



ORCID

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and Researchers

# ORCID Landscape Analysis and Stakeholder Identification Report

## AN EXPLORATION IN THE BIOETHICS COMMUNITY OF SUB-SAHARAN AFRICA

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**TABLE OF CONTENTS**

**TABLE OF CONTENTS..... 1**

**INTRODUCTION..... 2**

    Overview of origins and functions..... 2

    ORCID in Sub-Saharan Africa..... 3

    Implications of ORCID's work for bioethics..... 4

**OBJECTIVES..... 6**

    Primary Objective..... 6

    Secondary Objectives..... 7

    Research Questions..... 7

**METHODOLOGY..... 8**

    Study population..... 8

    Eligibility criteria..... 9

    Sampling strategy..... 10

    Sample size..... 11

    Data collection..... 11

    Ethical considerations..... 14

    Data analysis..... 15

**RESULTS..... 16**

    Demographic characteristics..... 16

    ORCID awareness and usage..... 17

    Barriers to ORCID adoption..... 23

    Perceived benefits of ORCID and user satisfaction..... 24

**DISCUSSION AND RECOMMENDATIONS..... 28**

    Key findings and interpretation..... 28

    Stakeholder Identification..... 29

    Limitations..... 31

    Recommendations..... 32

**REFERENCES..... 34**

## INTRODUCTION

In an era of rapidly advancing digital technologies and global collaborations, there is an increasing need for researchers to have reliable identification systems. The Open Researcher and Contributor ID (ORCID) initiative emerged in 2010 as a critical solution to this challenge by providing researchers with unique identifiers that distinguish them throughout their academic and professional careers [1, 2]. ORCID has gained widespread adoption across the globe, including in Sub-Saharan Africa. This section provides an overview of the origins and functionalities of ORCID, its implementation and adoption in Sub-Saharan Africa, and its implications for bioethics.

### Overview of origins and functions

ORCID was conceived to address inefficiencies in scholarly communication where researchers often needed help accurately and consistently linking their work with their identities. Specifically, it was established as a non-profit organisation with an overarching mission “to enable transparent and trustworthy connections between researchers, their contributions, and their affiliations by providing a unique, persistent identifier for individuals to use as they engage in research, scholarship, and innovation activities” [2]. Further elaborating on the mission of ORCID, Thomas, and colleagues underline that ORCID “is an international, interdisciplinary, nonprofit organisation with a twofold goal: provide an open registry of unique identifiers for researchers and work with the scholarly community to ensure that this persistent identifier is embedded in research workflows and becomes a core part of the metadata associated with works and activities” [3]. The ORCID initiative has significantly strengthened a unified system for researcher identification essential in the era of increasing academic databases, scientific publication platforms, international research collaborations, and funding agencies.

ORCID assigns a unique alphanumeric identifier (16-digit number) to each researcher and helps them link their scholarly works and grants on their profile, including their publications, affiliations, funding awards, and peer review activities. This identifying system mainly allows them to distinguish their work from others with similar names and affiliations. Furthermore, it is a centralised system for aggregating and showcasing researchers' scholarly contributions [2, 4]. Moreover, researchers can link their ORCID to other identifiers such as, for example, Scopus IDs,

ResearcherID, and even institutional identifiers, thereby ensuring integration of their ORCID records across different scholarly activities and research platforms. Such a system enhances the visibility and discoverability of researchers' work and facilitates a more accurate citation of literary works [5].

Since its establishment, ORCID has been acknowledged as a crucial contributor to scientific quality and integrity. This recognition is evident in various actions taken by publishers. For example, in January 2016, seven significant publishers signed ORCID's Open Letter and mandated authors to include an ORCID ID when submitting manuscripts [5]. One hundred twelve journals and publishers have signed the Open Letter and require ORCID IDs for authors [6]. Moreover, over 7,000 journals now collect ORCID IDs from corresponding authors through manuscript submission systems, and such journal requirements reportedly drive 75% of new ORCID registrations [6]. As of 2019, 5,957,040 ORCID IDs were embedded globally in more than 500 systems [5].

### **ORCID in Sub-Saharan Africa**

The adoption of ORCID in Sub-Saharan Africa (SSA) reflects the region's increasing recognition of research visibility and collaboration in advancing scientific knowledge. Although ORCID was initially concentrated in high-income countries, its reach has expanded to include researchers and institutions across SSA, partly driven by collaborations between funding agencies, academic institutions, and others. Concerning the developments of ORCID in Africa, Matthew Buys, ORCID's Regional Director for Europe, Middle East, and Africa, said the following in 2017:

*“Compared with the early 2016, there's now a much better understanding of what ORCID is all about. Crossref was already well known in the region as the persistent ID for content, and ORCID is now equally well known as the persistent ID for individuals. In 2016, traffic to the ORCID registry from MEA doubled, so it's not just that more people have heard of us; they are also registering for and using an ID. Hundreds of journals in Africa use Open Journal Systems (OJS), so a key development in 2016 was their improved integration of ORCID. Critically, OJS is now authenticating ORCID IDs, which improves the user experience of connecting their ORCID ID and*

*creates trust in the metadata. The connection of our two systems is really important in this region.” [7]*

Several initiatives have been launched to promote the uptake of ORCID in Africa, including awareness campaigns and workshops in different parts of the region, including participation in the SPARC Africa Symposium, eResearch, and eko-konnect 2020 [8]. Moreover, organisations such as the African Academy of Sciences (AAS), the Consortium for Advanced Research Training in Africa (CARTA), and the Alliance for Accelerating Excellence in Science in Africa (AESA) have played instrumental roles in advocating for ORCID adoption and providing support to researchers and institutions in implementing ORCID systems [8]. As of 2019, there were 44 ORCID member institutions and 20 integrations (organisations integrating their institutional systems with the ORCID Registry) in the Middle East and Africa [9].

ORCID has employed various successful measures to reach researchers and institutions in the Global South, including SSA. The Global Participation Fund (GPF) is a notable effort that “has been developed to remedy gaps in ORCID participation from organisations in the Global South, especially in countries with low- and lower-middle-income economies (as defined by the World Bank)” [10]. This programme offers grants for community development and outreach that aim to support the establishment of ORCID Communities of Practice and consortia, as well as grants to facilitate participation in ORCID through software development and documentation creation [10]. The growth of ORCID in SSA offers regional researchers a platform to increase their visibility and opportunities for (international) collaboration and funding. Furthermore, for institutions and funding agencies in the region, it facilitates more accurate tracking of research outputs, thereby enhancing research evaluation and assessment processes.

### **Implications of ORCID's work for bioethics**

ORCID plays a crucial role in promoting ethical research practices, particularly within the field of bioethics. Its implications are far-reaching and multifaceted, touching on various aspects of research integrity and transparency [11]. ORCID enhances research integrity by providing a persistent identifier that accurately accredits scholarly outputs to individual researchers [12, 13]. This system addresses several ethical concerns, including proper authorship attribution,

prevention of misconduct such as ghostwriting and honorary authorship, and increased accountability in research by creating a clear trail of a researcher's contributions over time. By linking researchers to their scholarly work, ORCID improves transparency and trust in science. Journals and publishers can verify authors' identities more efficiently, reducing the likelihood of authorship disputes, ghostwriting, and honorary authorship. Transparency [11], a key ethical principle in research, is significantly bolstered by ORCID. By making researcher profiles and contributions openly accessible, ORCID aligns with the principles of open science, which is increasingly emphasized in bioethics. ORCID profiles can include information about funding sources and affiliations, aiding in the transparent disclosure of potential conflicts of interest, a critical ethical consideration in bioethics research.

The interdisciplinary nature of bioethics, often requiring collaboration across diverse domains such as medicine, law, philosophy, and social sciences, is well-supported by ORCID. It facilitates connections between researchers from different disciplines, potentially leading to more comprehensive and ethically robust research projects [14]. ORCID also allows researchers to showcase contributions beyond traditional publications, such as dataset creation or peer review activities, which are valuable in interdisciplinary bioethics work. ORCID's unique identifiers can also support ethical data management and sharing practices in bioethics research. By providing a reliable way to attribute research outputs to individual researchers, ORCID can help ensure proper credit and accountability for data collection, analysis, and dissemination [14]. This, in turn, can enhance transparency and responsible data practices, which are crucial for upholding ethical standards in bioethics research. ORCID contributes to data ethics in research by clearly attributing data authorship, an increasingly important ethical consideration in the era of big data and open data initiatives in biomedical research. ORCID can be used to track and verify researchers' agreements to data use policies or consents for the use of their information in meta-research.

For institutions and funding agencies, ORCID facilitates more accurate tracking of research outputs, enhancing research evaluation and assessment processes. This can lead to more equitable and transparent mechanisms for evaluating the research contributions of bioethics scholars, promoting fairness and accountability in the academic system. ORCID can play a

significant role in improving the ethics review process. Ethics committees can use ORCID to identify and verify the qualifications of potential reviewers, ensuring appropriate expertise for the ethical review of research proposals. ORCID can also track researchers' completion of ethics training or their history of ethical conduct in research. In the realm of publication ethics, ORCID helps reduce duplicate publication through clear attribution of work. When ethical issues arise post-publication, ORCID's persistent identifiers can ensure that corrections or retractions are properly attributed and tracked across different platforms. ORCID also promotes equity in research recognition by addressing name disambiguation issues and providing a standardized system of identification that can help researchers from underrepresented regions or institutions gain visibility in the global bioethics community.

ORCID supports the ethical imperative of research reproducibility. ORCID profiles can link researchers to datasets, protocols, and other research resources, facilitating reproducibility efforts. By providing a persistent record of a researcher's work over time, ORCID can help in understanding the evolution of research methodologies and ethical approaches in bioethics. ORCID's work has significant implications for enhancing ethical practices in bioethics research. By promoting transparency, integrity, collaboration, and equitable recognition, ORCID aligns closely with the ethical principles that are fundamental to the field of bioethics. As ORCID continues to evolve and be adopted more widely, its potential to support and enhance ethical research practices in bioethics is likely to grow, making it an increasingly valuable tool for the bioethics community.

