



# Has the Global South become a playground for Western scholars in information and communication technologies for development? Evidence from a three-journal analysis

Yang Bai<sup>1</sup> 

Received: 3 April 2018 / Published online: 7 July 2018  
© Akadémiai Kiadó, Budapest, Hungary 2018

## Abstract

This study analyzes the role of the Global South countries and the representation of scholars from the Global South in three top-level journals in the area of information and communication technology for development (ICT4D). All the peer-reviewed articles published from 2015 to 2017 in the journals were examined for (a) the country and regional affiliations of the authors, (b) the distribution of countries which were studied, (c) the role of Global South scholars played in the studies, and (d) the research methods adopted in the studies. Besides using the conventional bibliometric indicators, this study also explored several important but often-ignored dimensions such as a country-by-country quantification of the severity of underrepresentation of scholars from the Global South in the publications and the relationship between the role of the scholars from the Global South and the research methods used in the published studies. The analysis shows a complicated picture of the status of low- and middle-income countries and scholars from the Global South in the ICT4D scholarship. Although some indicators suggest that scholars from the Global South play an important role, in general, they are underrepresented.

**Keywords** ICT4D · Global South · Leading publications · Bibliometrics · Intellectual playground

## Introduction

Despite significant social and economic development achieved in the past decades, social inequality and injustice persist. As information and communication technologies (ICTs) have been recognized as a necessity for promoting human rights, democracy and socio-economic progress (the International Telecommunications Union 2002), the inequality in ICT access and usage has become a critical issue. With this recognition, a field of study has emerged, which is known as Information and Communication Technologies for Development (ICT4D), the study and practice of bridging the digital divide and using ICTs to

---

✉ Yang Bai  
ymb5037@psu.edu

<sup>1</sup> Donald P. Bellisario College of Communications, Pennsylvania State University, 201 Carnegie Building, State College, PA 16803, USA

promote social and economic development (Heeks 2009). Equality is the central topic in ICT4D studies and the goal of ICT4D practices. While numerous works have been produced addressing various forms of ICT-related inequalities, there is one overlooked area where considerable inequality might exist—the ICT4D scholarship itself.

In many academic fields, ranging from sciences to humanities, scholars from the Global North<sup>1</sup> have dominated academic publications (European Commission 2003; Baffoe et al. 2014; Lam 2014). Not only are scholars from low- and middle-income countries under-represented in the academic publication but also these countries have increasingly been used as the site of research without the participation of indigenous scholars. As Diptee (2015) incisively pointed out, the Global South has increasingly become an intellectual playground for Western scholars. Admittedly, there is nothing intrinsically wrong that scholars from the developed world study the Global South. Nevertheless, the real problem, as Mama (2007) summarized, is that scholars from the West often fail to consider the local context and the voice of local people when conducting research about countries in the Global South.

This research seeks to answer the following question: has the Global South become an intellectual playground for Western ICT4D scholars? Naturally, to fully answer this question, two issues must first be addressed. First, are most of the countries studied located in the Global South? Second, who studied those countries, and are scholars from the Global South marginalized? Nevertheless, that the Global South has been used as an intellectual playground for Western scholars is not only a descriptive but also a value-laden argument implying that the phenomena mentioned above, if they do exist in ICT4D studies, are problematic. Among the recognized problems in the field of ICT4D is the failure to incorporate the local context and the voice of local people (Mama 2007; Zewge and Dittrich 2017). Therefore, this study also analyzed whether there is any systematic difference between scholars from the high-income countries and those from the less developed countries in the extent to which they consulted the local context in their research.

Previous bibliometric studies suggest that ICT4D publications are indeed dominated by scholars from the high-income Western countries, and a trend has emerged that countries in the Global South have been studied by, and in many cases, solely by scholars from the Global North. Nevertheless, many of the previous studies on this topic focus only on certain types of ICT4D studies (Zewge and Dittrich 2017) or the representation of authors from one particular region (Gitau et al. 2010). The few comprehensive examinations only give general conclusions without providing detailed empirical data to show the severity of the issue (Walsham and Sahay 2006). Moreover, even fewer studies exist which explore whether there is any systematic difference between scholars from the high-income countries and those from the less developed countries in how they conducted their research.

To fill in the gaps mentioned above, this study examined all the peer-reviewed articles published between 2015 and 2017 in the Top 3 ICT4D journals: *Information Technologies & International Development* (ITID), *Electronic Journal of Information Systems in Developing Countries* (EJISDC) and *Information Technology for Development* (ITD). First, the country and regional affiliations of the authors were analyzed. Second, the distribution of countries used as sites of research was analyzed. Then, a metric was developed and used to evaluate how severely the authors from certain countries were

---

<sup>1</sup> In this study, the Global North, the North, the West, Western countries and developed countries refer to the high-income countries. The Global South, the South and less-developed countries refer to low- and middle-income countries. This study uses the World Bank classification of countries by income.

underrepresented. Last, the relationship between the role of developing-country authors in the studies and the research methods used were investigated.

The article is structured as follows. In the next section, the literature about the representation of the Global South and scholars from less developed countries in general and the field of ICT4D is reviewed. The gaps in the existing literature are also discussed in this section. The third section introduces the methodology, followed by the results of the quantitative analyses. The last section summarizes the main findings of the study and discusses the implications and limitations of the study.

