Running head: THE U.S. DOMINANCE IN I/O PSYCHOLOGY

How much is research in the top journals of industrial/organizational psychology dominated by authors from the U.S.?

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Abstract

Industrial/organizational (I/O) psychology, the subfield of psychology applied to the context of work, has been criticized for being dominated by U.S. authors because this dominance could prevent the generalizability of results and the enrichment of theories, paradigms, and approaches by researchers from other parts of the world. Previous estimates on the extent of the U.S. dominance are, however, likely restricted in scope, outdated, and likely biased by non-U.S. researchers who were socialized in the U.S. or received help by U.S. co-authors. As such, we measured the level of U.S. dominance by analyzing 5,626 papers published from the top ten journals of the field of I/O psychology in the last eleven years and their authors. The results show that the U.S. dominance continues, although the internationalization of industrial/organizational psychology has steadily increased. An additional analysis of the gender distribution across our sample revealed that female first authorship is slightly more common among authors with no U.S. affiliation. We suggest several steps to further increase the level of internationalization.

Keywords: internationalization; work and organizational psychology; generalizability; publications; gender differences

How much is research in the top journals of industrial/organizational psychology dominated by authors from the U.S.?

Even though internationalization of psychology has been a hot topic for many years now, research shows that psychology is very much dominated by studies originating in the U.S. (Arnett 2008; Begeny et al. 2018; Cascio and Aguinis 2008; O'Gorman et al. 2012). In contrast, there is a rising awareness that in a world where leisure time is spent and work is conducted across the globe, a better understanding of human behavior across cultures and countries is necessary to help explaining similarities and differences (Berry et al. 2002). Hence, there is a need for better understanding the reasons why psychological research is still struggling with its internationalization (Harzing, 2008; van de Vijver, 2013).

It is a challenge to even define what internationalization in psychology exactly means in the context of research, which is why often it has been used synonymously with the visibility of non-U.S. research in high-impact journals (e.g., Bajwa and König 2017). Lately, some authors have been able to characterize the goals in a more systematic fashion for subfields of psychology that certainly apply in parts to psychology in general: creating a better synthesis of theories and/or data across cultures, aiming at having geographically representative scholarship, as well as exploring similarities and differences that might be influenced by factors such as culture and context (Begeny 2018). Interestingly many psychology researchers, even though implicitly, assume that their findings have universalistic qualities and should be applicable to individuals all over the world (c.f. Adair and Díaz-Loving 1999; Berry et al. 2002). However, such inferences are called into question by numerous factors.

First, Henrich et al. (2010) conducted an extensive review of samples used in psychological research and found that most of the samples were from WEIRD (Western, Educated, Industrialized, Rich, and Democratic) countries. Their findings suggested that most samples in psychological research consisted of well-educated and comparatively rich students from Western countries, and within the Western countries, most samples were from North America, thus over-representing a comparatively small group of individuals and underrepresenting the majority of the world population. Henrich et al. (2010) found significant differences in research results within and across countries so that these samples do not provide valid representations of the population on which inferences are drawn. As most high impact journal papers in psychology report results using these samples, their appropriateness and generalizability needs to be questioned.

Second, these samples are likely the result of a historically low diversity in the origin of authors in high impact journals (e.g., Arnett 2008; Cascio and Aguinis 2008). Piocuda et al. (2015) analyzed seven areas of psychology and found that there has been a clear positive trend of greater participation by international researchers in prestigious high-impact journals, yet there are still fields in psychology in which the participation by non-U.S. authors is very limited. Naturally, research areas of psychology where researchers and research subjects are from the same geographical region are limited by the potential these research designs bring along (see Arnett 2008, Shen 2011).