## **OBJECTIVES**

### **Primary Objective**

The primary objective of this landscape analysis was to comprehensively evaluate the presence, utilisation, and implications of the Open Researcher and Contributor ID (ORCID) within the bioethics research community in Sub-Saharan Africa. This assessment aimed to provide insights into the current state of ORCID adoption, identify challenges, and explore opportunities for enhancing its integration into the region's bioethics landscape.

## Secondary Objectives

1. Identify key stakeholders, including researchers, institutions, funding agencies, and publishers involved in bioethics research in Sub-Saharan Africa who could benefit from ORCID integration.
2. Investigate the barriers hindering ORCID adoption and explore potential opportunities for promoting its utilisation within the bioethics community.
3. Assess the extent to which ORCID is utilised among bioethics researchers and institutions in Sub-Saharan Africa.
4. Provide recommendations for enhancing ORCID awareness, adoption, and integration within Sub-Saharan African bioethics research.

## Research Questions

1. What is the current awareness and understanding of ORCID within the Sub-Saharan African bioethics community?
2. What are the main barriers hindering the adoption and integration of ORCID in bioethics research within the region?
3. How extensively is ORCID utilised among researchers, institutions, and organisations involved in bioethics research in Sub-Saharan Africa?
4. What strategies and initiatives can be implemented to overcome barriers and promote the widespread adoption of ORCID within the bioethics community?

This landscape analysis, using a mixed-methods approach combining qualitative and quantitative data collection methods, aimed to provide valuable insights into the current status of ORCID within the bioethics community of Sub-Saharan Africa. The findings from this assessment are expected to inform future initiatives and strategies aimed at promoting ORCID adoption, enhancing research visibility, integrity, and collaboration, and advancing ethical research practices within the region's bioethics landscape.



## METHODOLOGY

### Study population

The study population for this assessment protocol encompassed a diverse group of stakeholders within the bioethics community in Sub-Saharan Africa. This includes bioethics and research ethics committee members, undergraduate and postgraduate students of bioethics disciplines, and researchers within the discipline. The choice of this study population was guided by the aim of understanding the adoption, implementation, and implications of ORCID for ethical research practices in the region.

#### *Diversity and Representation*

The study ensured representation from various countries across Sub-Saharan Africa to capture a comprehensive perspective. Recognising the region's vast cultural, economic, and academic diversity, the study aims to include participants from various backgrounds to reflect the different experiences and perspectives related to ORCID's implementation.

#### *Role and Experience*

The study population has been further segmented based on roles and experience within the field of bioethics:

- **Bioethics and Research Ethics Committee Members**
- **Undergraduate and Postgraduate Students of Bioethics Disciplines**
- **Researchers and Academics in Bioethics Discipline**

#### *Engagement with ORCID*

Participants were also categorised by their level of engagement with ORCID:

- **Active Users:** Individuals actively use their ORCID iD in research and academic activities.
- **Aware but Non-users:** Those who know ORCID but do not actively use it.
- **Unaware of ORCID:** Individuals are currently unaware of ORCID and its potential benefits.

This stratification helped identify barriers to ORCID adoption and opportunities for enhancing its visibility and utility among bioethics professionals in Sub-Saharan Africa.

## **Eligibility criteria**

To ensure the integrity and relevance of this programmatic assessment focused on the adoption, implementation, and implications of ORCID for bioethics in Sub-Saharan Africa, specific eligibility criteria have been established to select participants who are deeply engaged in or have a thorough understanding of the bioethics discipline within the region, thereby contributing valuable insights to the study.

### ***Inclusion Criteria***

- **Role and Discipline:**
  - Members of bioethics or research ethics committees in Sub-Saharan Africa.
  - Undergraduate and Postgraduate students enrolled in bioethics disciplines.
  - Researchers or academics specialising in bioethics or related fields.
- Participants must reside in or be affiliated with an institution in Sub-Saharan Africa, ensuring that the assessment captures insights pertinent to the regional context.
- **Engagement with ORCID:** Participants are categorised by their engagement with ORCID as follows:
  - Holders of an active ORCID iD used in their research and academic endeavours.
  - Individuals who are aware of ORCID but have yet to use it actively.
  - Individuals with no prior knowledge of ORCID to understand awareness levels and barriers to adoption.
- Participants must be proficient in English, French, or Portuguese. This inclusion ensures that participants can comprehend the study materials and engage meaningfully in the assessment process.
- Participants must willingly provide informed consent, recognising the study's purpose, the voluntary nature of their involvement, and their right to withdraw at any stage.
- Participants must be at least 18 years of age to ensure they can consent and participate autonomously in the assessment.

### **Exclusion Criteria**

- Individuals not involved in bioethics or research ethics and lacking academic or professional engagement in these areas will be excluded to maintain the focus and relevance of the assessment.
- Individuals residing outside Sub-Saharan Africa or not affiliated with a local institution will be excluded to ensure the assessment's findings are region-specific and relevant.
- Those unable or unwilling to provide informed consent or who do not acknowledge the assessment's voluntary nature will be excluded from upholding ethical standards.
- Individuals lacking sufficient proficiency in English, French, or Portuguese to understand the assessment materials and provide informed responses will be excluded. Adequate language proficiency is essential for complete understanding and engagement with the assessment process.

### **Sampling strategy**

The study leveraged existing databases from the BCA-WA-ETHICS I & II projects, the Africa Bioethics Network, and the African Journal of Bioethics, containing contacts for approximately 1,500 bioethics stakeholders across Sub-Saharan Africa. These databases offered a rich diversity of potential participants regarding educational and professional seniority, gender, nationality, affiliation, language, and sub-disciplines within bioethics, ensuring a broad representation of perspectives on ORCID's role in bioethics research and practice.

The study adopted a mixed approach to sampling and recruitment, combining purposive sampling with a snowball technique. Initial contacts drawn from the databases above were the starting point, chosen for their potential to provide varied insights based on their differing roles, experiences, and levels of engagement with ORCID.

- **Purposive Sampling:** Key individuals well-recognized within the bioethics community for their contributions or roles were directly approached to participate in the study. This ensures that the sample includes a breadth of influential voices and perspectives.

- **Snowball Sampling:** Participants were encouraged to forward the survey to other potential participants who meet the eligibility criteria, expanding the study's reach through their professional networks.

### **Sample size**

One hundred three individuals completed the quantitative surveys in English, French, and Portuguese. A selection of 6 participants were selected for qualitative in-depth interviews (IDIs) to enable a detailed exploration of individual experiences while remaining manageable for in-depth analysis.

### **Data collection**

A mixed-methods approach to data collection was utilised to effectively explore the adoption, implementation, and implications of ORCID in bioethics across Sub-Saharan Africa. This approach allowed for integrating quantitative and qualitative data, providing both breadth and depth to the assessment. Below is a detailed outline of the data collection methodology, including variables and themes, and the data collection tools for qualitative and quantitative components.

### **Quantitative Variables**

#### *Demographic Information*

- **Country:** Participants selected their country of residence from a list of Sub-Saharan African countries. This allowed for regional comparisons and understanding of geographic variations in ORCID adoption.
- **Age:** Age was collected in ranges (e.g., 18-24, 25-34, etc.) to maintain confidentiality while allowing for generational insights into ORCID use and perceptions.
- **Gender:** Participants had options to identify their gender, including woman, man, gender non-binary, other, and a prefer not to say option.
- **Professional Role:** This variable includes predefined categories such as bioethics committee member, undergraduate student, postgraduate student, and researcher. An "other" option with a free-text field will also be provided for unlisted roles.

- **Field within Bioethics:** Given the interdisciplinary nature of bioethics, participants were asked to specify their primary area of focus within the discipline (e.g., medical ethics, research ethics, public health ethics) using a dropdown menu or a free-text field for areas not listed.

#### *ORCID Awareness*

- **Level of Awareness:** Participants were asked to indicate their level of awareness regarding ORCID through options such as "Unaware," "Aware but not using," and "Actively using." This helped gauge the overall familiarity with ORCID within the bioethics community.

#### *ORCID Usage*

- **Frequency of Use:** To understand engagement levels, participants were asked to report how often they use their ORCID IDs.
- **Purposes of ORCID Use:** A checklist of common ORCID uses (e.g., for publications, grant applications, academic profiles) was provided. Participants also had an "other" option with a free-text response to describe additional uses not listed.

#### *Barriers to ORCID Adoption*

- **Perceived Barriers:** Participants were presented with a list of potential barriers to obtaining or using an ORCID ID (e.g., lack of awareness, perceived complexity, uncertainty about benefits). They would select all that apply and have an option for free-text responses to identify other barriers not listed. This approach helped identify critical obstacles to address to increase ORCID adoption.

#### *Benefits of ORCID*

- **Perceived Benefits:** Similar to barriers, a checklist of potential benefits (e.g., enhancing research visibility, facilitating collaboration, improving research integrity) was provided. Participants would select the benefits they perceive as most significant, with space for free-text responses to describe other benefits not listed.

Participants were assigned a Unique Identification Number (UIN) that anonymised their results. No identifying information will be collected.

### **Qualitative Themes**

#### *Experiences with ORCID*

- **Personal Narratives:** Participants were encouraged to share their journeys in becoming aware of and deciding whether to use ORCID. The focus was on capturing stories that highlight individual motivations, the decision-making process, and any challenges faced during registration, setup, or use.
- **Motivations for Use or Non-use:** Probed the specific reasons that influenced participants to adopt ORCID or what deterred them. These included institutional requirements, the perceived value of ORCID in academic and research settings, or barriers that prevent adoption.
- **Challenges Encountered:** Asked about any difficulties participants have experienced with ORCID, such as issues with integration into existing systems, confusion over its purpose or benefits, or technical problems.

#### *Impact on Bioethics Research*

- **Enhancement of Research Visibility:** Discussed participants' perceptions of how ORCID has affected the visibility of their work within the bioethics community and beyond. It explored specific instances where ORCID facilitated new collaborations, citations, or recognition.
- **Facilitation of Collaboration:** Investigated how ORCID has impacted participants' ability to collaborate with peers, including the ease of finding collaborators and sharing work.
- **Influence on Ethical Practices:** Delved into whether and how participants believe ORCID contributes to ethical research practices in bioethics, such as through transparency in authorship and contributions, accountability, or other aspects.