## Literature review

### The Global South in academic publication

Academic publishing is a critical component of global knowledge production. Since the 19th century, academic journals have been the central medium for the dissemination of scholarly knowledge (Meadows 1980). However, this crucial platform has been increasingly dominated by scholars from the Global North. Baffoe et al. (2014) described this phenomenon as the “whiteness” of academic research and publication. Knowledge, in this sense, is “constructed, reconstructed, distributed and reproduced by scholars in the Global North, who, more often than not, see no value in the knowledge of academics and researchers from the so-called Third World” (p. 13).

The marginalization of the Global South in academic research and publication can be manifested in many different ways. Most straightforwardly, there are significantly fewer scholars from the Global South contributing to the academic publication compared to their counterparts from developed countries. According to the data collected by European Commission (2003), scholars from the United States of America, the European Union and Japan alone contributed to 78.3% of the world’s published studies in scientific inquiries. Lam (2014) examined three journals in technical communications and found that compared to scholars who study or work in US universities, non-US scholars tend to be co-authors rather than the primary researchers. In the overall scientific research domain, 31 countries out of a total of 191 contributed 98% of the scientific research publications worldwide, and only three among the 31 countries are low- or middle- income countries (King 2004).

Besides the underrepresentation of authors from the Global South, the worry has long existed that the Global South, particularly in humanities, health sciences and other social scientific fields, has increasingly become an intellectual playground for scholars of the Global North. For example, Mama (2007) noticed that, although African studies has been a prominent field of academic inquiries, most of the published authors in this field are from developed countries rather than the country under study. Such a trend is also found in the field of world history. While the materials and sites of research can be virtually all countries in the world, only a small group of states, predominantly those in the North, is the active producer of knowledge (Inikori 1996).

### The Global South in ICT4D studies

The marginalization of low and middle-income countries, manifested in both the underrepresentation of authors from the Global South and the use of less developed countries by the Western scholars as their intellectual playground, is also discussed in the ICT4D literature. In one of the first comprehensive examinations of ICT4D academic publications,

Walsham and Sahay (2006) analyzed the research papers published in 13 journals and 2 conference proceedings. Their findings suggest that although authors from a wide range of countries were involved in the ICT4D publications, most of them were affiliated with English-speaking countries. Moreover, they detected a trend in which low- and middle-income countries were studied by researchers from the developed world without the participation of the indigenous scholars. Although this study touches upon some of the most fundamental issues about inequalities in the ICT4D publication, no concrete empirical evidence is given to show the severity of the issues.

After Walsham and Sahay (2006), more studies emerged which examined the country affiliation of authors and the distribution of research sites in ICT4D publication. Using the Thomson Reuters Web of Science database (now Clarivate Analytics), Gitau et al. (2010) examined the contribution of African scholars in the ICT4D research. They found that although African countries are popular sites of research in ICT4D, only 1–9% of the publications about development issues in Africa were authored by scholars from the research institutes located in the continent. Williams et al. (2013) examined the first author's country affiliations of 563 journal articles, book chapters and conference presentations on the topic of community informatics from 1990 to 2011, and found that authors from English-speaking countries, such as the US, UK and Australia played a dominant role.

In addition to the country affiliation of authors, the distribution of countries in which the study was conducted has also been examined. Dodson et al. (2012) examined 40 interventionist ICT4D studies published in ITID from 2013 to 2010. The analysis indicates that 42% of the research was conducted in Sub-Saharan African countries. India was the most commonly used research site as a single country, with 30% of the studies conducted there. After examining 948 articles published in five ICT4D journals and two conferences, Gomez (2013) reached the same conclusion that India was the dominant site of research for ICT4D scholars. Thapa and Sæbø (2016) conducted a thorough analysis of 80 published articles which focus on development issues in the Third World countries. Similarly, they found that the majority of the studies were carried out in countries in Sub-Saharan Africa and India.

According to previous studies, it is clear that most of the ICT4D studies are focused on issues in the Global South while the majority of the published authors are associated with developed countries. Nevertheless, based on this fact, it might not be appropriate to conclude that the Global South has been used as an intellectual playground for Western ICT4D scholars. There is nothing intrinsically wrong that developed-country scholars study countries of the Global South. What is more important is how they study the Global South, since how development issues are studied has a profound impact on how these issues could be approached and solved (Botes and Rensburg 2000). Thus, whether there is a systematic difference between authors from the Global South and the Global North in the research methods they used is a critical question that must be answered.

However, compared to the studies on the country affiliation of authors and the distribution of focus countries, the studies about the research methods adopted in ICT4D publications are rare. In Dodson et al' study (2012), the authors found that 48% of the studies examined were technology-centric, which could imply that the methods used in many studies failed to incorporate the local context and the voice of local people. In the conclusion section of Thapa and Sæbø's study (2016), they warned that the dominance of quantitative and qualitative case studies in the ICT4D literature could lead to poor generalizability and actionability of the insights gained from the research. In one of the latest

examination of ICT4D literature, Zewge and Dittrich (2017) examined 57 articles about using ICTs to address agriculture-related development issues published in five ICT4D journals and one ICT4D conference proceeding from 2006 to 2014. Among other findings, the analysis shows that survey was the dominant method used in the examined studies. The authors expressed the concern that the wide use of survey as the research method might blind ICT4D researchers from the in-depth understanding of the local context of the communities, which could be better revealed through more immersive research method such as participatory observation and ethnographic field study.