Lastly, in the past decades there has been a rising awareness for cross-cultural issues in psychology (van de Vijver 2013). There is indeed a need to have a better understanding of similarities and differences of human behaviour across the world, as even fundamentals of psychology (such as personality psychology) are questioned in a global context (e.g., De Raad

and Peabody 2005). Yet, most of the cross-cultural psychological debates have historically taken place in specialized journals, such as *Journal of Cross Cultural Psychology*, and not in the more generalized journals of the subdisciplines, where they could create a more culture-informed, inclusive, and globally applicable science and profession. This limits the potential of developing models and theories that do justice to the cultural and regional diversities. An increasing trend of research collaboration across country borders in the last years might significantly improve this situation, however most of this research is not emic in nature (i.e., not from within a particular culture, Adair and Huynh 2012; van de Vijver 2013).

Industrial/organizational psychology

Within the field of psychology, an important subfield is industrial/organizational (I/O) psychology – the subfield in which workplace issues faced by individuals, teams, and organizations are studied using psychological theories, principles, and methods. I/O psychology (called work and organizational psychology by many Europeans) thus belongs to the applied subfields of psychology: It applies psychology to the context of work (e.g., Muchinsky and Howes 2018). Nonetheless, due to its applied nature, many I/O psychologists also do research at business schools across the world, positioning it also in the area of management (Aguinis et al. 2014).

Although I/O psychology is well alive and claiming much progress (Salas et al. 2017), it has been questioned whether the field of I/O psychology produces knowledge that corresponds with the global world we live in. Due to technological advancements in the last decade, new business models often demand companies to think about a global perspective from the outset (see Berman 2012). Therefore the field of I/O psychology/management, which thrives on the context of current work, is faced with challenges on how to deliver knowledge that transcends borders

and could ideally be applied across the world (Adler and Harzing 2009). I/O psychology researchers have acknowledged that there are huge discrepancies between how and where business is conducted and that traditional research approaches of trying to generalize from primarily U.S.-based research results might threaten the generalizability of findings to other parts of the world (e.g., Pudelko and Harzing 2008). Hence, in last two decades, as has been the trend in psychology in general, researchers have called for a better understanding of these challenges as well as solutions to increase diversity in the field (e.g., Ahlstrom et al. 2013; Martinko et al. 2000; Tourish 2011).

One of the main reasons for this phenomenon seems to be related to the dominance of U.S. researchers and contributors in the most important journals of the field. Several studies showed that in high-impact I/O psychology journals up to 90% of the studies can be attributed to authors who are affiliated with U.S. institutions (e.g., Cascio and Aguinis 2008; Shen et al. 2011). It does not come as a surprise that researchers from a particular country are very likely to conveniently collect samples from the same and thus an overrepresentation of U.S. researchers in high-impact journals goes hand in hand with an overrepresentation of U.S. samples in these journals (see Burgess and Shaw 2010; Sackett and Larson 1990).

This dominance of U.S. researchers in the high-impact I/O psychology/management journals has its historical roots. After world war II, the dominance of the U.S. as a world power and its help with the reconstruction of many European countries facilitated the knowledge exchange in management sciences in general, which some researchers have even coined to be an import of U.S. theories and models of management to Europe (Guillén 1994; Üsdiken 1996). This dominance is still visible today, as for example, the list of the most renowned journals in I/O psychology (e.g. *Personnel Psychology*, *Journal of Applied Psychology*), the most renowned

research conferences (e.g., *Annual Meeting of the Society for Industrial and Organizational Psychology*), the most renowned business schools (see, e.g., Siemens et al. 2005), and the most renowned management scholars (e.g., Podsakoff et al. 2008) are still strongly rooted in the U.S. With such a long history in the field, it is obvious that U.S. researchers enjoy enormous prestige as their theories, models, and research standards are perceived as the de facto standards for research in this area (Üsdiken 2004).

Especially in a world where "publish or perish" is the guiding principle for researchers across the globe, there is a thirst for knowing what outstanding research constitutes and drives researchers to seek publications in the most-cited journals (Harzing 2008). For a long time there had been a reluctance by U.S.-based outlets to acknowledge that once U.S. based journals have become international outlets for I/O psychology and slowly changed their audience (Tsui 2007). Some high-impact I/O psychology journals have realized the necessity and potential of international contributors and explicitly ask for international submissions in their mission statements (e.g., Leadership Quarterly, Journal of Organizational Behavior, Journal of Business and Psychology), whereas others publish self-reflective papers in their own journals highlighting the significance they see to international publications and outlining ways on how to successfully write for these journals (e.g., Bajwa et al. 2016; Eden and Rynes 2003; Kirkman and Law 2005).