### *Recommendations for Improvement*

- **Enhancing Adoption:** Solicited ideas and suggestions for increasing ORCID adoption among bioethics professionals in Sub-Saharan Africa. Focused on identifying actionable strategies that address the barriers and motivations discussed earlier.
- **Improving Utility:** Participants were asked for their input on how ORCID's utility for bioethics researchers could be improved.
- **Supporting Bioethics Community:** Explored specific ways ORCID or institutions can support the bioethics community in Sub-Saharan Africa, ensuring that ORCID meets this region's unique needs and challenges.

### **Ethical considerations**

It is imperative to clarify that this initiative is a programmatic assessment aimed at enhancing the understanding and implementation of ORCID within the bioethics community in Sub-Saharan Africa. As such, this assessment focused on the practical application and implications of ORCID for ethical research practices and stakeholder engagement within the field. Given its programmatic nature, this assessment did not constitute research in the traditional academic sense. Therefore, it was not subject to approval from the Institutional Review Board (IRB) or Ethics Review Committee (ERC). This distinction underscores the assessment's objective to inform and improve practice rather than to generate new, generalisable knowledge.

Despite the programmatic nature of the assessment, the utmost commitment to ethical standards was maintained throughout all stages of the initiative. Fundamental principles guiding this commitment included:

- **Informed Consent:** Before participation, all potential participants received comprehensive information about the assessment's purpose, the nature of their involvement, how their data will be used, and their rights as participants. This process ensured that consent was informed, voluntary, and documented, aligning with the best practices of ethical conduct.
- **Confidentiality:** Participant information was rigorously protected. Measures were implemented to ensure that personal data was securely stored and accessed only by authorised assessment team members.

- **Right to Withdraw:** Participants were informed of their right to withdraw from the assessment at any stage without any adverse consequences. This ensured that participation was entirely voluntary and respected individual autonomy.
- **Autonomy and Voluntariness:** Respecting the independence of all participants was central to this assessment. Participants were engaged as autonomous individuals with the right to make independent decisions regarding their participation. The voluntariness of the involvement was emphasised, ensuring that participants understood they were free to engage without coercion and could opt out at their discretion.
- **Transparency and Accountability:** Throughout the assessment, there was a commitment to transparency about the goals, methods, and outcomes. Feedback and findings were shared with participants and stakeholders in an accessible and understandable format, fostering a culture of accountability and continuous improvement.

## Data analysis

### *Quantitative data analysis*

Quantitative data collected from the online survey was subjected to a comprehensive statistical analysis to identify trends, patterns, and associations among demographic variables and responses related to ORCID's awareness, usage, barriers to adoption, and perceived benefits.

The findings from the quantitative analysis were interpreted in the context of the study's objectives. They highlighted key insights into ORCID's current state of adoption, the barriers encountered by bioethics professionals, and the perceived benefits of ORCID use. The analysis aims to inform the development of targeted recommendations for increasing ORCID adoption and enhancing its utility within the bioethics community in Sub-Saharan Africa.

This detailed report documented the results, incorporating tables, figures, and narrative descriptions to present the findings clearly and concisely. It is expected to serve as a valuable resource for stakeholders promoting ethical research practices and fostering collaboration within bioethics.



### Qualitative data analysis

The transcription of each interview was verbatim, capturing both verbal and non-verbal elements, and was verified for accuracy by a separate team member. Initial coding of the data was based on predefined themes from the interview guide, with emergent coding allowing new insights to surface, using Quirkos software for organisation. Codes were grouped to form potential themes through a thorough review process, ensuring they accurately reflected the data and were consistent across the dataset. Themes were validated through team discussions and possibly participant feedback, with each theme deeply analysed to capture its essence and named descriptively to reflect its significance. Finally, qualitative findings were integrated with quantitative data to provide a comprehensive understanding of ORCID’s impact on the Sub-Saharan African bioethics community, adding contextual depth to statistical patterns and enhancing the overall analysis with nuanced experiences and case studies.

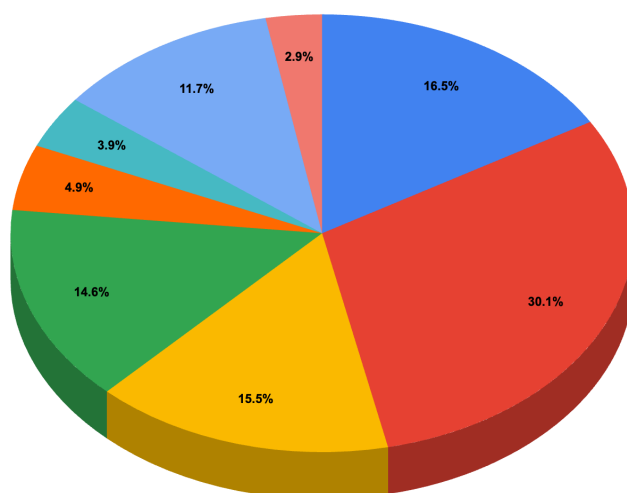
## RESULTS

### Demographic characteristics

The survey participants consisted primarily of male respondents (n = 72, 69.9%), followed by female respondents (n = 29, 28.2%) and a small number of non-binary individuals (n = 2, 1.9%).

In terms of age distribution, the most significant proportion fell within the 35 -44 age group (n = 45, 43.7%), with substantial representation also seen in the 25 - 34 age group (n = 33, 32%) and the 45 - 54 age group (n = 17, 16.5%). The age group least represented was 65 years and above (n = 1, 1%). Regarding career stages, most participants identified as early-stage researchers holding PhDs or equivalent degrees with less than ten years of experience (n = 31, 30.1%). This was followed by

senior researchers with ten or more years of experience (n = 17, 16.5%) and undergraduate bioethics students (n = 16, 15.5%).

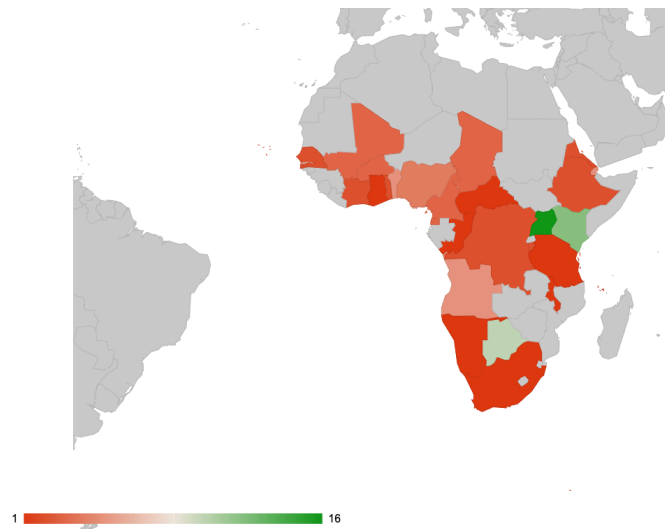


**Figure 1. Career stage distribution**

- Senior researchers (Researchers with 10+ years of experience)
- Early-stage researcher (up to PhD and under 10 years of experience)
- Undergraduate bioethics student
- Postgraduate bioethics student
- Bioethics university professor
- Research ethics committee member (institutional)
- Mid-stage researcher (PhD holders and postdoctoral researchers with under 10 years of experience)
- Research ethics committee member (national)

Participants also included members of national (n = 3, 2.9%) and institutional (n = 4, 3.9%) research ethics committees. In terms of fields of expertise, the largest contingent was from research ethics (n = 61, 31.1%), followed by medical ethics (n = 31, 12.8%), public health ethics (n = 26, 13.3%), and environmental ethics (n = 24, 12.2%). Other fields, such as disability ethics, educational sciences ethics, and one health and emergency research ethics, were represented by fewer participants.

The participants were distributed across various Sub-Saharan African countries. Uganda is represented by the most significant number of respondents (n = 16, 15.7%), followed by Kenya (n = 12, 11.8%). Botswana also shows notable representation (n = 10, 9.8%). The Gambia includes respondents (n = 6, 5.9%). Countries like Nigeria, Djibouti, Angola, and Benin each have (n = 5, 4.9%). A group of countries including Senegal, Mali, Ethiopia, Equatorial Guinea, Côte d'Ivoire, Eritrea, Chad, Burkina Faso, Cameroon, Congo (Democratic Republic), and Burundi are each represented by (n = 2 to 3, 2.0% to 2.9%). The least represented is Comoros with (n = 1, 0.97%).