The review of the previous literature suggests that scholars from the Global North, as in many other academic fields, have dominated the ICT4D publication. However, on one hand, many of the studies reviewed are focused on one type of ICT4D studies or the presence of a particular group of authors. On the other hand, the comprehensive examination of ICT4D publication often lacks the detailed empirical evidence to show the severity of the issue. Thus, a more precise picture is needed to show which specific countries are underrepresented and to what extent they are underrepresented. Furthermore, whether the Global South has become an intellectual playground for ICT4D scholars in the West is not only about if there are more authors from high-income countries than those from less developed countries but also how the scholars from the Global North have studied the Global South, which is by far a largely underexplored topic. This study seeks to fill in these gaps in the literature on ICT4D publication analysis.

## Methodology

This study analyzed articles in the peer-reviewed sections of three ICT4D journals: ITD, ITID and EJISDC. Book reviews, invited publications and other sections which do not require peer reviews were not examined. Heeks (2010) provided a list of the top 15 journals in the area of ICT4D. Ten journals were excluded because they either focus on one specific region such as Asia and Africa or only deal with specific areas of ICT4D studies such as health information systems and educational informational systems. Then the rest of the journals were ranked based on their impact measured by citation scores, and the top 3 journals were selected. As shown in Table 1, 37 peer-reviewed articles contributed by 111 authors were published in ITID from 2015 to 2017. EJISDC had 336 authors and 146 peer-reviewed articles published during the studied period. ITD published 104 articles authored by 251 scholars in the three-year period. In total, 287 peer-reviewed articles were published in the three journals from 2015 to 2017, and 698 authors contributed to those studies.

EJISDC and ITD are indexed in the Inspec Database. Information about the authors was retrieved from the database and exported to Excel. Articles published in ITID were downloaded, and information about authors was collected as printed in the article. The following bibliometric data were obtained:

- Titles of the peer-reviewed articles
- Author names

**Table 1** Number of articles and authors for the selected journals

|        | Years     | Articles | Authors |
|--------|-----------|----------|---------|
| ITID   | 2015–2017 | 37       | 111     |
| EJISDC | 2015–2018 | 146      | 336     |
| ITD    | 2015–2019 | 104      | 251     |

- Authors' country and regional affiliations (the institutions where the authors worked when the articles were published)

Based on the World Bank classification, the country where the authors are located was categorized as low-income, lower-middle-income, upper-middle income or high-income country.<sup>2</sup> The countries were also grouped into one of the 8 world regions: Western Europe, Eastern Europe, Middle East and North Africa, Sub-Sahara Africa, Asia, Oceania, North America and the Carribean and Latin America.

All the published peer-reviewed articles were downloaded and read to identify whether the study is focused on specific countries or it is a theoretical or general policy discussion. If the article focuses on specific countries, it is further read to determine whether it is focused on high-income, low-income or middle-income countries. If an article does not have any author from the country under study, the article was coded as “mismatched” (0). If there is at least one author from the country that is studied, the article was coded as “matched” (1).

Each article was also coded based on the role of authors from the Global South. Articles with no authors from low- or middle-income countries and articles with more authors from the Global North were coded as “0”. Articles with more authors from the Global South or the same number of authors from the Global North and South were coded as “1”. Admittedly, having more authors from low- and middle-income does not necessarily indicate that they played more important roles in the studies. Also, in this study, having an important role does not necessarily mean that the author was the leader of the research team nor that he or she made the most significant contribution. Instead, having more authors from a particular country means that there is higher chance that the team could be informed of the local context of the country under study. As a complement, the country affiliation of the first author was also coded with the assumption that the first author is the leading scholar who has the biggest overall influence on the study. Articles with first authors from the Global South were coded as “1”, and articles with first authors from the developed countries were coded as “0”.

The research method employed in each study which focuses on issues in low- or middle-income countries was also coded into one of three categories based on how *detached* it is from the people or community which is studied. Participant observation, ethnography and other immersive research approaches were coded as “immersive” (3). Interviews, experimentation, focus group and other methods in which the people studied are directly involved were coded as “involving” (2). Studies using methods such as literature review, archival research, online surveys and statistical analysis of secondary data were coded as “detached” (1). If multiple research methods were used, the article was coded based on the most immersive approach employed. The information about the research methods was gleaned from the methodology section of the article. If the study does not have the methodology section, the entire article was read to decide which approach was employed. A number of “interventionist ICT4D studies” (Dearden 2013) are published in the three journals which involve the design, deployment or application of ICTs as the means to address development issues. This type of studies was first coded based on whether the local situation was surveyed or the indigenous residents were consulted during the design, implementation and evaluation process. If not, the study was coded as “1”. If the local situation or local people were consulted, the same coding scheme was used to categorize

<sup>2</sup> In this study, unless specified otherwise, developed countries and high-income countries are used interchangeably, and developing countries refer to the low- and middle-income countries.

the study as “2” or “3” dependent on the research methods used to collect the information. A second coder was asked to code the research methods used in 50% of the articles, and a satisfactory inter-coder reliability was achieved (Cohen’s Kappa = 0.79).

It is worth emphasizing that using immersive research methods does not guarantee that local context and local people are truly consulted. Based on high-quality secondary materials, scholars who already possess knowledge about the cultural context of the people and places studied could still effectively incorporate the local context in a “detached” way. Nonetheless, in general, the majority of the ICT4D research projects with unsuccessful results are the ones in which detached research methods were used without consulting the local context (Dodson et al. 2012). Therefore, it has increasingly become a consensus that using immersive research methods featuring the researcher’s participation in or observation of the local context is crucial to the inclusion of the voice of the local people, which is an important prerequisite of successfully solving any development issue (Dearden and Haider Rizvi 2015; Walsham 2017). Therefore, although the level of immersion of the research method might not be a perfect indicator of the engagement with local context, it is reasonable to expect that studies using more detached methods are less likely to consult the local context and the voice of the local people.