The internationalization of the field can clearly be shown by taking a look at the attendants of some of the most recognized annual research conferences, such as the Academy of Management conference (Barkema et al. 2015). It seems obvious that such a strong presence of international researchers at annual meetings in the U.S. would likely impact the way discussions in the field are framed. However, there are huge discrepancies between the membership figures of highly reputable U.S. based associations, with almost 50% of their members being affiliated

with non-U.S. institutions (Academy of Management 2019), and the share of international researchers in high-impact journals (Cascio and Aguinis 2008; Kirkman and Law 2005).

This U.S. research dominance is likely problematic because U.S. research may not generalize to other parts of the world, and research topics, concepts, paradigms, and approaches of non-U.S. researchers may not find their way into the top journals of the field (e.g., Tsui, 2007). For example, although unions are major stakeholder in many parts of the world, unions have never attracted much research attention from I/O psychology in the U.S., and the general I/O psychology literature still rarely covers unions (Zickar 2004). Furthermore, differences in societal issues, such as illiteracy, corruption, cronyism, and nepotism (Arasli et al. 2006; Nicholls-Nixon et al. 2011; Transparency International 2013) might be more intriguing for researchers to focus on in their respective countries but be of limited interested in the U.S. (e.g., Leung 2012). Another example is the overrepresentation of managers, professionals, and executives in samples studied in I/O psychology, which is in contrast to the labor market statistics, particularly of less developed countries where the large majority of employees are workers (Bergman and Jean 2016). Thus, it is likely that mainstream I/O psychology misses to take such issues into account.

The question arises why international researchers' motivation to take part in annual meetings in the U.S. as well as their willingness to send in manuscripts for publication in high-impact journals does not result in a higher visibility of their research (Bajwa and König 2017). One of the reasons could be related to the composition of editorial and review boards of high-impact journals as they might not adequately reflect the internationalization of the field in general (e.g., Burgess and Shaw 2010; Harzing and Metz 2013). Editors and reviewers of high-impact management journals are increasingly aware of the fact that a growing international

readership asks for the communication of topics that are not only of relevance to U.S. researchers (e.g., Eden and Rynes 2003). Moreover, such a diversification of topics can provide various opportunities to enrich scientific discussions with new methods, theories or approaches that increase the likelihood of creating generalizable management knowledge (e.g., Leung 2009).

The good news is that the increasing self-reflection of the field in terms of internationalization has led leading researchers to analyze the U.S. dominance in I/O psychology to support discussions and ways on how to accommodate more international research in once U.S. based outlets (e.g., Cascio and Aguinis 2008; Harzing and Metz 2013). However, previous estimates on the U.S. dominance suffer from two shortcomings. First, the database explored so far is rather restricted. Analyses so far have focused on one or two journals (Cascio and Aguinis 2008; Shen et al. 2011; Tsui 2007). Furthermore, the data is rather to be outdated: They review data up until 2007 or earlier. In particular, although Baruch (2001) analyzed a substantial number of journals, he did not analyze data past 1995. Second, estimates might be biased because a substantial number of researchers sorted into the group of non-U.S. researchers have actually been trained and thus academically socialized in the U.S. (i.e., obtained academic degrees in the U.S.). According to recent data (Institute of International Education 2017), there are over 1,000,000 international students studying in the U.S. International students may seek a U.S. education for many reasons that include wanting to be exposed to mainstream paradigms and methods and gaining a better understanding of implicit expectations of reviewers and editors (e.g., Cho et al. 2008) including the Anglophone norms of communication (Horn 2017) – socialization that likely helps to increase visibility in top journals (cf. Bajwa et al. 2016). It has been estimated that approximately half of international students return home after obtaining their

Ph.D. (Nerad 2004), and it is likely a simplification to categorize them together with researchers who have not been socialized in the U.S. academic system (cf. Horn, 2017).