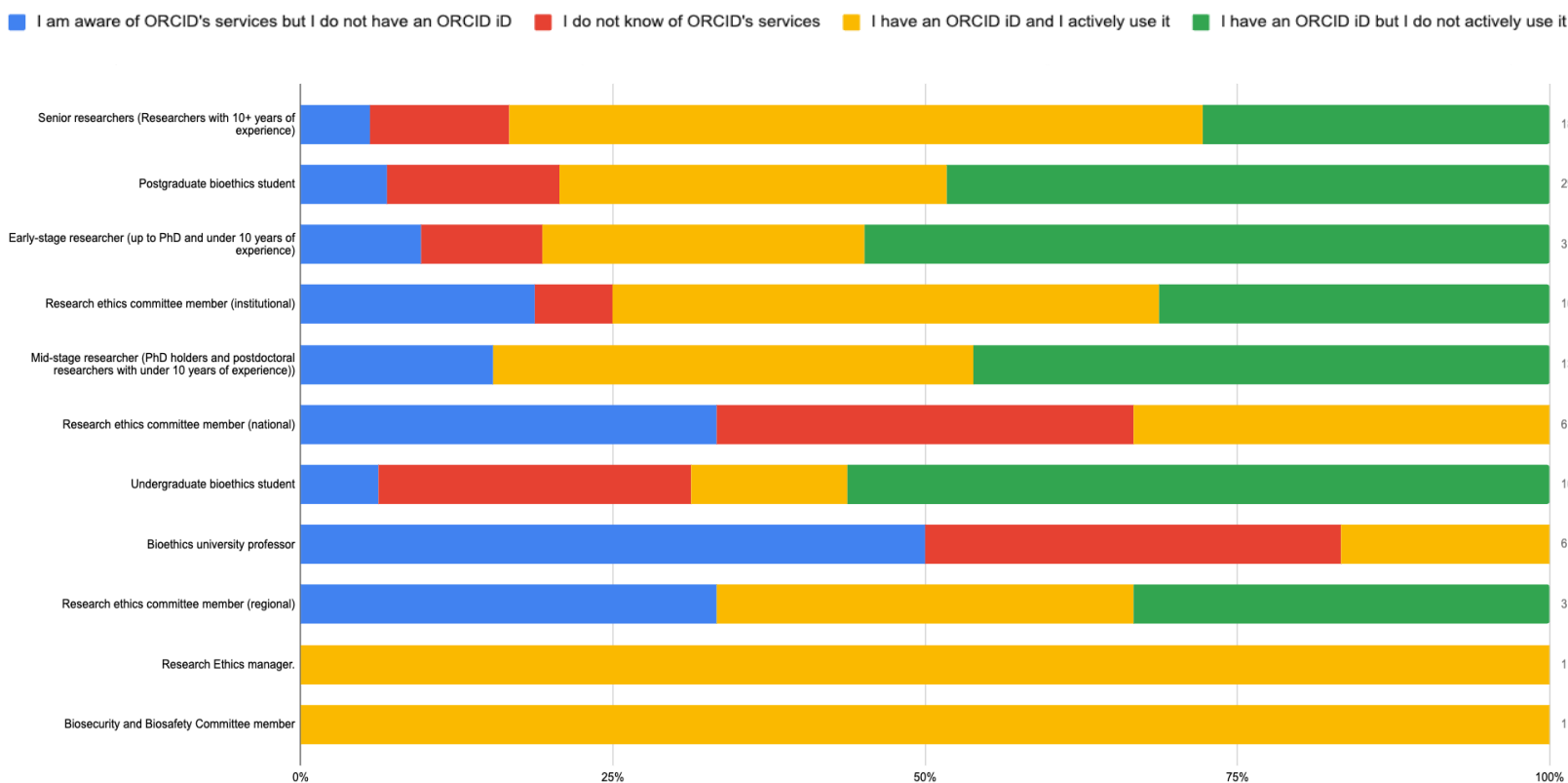
**Figure 2. Geographic distribution**

### **ORCID awareness and usage**

There were varied responses concerning awareness of and engagement with ORCID. Most participants (n = 41, 40.2%) indicated having an ORCID account but not actively using it, slightly more than those who use it regularly (n = 32, 31.4%). The remainder were either aware of ORCID but without an account (n = 13, 12.7%) or completely unaware (n = 16, 15.7%).

Among those with an ORCID account, the majority (n = 46, 63.9%) reported using it for journal and grant submissions, while 14 respondents (19.9%) regularly update their ORCID profiles with new work and activities. On the other hand, 11 respondents (15.3%) reported being unsure about how to use or engage with their ORCID account, and one respondent (1.4%) mentioned they had an ORCID account but had never used it.

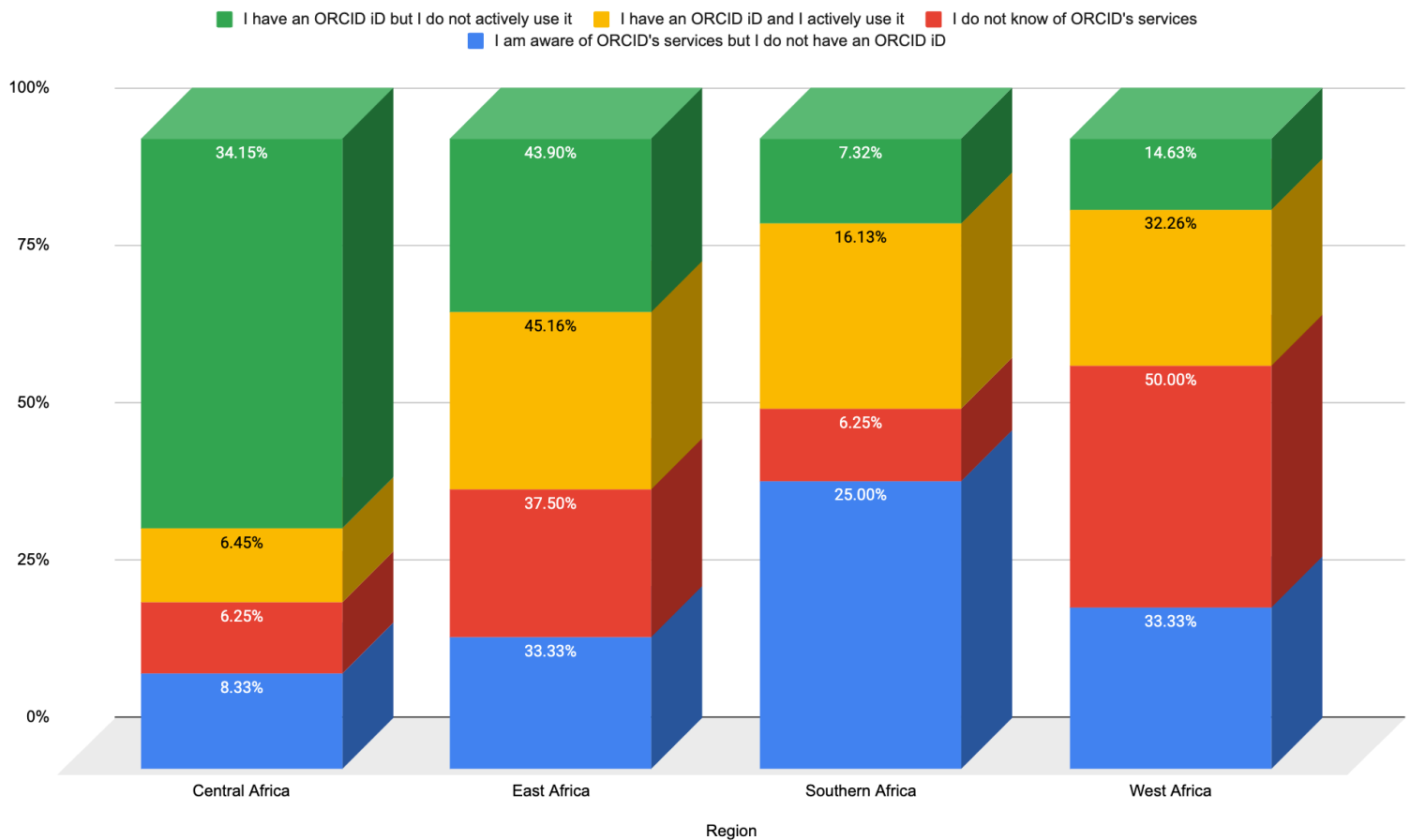
**Figure 3: Participants' awareness and usage of ORCID by their profession and career stage**



Awareness and usage of ORCID services were also varied across professional categories. Moreover, active usage was slightly higher in men (33.8%) than women (31.37%). Similarly, all Cape Verde, South Africa, and Tanzania participants reported active ORCID usage (100%). In terms of regional variation, we could also see that in Central Africa, 34.15% (n=6) actively use their ORCID ID, while 6.45% (n=1) have an ID but do not actively use it, and 8.33% (n=2) are aware

of ORCID’s services but do not have an ID. East Africa showed the highest engagement, with 45.16% (n=19) actively using their ID, 37.50% (n=16) aware but without an ID, and 6.25% (n=3) having an ID but not using it. In Southern Africa, 25% (n=3) actively use their ID, 6.25% (n=1) have an ID but are inactive, and 16.13% (n=2) are not aware of ORCID’s services. West Africa recorded 33.33% (n=10) active users, 14.63% (n=5) aware without an ID, and the highest unawareness at 32.26% (n=10).

**Figure 4. Geographically-distributed ORCID usage**



Some participants from the qualitative interviews narrated how they became aware of ORCID and slowly started using it. For example, one participant said:

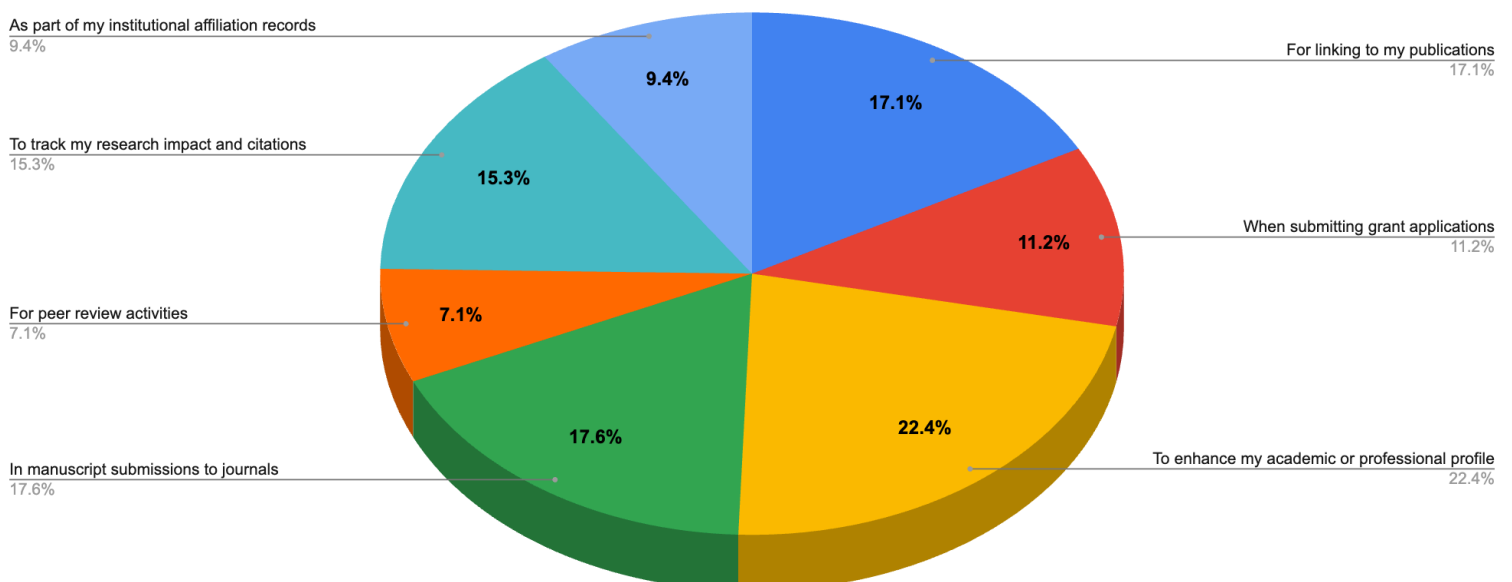
*"And while in the university, you know, when you are in school, your mind is very active. I was just searching, and then I fell into ORCID, and I registered. At that time, I did not even know what it meant. I just discovered that this is something that is good, but I couldn't really say how good it was."* National Research Ethics Committee Member

This reflects initial curiosity and spontaneous engagement only after fully comprehending ORCID's benefits, highlighting a gap in proactive awareness and educational outreach about ORCID's functions and advantages.