Most of the analyses in this study are descriptive in nature. Some inferential statistical tests such as Chi square tests with post hoc analyses and *t* tests were also conducted when necessary. All the data analyses were carried out on the SPSS 21.0 software.

## Results

### Country affiliations of the authors

In total, 698 different authors from 63 countries contributed to the articles published in the three journals from 2015 to 2017. The top 3 contributing country is South Africa ( $N = 130$ , 18.6%), followed by the US (107, 15.3%) and UK (49, 7.0%). The top 10 contributing countries are listed in Table 2.

As shown in Table 2, the authors from each of the top 2 contributing countries are twice more than authors from the third largest contributing country. Nevertheless, according to the HHI index,<sup>3</sup> the publication in the three journals shows no sign of being dominated by any single country (HHI = 792.04). Among the top ten contributing countries, seven are in the Global South. However, the analysis of the general pattern shows that there are significantly more authors from higher-income countries than those from lower-income countries. As shown in Table 3, among all the 698 authors, those from high- or upper-middle-income countries totaled 562 (80.5%). Only 136 authors (19.5%) were affiliated with research institutes in low or lower-middle-income countries.

<sup>3</sup> The HHI index =  $\sum_{i=1}^N$  share of authors from each country is a widely used indicator of market concentration. In general, an HHI index below 1500 is considered a sign to show that the market is not concentrated (The U.S. Department of Justice 2015). In this study, the academic ICT4D publication can be treated as a market where scholars from all around the globe can enter. Thus, a high HHI index (> 1500) means a few players, in this context, scholars from a small number of countries, have dominated the market, or the ICT4D academic publication sphere. See more detailed discussion on the meaning and application of HHI index in Hirschmann (1964). The paternity of an index. *American Economic Review*, 54 (5), 761.



**Table 2** Country affiliations of the authors

| Countries    | Number of authors | Percentage |
|--------------|-------------------|------------|
| South Africa | 130               | 18.6       |
| USA          | 107               | 15.3       |
| UK           | 49                | 7.0        |
| Cameron      | 32                | 4.6        |
| Norway       | 27                | 3.9        |
| Malaysia     | 25                | 3.6        |
| Tanzania     | 24                | 3.4        |
| China        | 21                | 3.0        |
| India        | 19                | 2.7        |
| Brazil       | 14                | 2.0        |

**Table 3** Country affiliations by incomes

| High-income countries | Upper-middle-income countries | Lower-middle-income countries | Low-income countries |
|-----------------------|-------------------------------|-------------------------------|----------------------|
| 346                   | 216                           | 89                            | 47                   |

### Regional affiliations of the authors

The regional affiliations of the authors are reported in Table 4. 33% of the 698 authors were from Sub-Saharan Africa, followed by those from Western Europe (20.9%), North America (16.3%) and Asia (15.9%). The Middle East & North Africa is the least represented region, with only 6 (0.9%) authors. The analysis of the general pattern shows a promising picture: more than 60% of the authors are from the emerging regions, i.e., Africa, Asia, Middle East, Middle/Eastern Europe, Oceania and South America (excluding the high-income countries in those regions). Nevertheless, the within-region analysis indicates that not all the countries in each region are well represented.

Specifically, while the Western European and Oceanian authors are from a wide range of countries (6 or 42.9% of the countries in Oceania; 14 or 50% of the countries in Western Europe) within the region, only a limited range of countries in other regions are represented. For example, although Sub-Saharan Africa is well represented as a region, the authors are from only one-third of the countries in this area. South African authors alone

**Table 4** Regional affiliations of the authors

|                                 | Frequency | Percent |
|---------------------------------|-----------|---------|
| Sub-Sahara Africa               | 230       | 33.0    |
| Europe                          | 145       | 20.8    |
| North America                   | 114       | 16.3    |
| Asia                            | 111       | 15.9    |
| Oceania                         | 39        | 5.6     |
| South America                   | 28        | 4.0     |
| Middle/Eastern Europe           | 25        | 3.6     |
| Middle East and Northern Africa | 6         | 0.9     |



constitute 56.5% of them. Cameroon contributed 13.9% of the authors from this region, followed by Tanzania (10.4%). A similar situation is also found for Asia. The 111 authors represented 16 out of the 48 countries in this region. The major contributing countries include Malaysia (25, 22.5%), China (21, 18.9%), India (19, 17.1%) and South Korea (14, 12.6%). These four countries alone constitute 71.1% of all the authors from this region. Similarly, about one-third (30%) of the 20 Middle & Eastern European countries are represented in the three journals. The top two contributing countries, Czech Republic (7, 35%) and Poland (6, 30%), alone contributed 65% of the authors from this region.

An even more limited range of countries in South America and the Middle East & North Africa is represented in the journals. Among the 42 countries in South America, only 5 (11.9%) were represented by some authors in the journals. Brazil is the dominant country, with 14 (50%) authors, followed by Argentina (6, 21.4%), Jamaica (4, 14.3%), Mexico (3, 10.7%) and Uruguay (1, 3.6%). Noticeably, no authors from the low or lower-middle-income countries in this region published in the journals. Among the 17 countries in the Middle East & North Africa region, only 3 (17.6%) are represented. Specifically, 4 are from Oman, one from UAE and one from Saudi Arabia.

