The political and strategic framework remains generally obscure or poorly understood, in terms either of the objectives or of the general interest of this tool. When researchers are confronted with ORCID for the first time, usually as a result of an external request, they often only perceive the most obvious functionalities in their daily work or in their community (e.g. having an online profile/CV). As ORCID services are in fact broader, it is difficult to understand them all without a minimum of support and advice. The less immediate or less individual features are therefore less well known and used among researchers, e.g. to distinguish themselves from other researchers. There are three possible reasons for this: a lack of sufficient upstream information when an account is created, a lack of interest or time to find out more once an account has been created or, on the contrary, an explicit desire to take advantage only of features offering an added value, compared to other tools. In conclusion, we hope that this study will help stakeholders in France and internationally to adapt their policies, and to guide and support researchers more efficiently in the use of the ORCID identifier.

Statement of informed consent

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.

Authors' 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 have read and approved the final manuscript.

Data availability

The data supporting the findings of this study is openly available on "Recherche Data Gouv". Boudry, Christophe ; Bouchard, Aline, 2024, "Enquête nationale "Utilisation et usages des identifiants numériques chercheurs en France". Recherche Data Gouv. <https://doi.org/10.57745/1BHIOY>.

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