Respondents further elaborated on factors that would encourage them to use ORCID. A significant proportion of them (n = 36, 27%) indicated that detailed guidelines on the benefits of ORCID and how to use it would be a contributing factor. The remaining respondents underlined other factors such as workshops or webinars on how to integrate ORCID into academic workflows (n = 35, 27%), testimonies on the benefits of ORCID from other researchers in the same field (n = 31, 24%), assistance on registering for and setting up ORCID profile (n = 20, 15%), and availability of information on ORCID's data privacy and security policies (n= 9, 7%).

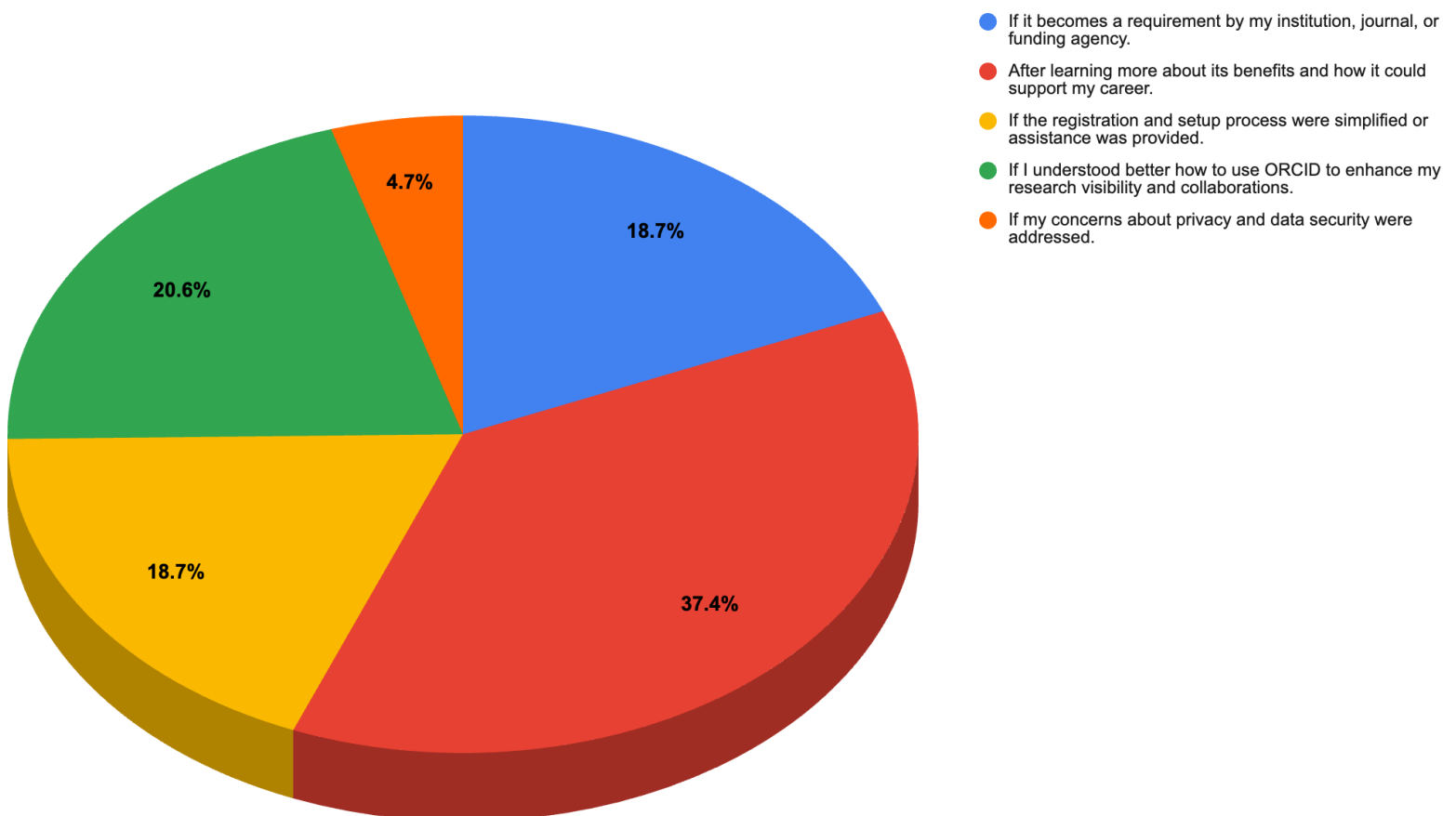
Furthermore, ORCID was used for diverse purposes, primarily to enhance academic or professional profiles (n = 76, 22.4%) and in manuscript submissions to journals (n = 60, 17.6%).

**Figure 5. Why bioethics stakeholders in SSA use ORCID**



Respondents identified various motivators for registering with ORCID, such as understanding its career benefits (n = 40, 37%), leveraging it for research visibility and collaborations (n = 22, 21%), institutional or journal requirements (n = 20, 19%), user-friendly registration processes or assistance (n = 20, 19%), and addressing concerns about data privacy and security (n = 5, 5%).

**Figure 6. What would motivate non-users to create an ORCID ID?**



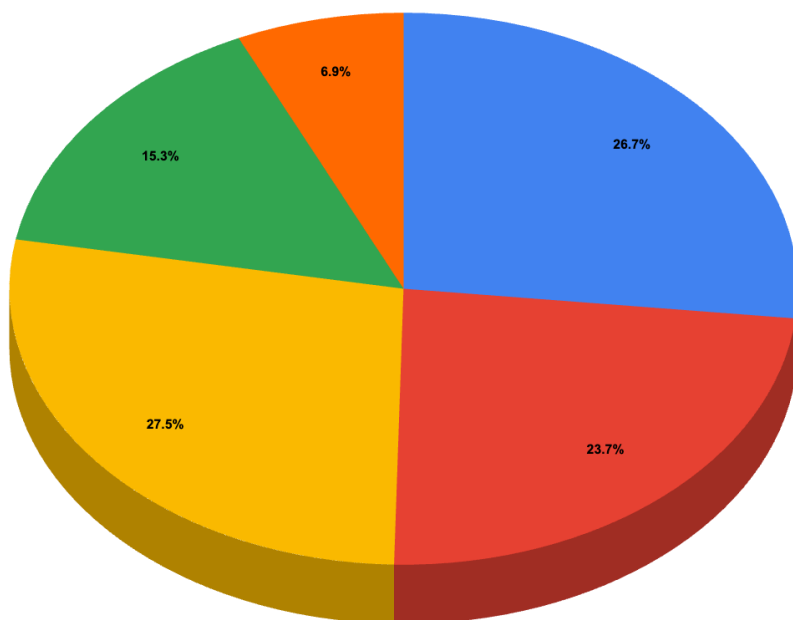
Further explaining the motivating factors for using ORCID, a participant in the qualitative interview summarises their initial encounter with ORCID and how that led to a realisation of ORCID's importance and subsequent registration for an ORCID iD:

*"When I came to encounter [ORCID] as a research assistant to one of my clients, I'm a consultant*

*in research as we speak. I operated a private firm in research. And this, of course, mostly narrows down to data management, from collection analysis and even dissemination. I can first close [encounter] ORCID from a client who's working on some paper, and it was required that he submits an ORCID iD. Now from then, I came to realize that actually I also needed one. I went through the website, I applied for one and got one."* Postgraduate Bioethics Student

This passage illustrates the participant's journey from discovering ORCID through client requirements to recognising its personal and professional utility.

Figure 6 below illustrates the various needs of non-ORCID users before they decide to register for an ORCID ID, according to a survey of respondents. The largest group, comprising 27.5% (n=36), indicated a need for detailed guides on the benefits of ORCID and how to use it effectively. Workshops or webinars about integrating ORCID into academic workflows were important for 26.7% (n=35) of the respondents. Testimonials from other researchers on how ORCID has benefited them were significant for 23.7% (n=31) of those surveyed. 15.3% (n=20) of respondents deemed assistance with registration and profile setup necessary.



benefited them were significant for 23.7% (n=31) of those surveyed. 15.3% (n=20) of respondents deemed assistance with registration and profile setup necessary.