### Over/underrepresentation of scholars from the studied countries

Among the 287 articles published in the three journals from 2015 to 2017, 53 articles focus on general theoretical and policy discussions. The majority of the articles (81.5%) either focus on issues in low- or middle-income countries or use those countries as the sites for data collection. The analysis shows that several countries have emerged as popular sites of research. Noticeably, all of these countries are in the Global South, including South Africa (40 studies), India (21), Kenya (14), Tanzania (14), Ghana (11) and Cameroon (11). The top 10 countries where most studies were focused on or conducted are listed in Table 5.

Based on the assumption that the distribution of countries under study should be commensurate with the country affiliation of the authors, the expected number of authors from each studied country was calculated.<sup>4</sup> For illustration, if a particular country is the focus in 5% of the articles, it is expected that at least 5% of the authors should be affiliated with the country. Such an assumption that the number of authors should be proportionate to the frequency of the countries being used as research sites might not be realistic. Nevertheless, this metric could be used as a starting point to concretely measure the level of underrepresentation of authors from the studied countries.

The expected number of authors were then compared to the actual number of authors from the countries. The result indicates that while scholars from high-income countries are all well- or overrepresented, scholars from many low- and middle-income countries are underrepresented in the journals. The comparison between the expected and actual number of Global South authors is shown in Fig. 1.

As Fig. 1 shows, among the 47 Global South countries used as the focus of research, only 8, including South Africa, Cameroon, China, Slovenia, Argentina, Serbia, Sri Lanka and Poland, are overrepresented. India, Kenya, Ghana are the top 3 underrepresented countries. Noticeably, about half (48.7%) of the underrepresented countries are in Sub-Saharan Africa. Moreover, 10 countries, including Gambia, Indonesia, Pakistan, Mozambique, etc., appeared as the sites of research but did not have any indigenous author who published in the journals.

<sup>4</sup> Expected number of authors for country  $i = \frac{\# \text{ of article focused on country } i}{\text{Total number of articles}} \times \text{Total number of authors}$ .

**Table 5** Top 10 countries as the sites of research

| Countries                | Number of studies |
|--------------------------|-------------------|
| South Africa             | 40                |
| India                    | 21                |
| Kenya                    | 14                |
| Tanzania                 | 14                |
| Ghana                    | 11                |
| Cameroon                 | 11                |
| Pacific Island Countries | 9                 |
| Malaysia                 | 9                 |
| Nigeria                  | 8                 |
| Brazil                   | 8                 |

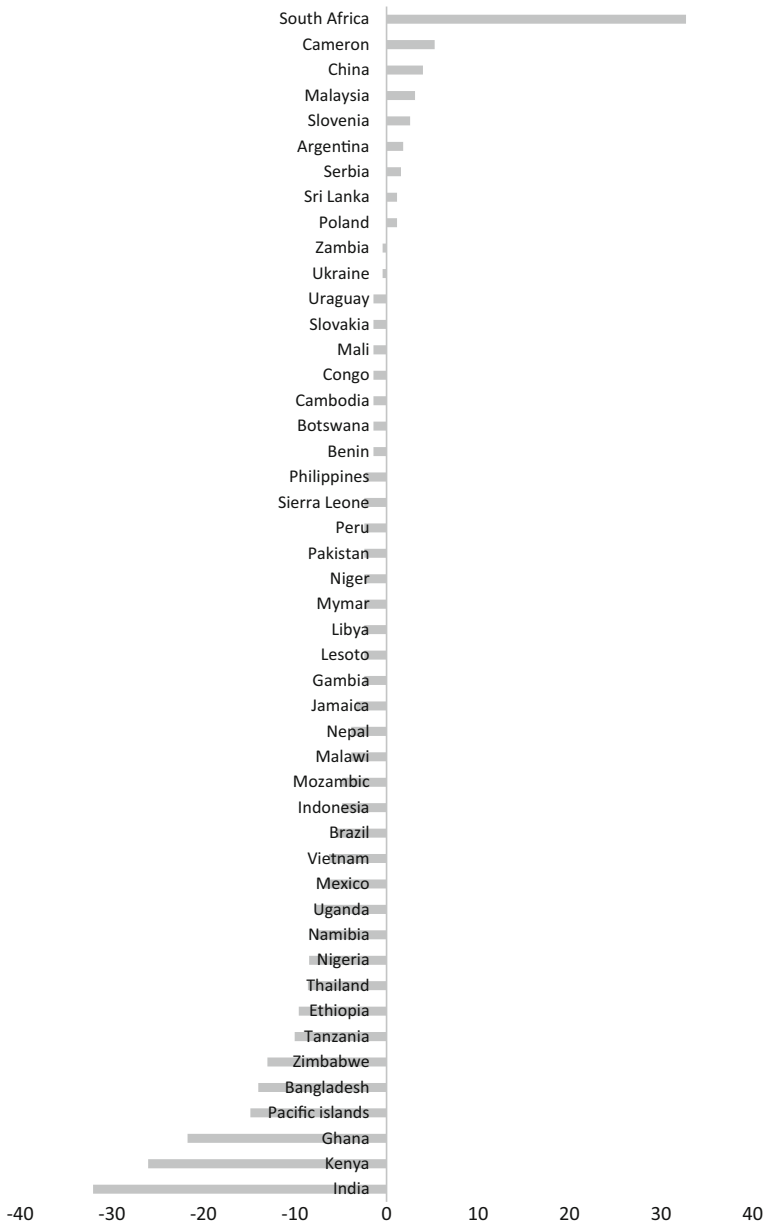
In addition to the representation of Global South authors, further analysis was conducted on each article to see whether it has at least one author from the focus country. The analysis shows a considerable number of cases where the article has no authors from the studied country. Such mismatch exists in 30.7% (88) of the articles published in the journals. Particularly, 71.6% (63) of the “mismatched” studies can be characterized as low- or middle-income countries being studied solely by authors from high-income countries.

### The role of authors from the Global South and the research method

As mentioned in the last section, 234 articles published in the journals are focused on issues in the Global South. Generally speaking, authors from the Global South played an important role (the article has more authors from the South or an equal number of authors from the North and South) in 169 (72.2%) of these studies. The pivotal role of scholars from the Global South is also manifested in that they are the first authors in 154 articles (65.8%).

This study also evaluated the research methods used in the 234 studied. Although there are slightly fewer studies which adopt immersive research methods such as participatory observation and ethnographic field study (Table 6), the Chi square test shows that the use of “detached”, “involving” and “immersive” methods are well balanced in the articles ( $\chi^2 = 3.26, p = 0.19$ ).

In order to test the relationship between the role of Global South authors and the research method used in the studies, the research method was treated as an ordinal variable so that the *t* test could be conducted. The analysis shows that studies with more authors from high-income countries tend to use research methods more “immersive” in nature ( $M = 2.06, SD = 0.82$ ) than do the studies with more or an equal number of authors from the Global South ( $M = 1.84, SD = 0.78$ ),  $t(232) = -2, p < 0.05$ . A similar pattern is also observed using the country affiliation of the first author to indicate the role played by the Global South scholars. Specifically, studies with first authors from less developed countries tend to use methods less “immersive” in nature ( $M = 1.83, SD = 0.77$ ) than do studies with first authors from the Global North ( $M = 2.09, SD = 0.83$ ),  $t(232) = -2.36, p < 0.05$ .



**Fig. 1** Over/underrepresentation of the authors. *Note:* Underrepresentation = actual number of authors–expected number of authors. A negative number indicates that the country is underrepresented

### Conclusion and discussion

The representation of scholars from the Global South has recently attracted much attention in the ICT4D scholarship. This study seeks to explore whether ICT4D, as many other academic disciplines, has become an intellectual playground for Western scholars. By

**Table 6** Research methods

|                   | Observed <i>N</i> | Percentage |
|-------------------|-------------------|------------|
| Detached methods  | 84                | 36         |
| Involving methods | 85                | 36         |
| Immersive methods | 65                | 28         |

examining 287 peer-reviewed articles published in three top-class ICT4D journals from 2015 to 2017, this study shows a complex status of the Global South and scholars from low- and middle-income countries in ICT4D publication.

First, among the top-10 contributing countries, 7 are in the Global South. The leading position of US and UK in the global knowledge production and the rising presence of some countries where English is widely spoken such as India, South Africa and Norway in academic knowledge production have been recognized in many bibliometric studies (European Commission 2003; William et al. 2013; Lam 2014). Nevertheless, this study shows that several low- or middle- income countries, in particular, Malaysia, Cameroon, China and Tanzania, have contributed a considerable number of authors. On one hand, it is exciting to see more countries in the Global South among the top contributing states. On the other hand, however, it is worth noting that the contribution of those authors mainly originates from one source. For instance, all the 32 authors from Cameroon and 95.8% of the authors from Tanzania published in one journal, the EJISDC. 85.7% of the Chinese authors and 72% of the Malaysian authors published in ITD. As a comparison, the journal in which most of the American authors published their studies contributed only 59.2% of all the 107 authors from the country, and the largest source of U.K authors contributed only 53.1% of the authors from the country. Noticeably, 31.6% of the EJISDC editors and 37.5% of the ITD editors are scholars from less developed countries, compared to about 25% for ITID. Thus, it is possible that the nationality composition of the journal editors is a determining factor (Demeter 2018). A thorough discussion about the reason why the authors from Africa tend to publish in EJISDC, and the ones from Asia tend to publish in ITD is beyond the scope of this study. Nevertheless, the fact that many scholars from the Global South are in effect constrained to publish their works only in certain journals shows that they are still disadvantaged in some ways.

The analysis also revealed that more than 60% of the authors are affiliated with emerging regions. Nevertheless, this promising figure comes with the bitter fact that most of the areas are represented by authors from a very limited range of the countries in the region. For example, only about 30% of the countries in Sub-Saharan Africa are represented in the journals, and South Africa alone contributed 57% of the authors from the region. The authors from South America represented only 16% of the countries in this region, and 50% of them are from Brazil. Authors from low-income countries are extremely rare even within the authors from the emerging regions. The division of the world into the core and peripheral regions and the implications of such division have been well studied in global politics, economics as well as knowledge production (Wallerstein 2004; Schubert and Sooryamoorthy 2010). It is observed that core countries often dominate academic knowledge production. Scholars from the peripheral countries, if they publish at all, usually work in collaboration with scholars in the central countries, and in many cases, peripheral countries are studied by scholars in the core countries without the participation of scholars from the peripheral countries at all (Dahdouh-Guebas et al. 2003). The finding of this study seems to suggest that such a core-peripheral division has emerged even within the peripheral regions. Noticeably, most of the authors in the developing regions are