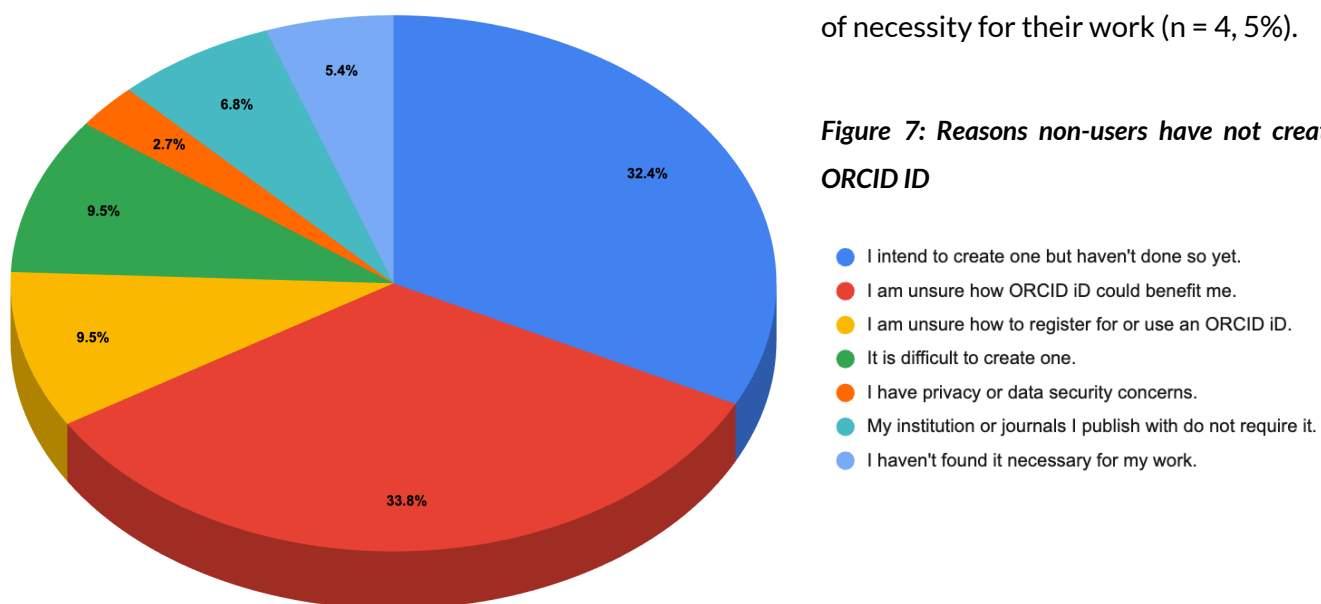
- Workshops or webinars about integrating ORCID into academic workflows.
- Testimonials from other researchers in my field about how ORCID has benefited them.
- Detailed guides on the benefits of ORCID and how to use it effectively.
- Assistance with registration and profile setup.
- Information on ORCID's privacy and data security policies.

**Figure 6. What kind of support do non-ORCID users need before getting an ORCID ID?**

Meanwhile, only 6.9% (n=9) felt they needed more information on ORCID's privacy and data security policies before obtaining an ORCID ID.

## Barriers to ORCID adoption

Some respondents were aware of ORCID but had not created an account for various reasons. The majority (n = 25, 34%) cited uncertainty about its benefits as the primary reason, followed closely by intentions to create an account but not yet doing so (n = 24, 32%). Others mentioned barriers such as not knowing how to register or use ORCID (n = 7, 9%), absence of institutional or journal requirements (n = 5, 7%), and perceived lack of necessity for their work (n = 4, 5%).



**Figure 7: Reasons non-users have not created an ORCID ID**

- I intend to create one but haven't done so yet.
- I am unsure how ORCID iD could benefit me.
- I am unsure how to register for or use an ORCID iD.
- It is difficult to create one.
- I have privacy or data security concerns.
- My institution or journals I publish with do not require it.
- I haven't found it necessary for my work.

Participants in the qualitative interviews also elaborated on the barriers to ORCID adaptation. For example, one participant expressed their concern about the lack of knowledge as follows:

*"The knowledge about ORCID is very, very, very insufficient, many people don't know about it".*  
National Research Ethics Committee Member

More awareness about ORCID needs to be created among early and mid-stage researchers. In addition to a lack of knowledge, another participant voiced their concern about using ORCID:

*"I have difficulty, it (ORCID) is difficult".* Bioethics Researcher

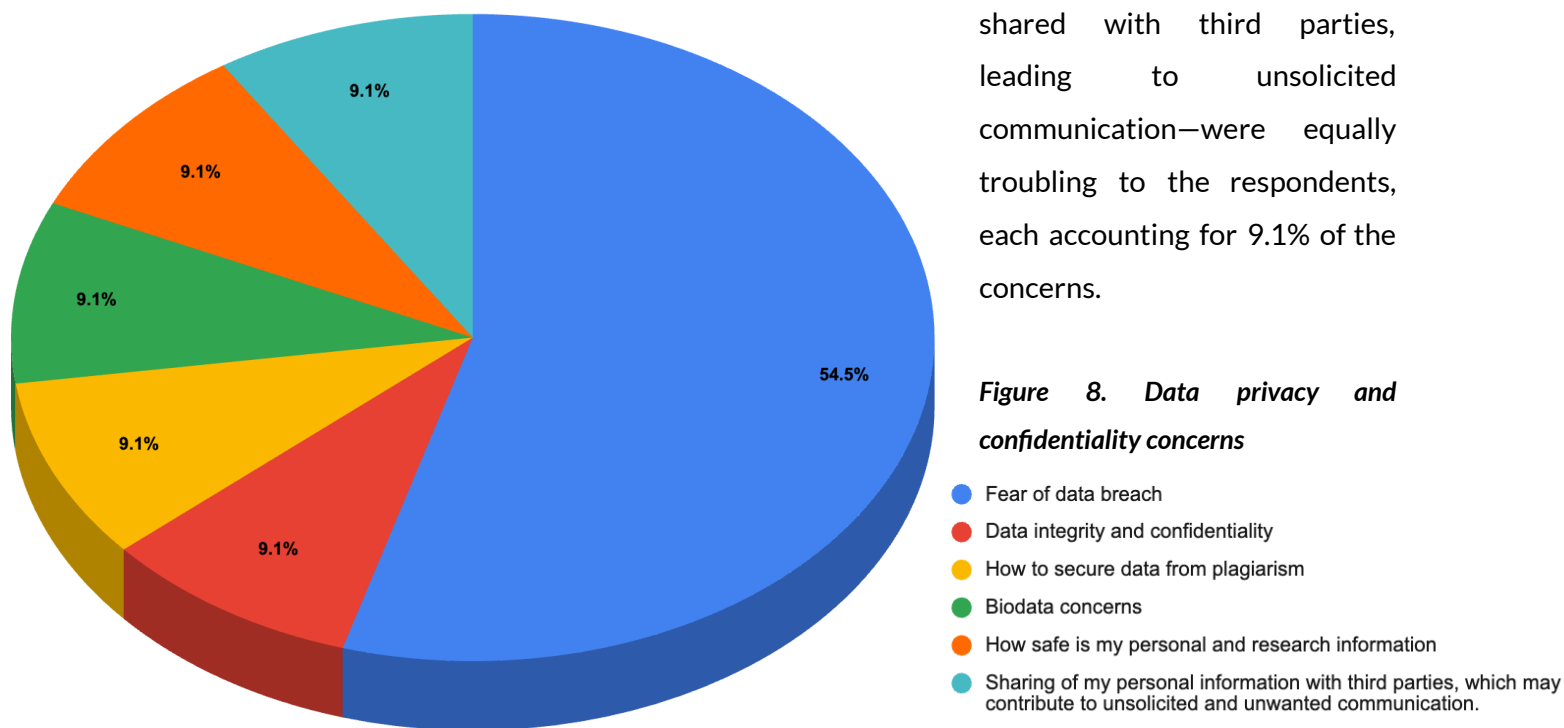


Similarly, ORCID was perceived as complicated by another participant:

*"Some [peers] feel that it is too complicated. [They think] I don't think I need that. They feel that sometimes, they tell me something like: this is too complicated."* Bioethics Researcher

Another issue that came up was data privacy and confidentiality. While the majority (74.4%) reported no problems, the remaining (25.6%) expressed apprehension. Out of the 25.6% who had data protection concerns, a majority, 54.5%, were primarily worried about the integrity and confidentiality of their data. Each of the remaining concerns—fear of data breaches, securing data against plagiarism, biodata issues, the safety of personal and research information, and the risk of

personal information being shared with third parties, leading to unsolicited communication—were equally troubling to the respondents, each accounting for 9.1% of the concerns.



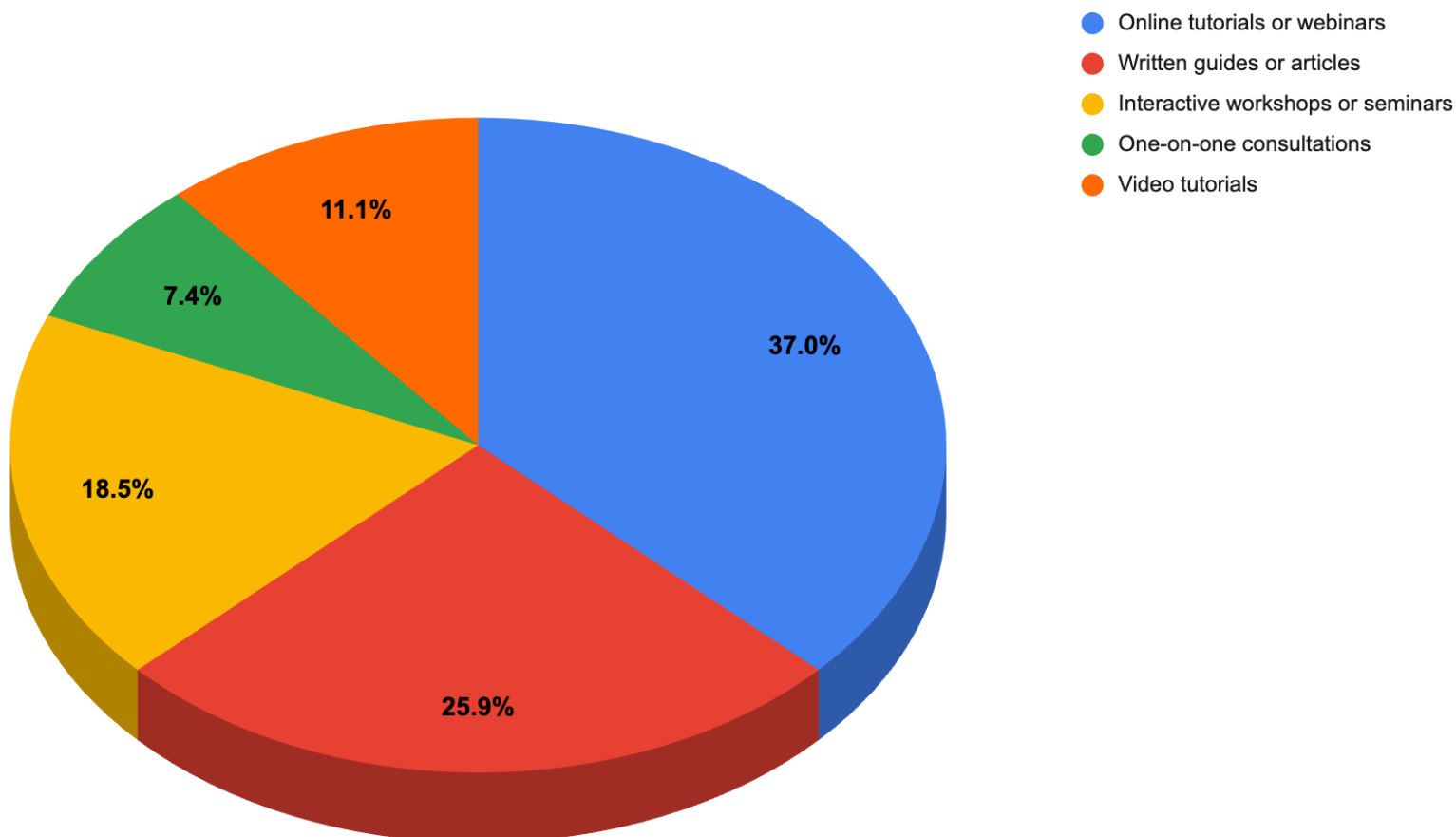
**Figure 8. Data privacy and confidentiality concerns**

### Perceived benefits of ORCID and user satisfaction

A significant number of respondents (n = 68, 95.8%) expressed strong interest in learning more about ORCID and its benefits, while a minority (n = 3, 4.2%) showed no interest. Those interested preferred various learning methods, including online tutorials or webinars (37%), written guides or

articles (25.9%), interactive workshops or seminars (18.55%), video tutorials (11.1%), and one-on-one consultations (7.4%).