associated with the high- or upper-middle-income states within the region. The examination of the collaboration pattern within scholars in the emerging regions is the not the focus of this study. Nevertheless, a preliminary inspection was conducted, and the result does reveal a considerable number of cases where scholars from the countries with better economy used some of the least developed countries in the same region as their research sites without the participation of any indigenous scholars. The finding, though it still needs to be confirmed by more rigorous research in the future, might bespeak a worrisome possibility: the issue in question might not only be whether the Global South has become an intellectual playground for Western ICT4D scholars but also whether the poorest countries in the peripheral region have become an intellectual playground for scholars in the core countries in the same region.

In line with previous studies (Walsham and Sahay 2006), most studies published in the journal focus on countries in the Global South. Specifically, South Africa, India, Kenya, Tanzania, Ghana and Cameroon emerged as the most popular countries for studies. However, the dominance of the Global South as the sites of research does not lead to the same prominent representation of scholars in the developing world. Although in general, scholars from low- and middle-income countries have a strong presence in the studies focused on issues in the Global South, with more than half of those studies featuring more authors from the Global South or an equal number of authors from the North and South, many of the studied countries are still underrepresented. Specifically, 83% of the countries are used as research sites without a proportionate number of scholars from the countries publishing in the journals. In particular, 21.3% of the countries were simply used as research sites with no indigenous authors publishing in the journals. Moreover, about one-third of the studies which focus on specific countries have no authors from the countries researched. These figures show that the concern that the Global South has become the playground for Western ICT4D scholars is not unfounded.

Several scholars have proposed solutions to address the underrepresentation of scholars in the less developed countries. For example, Confraria and Godinho (2015) suggested that the visibility of African scholars in the global academic research production is positively correlated with intra-regional and international collaboration. A preliminary examination of the collaboration pattern in the published articles shows that authors from the most severely underrepresented countries tend to collaborate with scholars within the same country. Thus, universities and governments in those countries should encourage more international academic collaboration. However, it has to be acknowledged that universities and governments in those countries often cannot provide the necessary support and resources for their scholars to conduct international collaboration. Therefore, higher level of research institutions supported by multiple countries within the region should be encouraged so that they can serve as anchor organizations to facilitate international academic collaboration (Megnibeto 2013).

Although it has been worried that Western scholars, due to the lack of understanding of the local context, often impose their own perspectives on the issues and people they study (Mama 2007; Baffoe et al. 2014), the analysis of this study shows a different story. Compared to studies where the scholars from the Global South played a leading role, the research projects led by authors from the Global North are more likely to use research methods which are more “immersive” in nature. This seemingly striking fact might be explained by several factors. First of all, as Schubert and Sooryamoorthy (2010) rightly pointed out, scholars in the Global South often lack the necessary funding and other necessary resources for their research. Therefore, ethnographic research and other types of more immersive methods might not be the most feasible option for scholars in the South.

Second, it might be because scholars in developing countries are more familiar with the realities of the research sites so that they feel it is less necessary to conduct immersive studies. In other words, thanks to their unfamiliarity with the local context of the countries studied, scholars from the developed world have more incentives to apply research methods that are more immersive so that they can overcome the barrier. Admittedly, these are merely speculations. Future research is needed to reveal the true reasons behind this counter-intuitive finding. Nonetheless, this finding adds another layer of complexity to the focused issue of this study. If scholars from the Global North are more likely to use research methods that are more immersive, then is it really problematic that the Global South has become an intellectual playground for Western scholars? Certainly, using immersive research methods does not guarantee that the voice of the local people is truly heard, and using detached methods does not necessarily lead to the failure to consider the local reality. However, this finding suggests that at least Western ICT4D scholars have been trying to engage themselves with the local context. Thus, that the Global South has been used by Western scholars as an intellectual playground might be better interpreted as a descriptive claim than a value judgment.

It is worth emphasizing that all the conclusions and implications of this study should be considered in the context of its limitations. One of the key limitations of this study is that the authors' country affiliation examined in the study is operationalized as the location of the institution where the authors worked instead of where they are truly from. In some cases, it is highly possible that although some authors were not affiliated with a developing country, they are in fact *from* a developing country. To inquire about the true nationalities of all the authors, however, is not feasible in a study with a relatively large sample size. Nevertheless, when interpreting the findings of this study, one should be aware that authors from the Global South who were not affiliated with institutions in the developing region, even if they use detached research methods in their studies, could be better informed about the local context than are their Western counterparts who adopted immersive research methods. Second, only three top-level journals were examined. Therefore, the results of the analysis might not be a perfect representation of the entire ICT4D field. Future studies will benefit from the inclusion of more journals for analysis. Also, for the 3-year period studied, no significant changes in the pattern of representation of the Global South scholars are detected. Such changes in the trend might be revealed if more years of publications are analyzed.