**Figure 9. Preferred formats for ORCID outreach and education efforts**



The majority of respondents recognised numerous benefits associated with using ORCID. They appreciated its ability to provide a unique and persistent identifier that distinguishes their work and prevents misattribution. The system's capacity to streamline research management and facilitate accurate tracking of publications was valued. More specifically, enhanced visibility (n = 23, 45.1%), improved networking opportunities (n = 7, 13.7%), simplified publication and grant application processes (n = 3, 5.9%), and enhanced credibility and attribution of one's research (n =

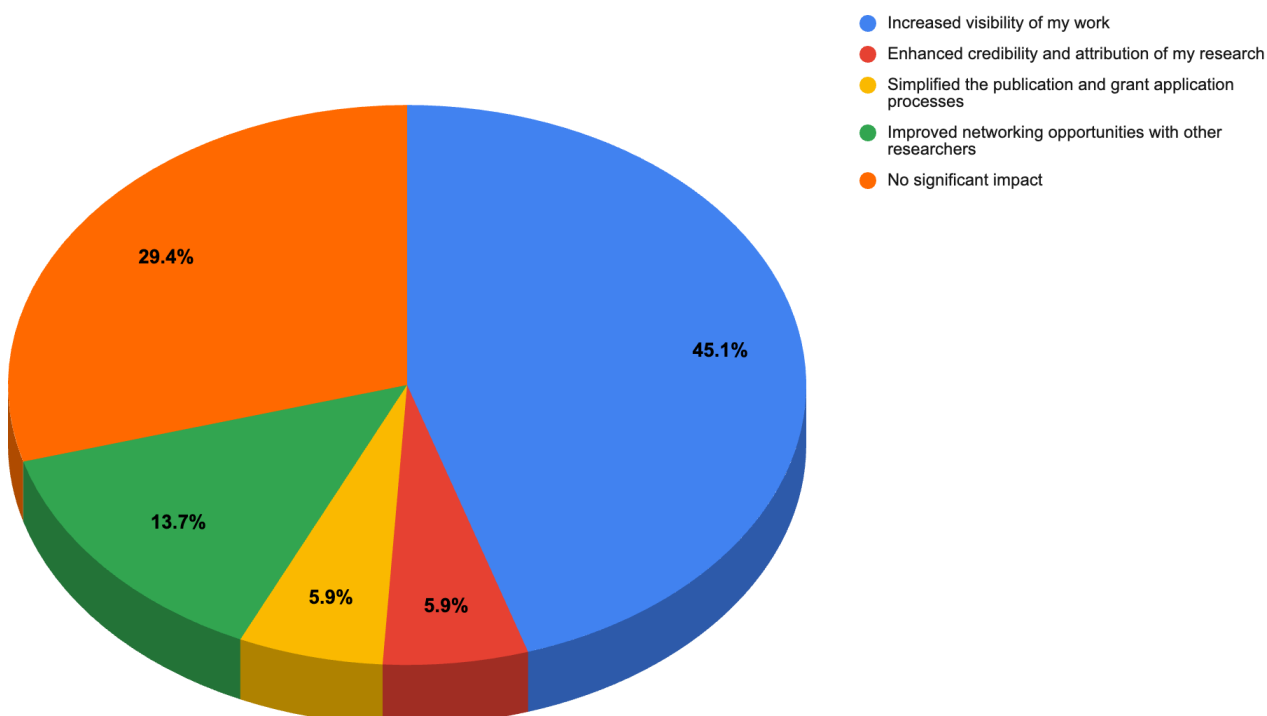
3, 5.9%) were the frequently mentioned advantages by the majority of the participants. Similarly, these benefits were echoed by one participant in the qualitative interviews who noted:

*"It [ORCID] assembles all your publications on one platform. And especially for those of us who write CVs, instead of listing your publication, you rather just give your account and whoever wants to check can be able to check and understand what you have published so far."* Research Ethics Committee Member

This respondent appreciates ORCID's ability to consolidate professional achievements in a single accessible location, enhancing the visibility of academic work and simplifying professional documentation like CVs. The remaining participants in the quantitative survey (n = 15, 29.4%) expressed that there are no significant impacts of using ORCID (see Figure 4), which is in line with one qualitative interviewee who said:

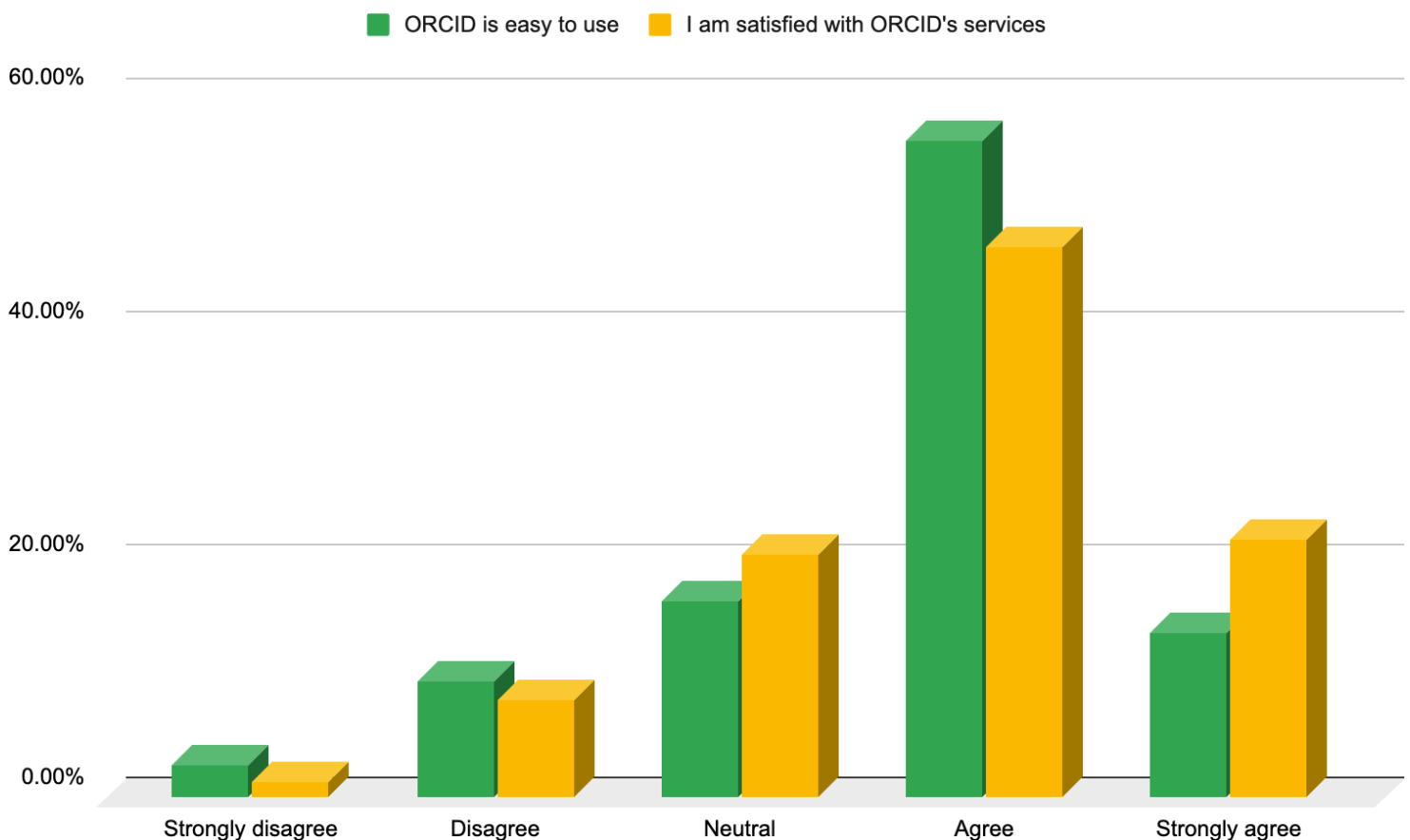
*"I create my host code. That's why I didn't use it because I don't know where it is very important how to use it."* Bioethics Researcher

**Figure 10. Perceptions of the benefits of ORCID**



The survey results on the ORCID ID's ease of use and overall satisfaction reveal a generally positive response from users. Specifically, in terms of ease of use, 2.8% of users rated it as very difficult (1), 9.9% as somewhat difficult (2), 16.9% found it moderately easy (3), 56.3% rated it as easy (4), and 14.1% found it very easy (5). For overall satisfaction, 1.4% of respondents were completely dissatisfied (1), 8.3% were mostly dissatisfied (2), 20.8% were neither satisfied nor dissatisfied (3), 47.2% were satisfied (4), and 22.2% were delighted (5).

**Figure 11. ORCID satisfaction and ease of use**



## DISCUSSION AND RECOMMENDATIONS

### Key findings and interpretation

The ORCID landscape analysis and stakeholder identification report provide crucial insights into the current state of ORCID adoption within the Sub-Saharan African bioethics community, revealing both enthusiasm for and barriers to more widespread use.

The findings underscore ORCID's growing importance in maintaining standardised researcher profiles essential for publications and collaborations. The increasing reliance on digital platforms for scholarly communications means ORCID's role in enhancing visibility and credibility is becoming crucial. This narrative helps demonstrate the practical benefits of adopting ORCID to the community, potentially increasing its perceived value and encouraging broader usage. Despite the enthusiasm, there remains a strong demand for clear and useful information outlining ORCID's functional advantages, with a specific focus on data integrity and safeguarding confidential information. While there is interest in logistical support, the primary concern among users revolves around how well their personal and professional data is protected, highlighting the need for robust data security measures. A significant barrier to wider ORCID adoption is the perception that the platform is overly complex or not user-friendly. Some researchers find the interface unnecessarily complicated, which may stem from a lack of understanding of its benefits or from an interface that isn't intuitive for all users. Addressing this involves simplifying the user interface and providing targeted training sessions that showcase how ORCID can streamline the research process, boost visibility, and facilitate easier collaborations and funding opportunities.

There seems to be a notable gap between those who register for an ORCID ID and those who actively use it. This suggests that while registration numbers might be high, effective utilisation is lacking, pointing to the need for more targeted educational resources that help users understand how to make the most of their ORCID profiles. Although most users view ORCID positively, as evidenced by the high percentages of satisfaction and perceived ease of use, a small but significant portion of the community reports difficulties and dissatisfaction. These insights suggest that while ORCID benefits many, a crucial segment of the user base struggles with its application,

necessitating focused improvements to meet these users' needs more effectively. Furthermore, the difficulty that some users experience represents a broader issue prevalent in digital tool adoption—users are often provided with tools but not the necessary training or resources to use them effectively. This scenario calls for a proactive approach to user education and support to bridge the gap between tool availability and practical use.

### **Stakeholder Identification**

The identification of key stakeholders is pivotal to understanding the dynamics of ORCID adoption within the Sub-Saharan African bioethics community. By outlining the roles and engagement levels of these stakeholders, we can better tailor outreach, training, and support initiatives to enhance ORCID's utility and impact. The primary stakeholders identified included bioethics researchers at various career stages, ethics committee members, academic and research institutions, funding agencies, publishers, and students at the graduate and undergraduate levels.

Researchers, particularly early-stage and senior researchers, appeared to be central stakeholders according to the findings. Their interaction with ORCID varied significantly depending on their career stage and disciplinary focus. Early-stage researchers, often more receptive to new technologies, would likely benefit from targeted initiatives that enhance their understanding and use of ORCID. In contrast, senior researchers, who might be less acquainted with digital tools, might require tailored support to integrate ORCID into their existing research workflows. However, our findings, although not generalizable, seemed to suggest that senior researchers were more acquainted with ORCID and had a more widespread adoption and usage of ORCID than earlier-stage researchers. Furthermore, the specific needs of researchers in diverse fields such as medical ethics, public health ethics, and environmental ethics suggest the necessity for discipline-specific ORCID training and awareness programs.

Bioethics committee members, both at national and institutional levels, play a crucial role as gatekeepers and advocates of ethical research practices. Their endorsement and use of ORCID can significantly influence its acceptance and integration within research ethics frameworks. By

involving these members in the formulation and dissemination of ORCID policies, their capacity as stakeholders to enforce compliance and promote the system's benefits across academic and research institutions can be effectively leveraged. As is the case with many grantmakers and funding agencies, bioethics committees could request an ORCID ID from researchers who are submitting their research protocols for ethics approval and could engage actively with ORCID to spread awareness about ORCID and the benefits it offers to researchers.

Academic and research institutions form the backbone of the ORCID ecosystem, providing the infrastructural and policy framework necessary for its implementation. These institutions can facilitate the widespread adoption of ORCID by incorporating it into administrative and research submission systems, thus standardizing its use across academic procedures. Collaborations with funding agencies and publishers also highlight the interdependence of these stakeholders in promoting ORCID. Publishers' requirement for ORCID IDs during manuscript submissions and funding agencies' requirement during grant applications underscores their influential role in encouraging researchers to maintain active ORCID profiles.

Moreover, the inclusion of undergraduate and postgraduate bioethics students as stakeholders not only addresses the current landscape but also the future of ORCID's integration in research practices. Engaging with students early in their academic careers ensures that they recognize the value of ORCID, fostering a culture of consistent use as they progress into professional roles.

In terms of the geographic regions identified as relevant to the stakeholder identification in the Sub-Saharan African bioethics community, we primarily see Uganda and Kenya, which were notably represented in the survey data. These countries are represented as critical stakeholders due to their substantial participation in the survey and by virtue of being active centres of bioethics research and education in the region.

Additionally, countries like Botswana, The Gambia, Nigeria, Djibouti, Angola, and Benin also played significant roles, each contributing a measurable number of respondents to the study. Their involvement is crucial for understanding the broader geographic spread and diverse contexts

within which ORCID operates in Sub-Saharan Africa. This geographic diversity highlights the need for tailored approaches in promoting ORCID's adoption that consider specific national and regional academic infrastructures, digital literacy levels, and research cultures.

Moreover, the lesser-represented countries, such as Comoros and others such as Senegal, Mali, Ethiopia, Equatorial Guinea, Côte d'Ivoire, Eritrea, Chad, Burkina Faso, Cameroon, Congo (Democratic Republic), and Burundi with minimal response rates, indicate areas where outreach and engagement efforts might be increased. These regions may benefit from targeted awareness campaigns and collaborations to boost understanding and integration of ORCID in their academic and research environments.

This assessment underscores the diverse yet interconnected roles that different groups play within the ORCID ecosystem through comprehensive stakeholder identification. Effective engagement with these stakeholders is essential for the sustained adoption and beneficial use of ORCID in enhancing research visibility, integrity, and collaboration within the Sub-Saharan African bioethics community.

### **Limitations**

The results revealed significant insights but also faced several limitations. The career stage distribution of survey participants was predominantly senior researchers, comprising 30.1% of respondents, and early-stage researchers, making up 16.5%. This distribution may not fully reflect the experiences and views of mid-career researchers or other diverse academic roles, which could limit the generalizability of the findings.

Moreover, there was a notable gender imbalance, with male respondents making up approximately 69.9% of the survey participants. This overrepresentation of males might have influenced the perceptions of ORCID's usage, benefits, and challenges, potentially overlooking specific issues or advantages experienced predominantly by female (28.2%) and non-binary (1.9%) bioethics stakeholders.



Geographically, the study predominantly featured responses from researchers in Uganda and Kenya, representing 15.7% and 11.8% of participants, respectively. This concentration could restrict insights into ORCID's effectiveness and challenges in other Sub-Saharan African countries with possibly different academic and research infrastructures, digital literacy levels, and institutional policies regarding ORCID. These imbalances highlight the need for broader and more inclusive data collection in future studies to ensure the findings are reflective of the diverse research community across Sub-Saharan Africa.

In addition, the voluntary nature of the survey might have introduced response bias, with individuals holding strong opinions about ORCID—positive or negative—more likely to participate. This could skew results towards more extreme views. Reliance on self-reported data could have also introduced inaccuracies, as participants' responses about their usage, satisfaction, and perceived complexity of ORCID might have been influenced by individual experiences and subjective interpretations.

Moreover, the survey did not account for varying levels of technological proficiency among respondents, potentially affecting satisfaction and reported ease of use. Additionally, the predominantly quantitative nature of the study limited the depth of understanding that could be achieved through more qualitative data, such as detailed user experiences or specific contextual factors affecting ORCID usage. Addressing these limitations in future research could involve more balanced demographic and geographical representation, incorporating qualitative methodologies, and adjusting the survey design to minimise response bias and better account for technological proficiency.

## **Recommendations**

Based on the findings of this analysis, we suggest the following 10 key recommendations geared towards enhancing ORCID's implementation and adoption within the bioethics community in Sub-Saharan Africa:

1. **Enhance Digital Literacy:** Implement training programs specifically designed to improve digital literacy among researchers across all career stages. This will help them effectively use and integrate ORCID in their research activities.
2. **Targeted Awareness Campaigns:** Conduct targeted awareness campaigns in regions with low engagement rates, such as Comoros and other less-represented countries. These campaigns should focus on ORCID's benefits, how it can enhance research visibility, and its role in ethical research practices.
3. **Institutional Integration:** Encourage academic institutions and research organizations to integrate ORCID into their research management systems and require its use in research submissions and applications to normalize its use among researchers.
4. **Language and Cultural Adaptation:** Develop ORCID resources and support materials in local languages and adapt them to the cultural contexts of different Sub-Saharan countries to improve understanding and adoption.
5. **Stakeholder Partnerships:** To promote ORCID, forge stronger partnerships with local universities, research institutions, and funding agencies. These stakeholders can help drive adoption through policy changes and integration into academic and research workflows.
6. **Simplify the ORCID Interface:** Address the feedback regarding the complexity of the ORCID platform by simplifying the user interface. This could involve redesigning the navigation and improving explanatory resources to make the system more accessible to all users.
7. **Enhance User Support:** Establish dedicated support channels, such as help desks or online forums, where ORCID users can get timely help and answers to their questions, decreasing any anxiety or difficulty associated with its use.

8. **Community Engagement:** Initiate community engagement initiatives where researchers and other stakeholders can learn from their peers' experiences, discuss best practices, and share their success stories and challenges with ORCID.
9. **Policy Advocacy:** Work with governmental and regulatory bodies in Sub-Saharan Africa to advocate for policies that encourage or mandate the use of ORCID for all researchers, similar to requirements already in place in some journals and by funders.
10. **Continuous Feedback and Improvement:** Regularly collect feedback from users to improve ORCID's features and its implementation strategies. Use this feedback to adapt the platform to meet the evolving needs of the research community in Sub-Saharan Africa.

By addressing these recommendations, stakeholders can enhance the adoption and effective use of ORCID, contributing to more transparent, accessible, and collaborative research practices across Sub-Saharan Africa.

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