## References

- Baffoe, M., Asimeng-Boahene, L., & Ogbuagu, B. C. (2014). Their way or no way: "Whiteness" as agent for marginalizing and silencing minority voices in academic research and publication. *European Journal of Sustainable Development*, 3(1), 13–32. <https://doi.org/10.14207/ejsd.2014.v3n1p13>.
- Botes, L., & Rensburg, D. (2000). Community participation in development: Nine plagues and twelve commandments. *Community Development Journal*, 35(1), 41–58.
- Confraria, H., & Godinho, M. (2015). The impact of African science: A bibliometric analysis. *Scientometrics*, 102(2), 1241–1268.
- Dahdouh-Guebas, F., Ahimbisibwe, J., Van Moll, R., & Koedam, N. (2003). Neo-colonial science by the most industrialised upon the least developed countries in peer-reviewed publishing. *Scientometrics*, 56(3), 329–343.
- Dearden, A. (2013). See no evil? Ethics in an interventionist ICTD. *Information Technologies & International Development*, 9(2), 1–9.

- Dearden, A., & Haider Rizvi, S. M. (2015). ICT4D and participatory design. In P. H. Ang & R. Mansell (Eds.), *The international encyclopedia of digital communication and society*. <https://doi.org/10.1002/9781118767771.wbiedcs131>. Accessed 28 Dec 2017.
- Demeter, M. (2018). Nobody notices it? Qualitative inequalities of leading publications in communication and media research. *International Journal of Communication*, 12(2008), 1001–1031.
- Diptee, A. (2015). The Global South as intellectual playground. Available at <https://politicsofmemory.com/2014/12/25/the-global-south-as-intellectual-playground/>. Accessed 10 Jan 2018.
- Dodson, L., Sterling, R. S., & Bennett, J. K. (2012). Considering failure: Eight years of ITID research. *Information Technologies & International Development*, 9(2), 19–34.
- European Commission. (2003). Third European report on science and technology indicators. In *European Commission Directorate-General for Research*. Retrieved from [https://cordis.europa.eu/indicators/third\\_report.htm](https://cordis.europa.eu/indicators/third_report.htm). Accessed 5 Jan 2018.
- Gitau, S., Plantinga, P., & Diga, K. (2010). ICTD research by Africans: Origins, interests, and impact. In *Proceedings of the 4th international conference on information and communication technologies and development ICTD, London, UK*.
- Gomez, R. (2013). The Changing field of ICTD: Growth and maturation of the field, 2000–2010. *Electronic Journal on Information Systems in Developing Countries*, 58(1), 1–21.
- Heek, R. (2010). *ICT4D journal ranking table*. Retrieved from <https://ict4dblog.wordpress.com/2010/04/14/ict4d-journal-ranking-table/>. Accessed 20 Dec 2017.
- Heeks, R. (2009). The ICT4D 2.0 manifesto: Where next for ICTs and international development? *Development Informatics Group; Institute for Development Policy and Management*. Retrieved from <https://www.oecd.org/ict/4d/43602651.pdf>. Accessed 5 Jan 2018.
- Hirschmann, A. (1964). The paternity of an index. *American Economic Review*, 54(5), 761.
- Inikori, J. E. (1996). Inequalities in the production of historical knowledge. *Comparative Studies of South Asia, Africa and the Middle East*, 16(1), 122–124.
- International Telecommunications Union. (2002). *ICTs in support of human rights, democracy and good governance*. Retrieved from <https://www.itu.int/osg/spu/wsisthemes/humanrights/ICTs%20and%20HR.pdf>. Accessed 30 Dec 2017.
- King, D. (2004). The scientific impact of nations. *Nature*, 430(6997), 311–316.
- Lam, C. (2014). Where did we come from and where are we going? Examining authorship characteristics in technical communication research. *IEEE Transactions on Professional Communication*, 57(4), 266–285.
- Mama, A. (2007). Is it ethical to study Africa? Preliminary thoughts on scholarship and freedom. *African Studies Review*, 50(1), 1–26.
- Meadows, A. J. (1980). Access to the results of scientific research: Developments in Victorian Britain. In A. J. Meadows (Ed.), *Development of science publishing in Europe 1980*. Amsterdam: Elsevier.
- Megnigbeto, E. (2013). International collaboration in scientific publishing: The case of West Africa (2001–2010). *Scientometrics*, 96(3), 761–783.
- Schubert, T., & Sooryamoorthy, R. (2010). Can the centre–periphery model explain patterns of international scientific collaboration among threshold and industrialised countries? The case of South Africa and Germany. *Scientometrics*, 83(1), 181–203.
- Thapa, D., & Sæbø, O. (2016). Participation in ICT development interventions: Who and how. *Electronic Journal of Information Systems in Developing Countries*, 75(3), 1–10.
- The United States Department of Justice. (2015). Herfindahl-Hirschman Index. Retrieved from <https://www.justice.gov/atr/herfindahl-hirschman-index>. Accessed 10 Jan 2018.
- Wallerstein, M. (2004). *World-systems analysis: An introduction* (pp. 23–24). Durham: Duke University Press.
- Walsham, G. (2017). ICT4D research: Reflections on history and future agenda. *Information Technology for Development*, 23(1), 18–41.
- Walsham, G., & Sahay, S. (2006). Research on information systems in developing countries: Current landscape and future prospects. *Information Technology for Development*, 12(1), 7–24.
- Williams, K., Lenstra, N., Ahmed, S., & Liu, Q. (2013). Research note: Measuring the globalization of knowledge: The case of community informatics. *First Monday*, 18(8), 1–12.
- Zewge, A., & Dittrich, Y. (2017). Systematic mapping study of information technology for development in agriculture (The case of developing countries). *Electronic Journal of Information Systems in Developing Countries*, 82(2), 1–25.