Given the current state of knowledge, this paper aims to contribute to this internationality debate. To do so, we analyzed first authors' location in 5,626 articles, across the top 10 U.S.-based journals of the field of I/O psychology. We also accounted for the fact that some authors have a non-U.S. affiliation but had been academically socialized within the U.S. (i.e., obtained a degree in the U.S.) and some have U.S. co-authors.

In addition, we took advantage of our data set to also explore the gender breakdown of authorship. Gender inequality within science is of concern for many stakeholders because "No country can afford to neglect the intellectual contributions of half its population" (Larivière et al. 2013, p. 213), although there is no consensus why gender inequality is so common in science (with biases against women being a plausible explanation, see e.g., Moss-Racusin et al. 2012; Witteman et al. 2019).

Furthermore, females and males might not have the same research interests, because men and women differ in their interests, as summarized by Su et al. (2009, p. 859): "Men and things, women and people" (i.e., things attract more interests from men and people more from women). This general tendency has also found some support among researchers in I/O psychology, where male researchers' interests focused more on the statistical side of I/O psychology according to König et al. (2015). Furthermore, it seems likely that female rather than male researchers study the implications of menopausal transitions (e.g., Griffiths et al. 2013), breastfeeding (e.g., Libbus and Bullock 2002), and sexual harassment (e.g., Cortina and Wasti 2005) for work.

Recent research within the field of I/O psychology (Gardner et al. 2018; König et al. 2015) and in psychology (e.g., D'Amico et al. 2011; Mayer and Rathmann 2018) and science

(e.g., Larivière et al. 2013) in general has shown gender differences, with men often publishing more as first authors than women. It is, however, unknown whether this gender differences favoring men are similar if the difference between U.S. and non-U.S. authors is considered.

Method

Sample

As pointed out before, previous analyses in the field of I/O psychology had been focused on one or two journals only and therefore were limited in their implications for practice (Cascio and Aguinis 2008; Shen et al. 2011; Tsui 2007). Even for research in other areas of psychology it seems quite common to not use more than eight journals for analysis of author's affiliation (see Begeny et al. 2018). We felt confident that analyzing the top-ten journals in the field will provide us with a large dataset that is likely to represent the field in general and add significant insights to previous studies. After taking a look at the category "Psychology, Applied" of the Journal Citation Report (e.g., Thomson Reuters 2014), we found that two journals were based in Europe instead of the U.S. By design, the two European journals attract research from European countries and have a greater diversity (i.e., the European Journal of Work and Organizational Psychology as well as Work & Stress, the latter due to its association with the European Academy of Occupational Health Psychology), whereas in comparison the U.S. based journals do not stress their U.S. roots as such and have a longer historical tradition. As the two European journals were at the end of the ranking in the Journal Citation Report and given that I/O psychology is still strongly rooted in the U.S. and given our focus of analyses on U.S. versus the rest of the world, we decided against the selection of these two journals and instead selected the next two in the ranking which again were U.S. based (i.e., Organizational Behavior and Human

Decision Process and Journal of Business and Psychology). In this way, we assured that traditionally more diverse journals (e.g., European journals) do not distort our results.

Thus, we analyzed the following top ten U.S.-based I/O psychology journals: *Journal of Management*, *Journal of Applied Psychology*, *Personnel Psychology*, *Organizational Research Methods*, *Leadership Quarterly*, *Journal of Organizational Behavior*, *Journal of Vocational Behavior*, *Journal of Occupational Health Psychology*, *Organizational Behavior and Human Decision Processes*, and *Journal of Business and Psychology*, and in accordance with other research (e.g., Romeo et al. 2017). Using the Scopus database (at www.scopus.com), we obtained data from these journals for the years 2006 to 2016. This resulted in 5,859 articles (reduced to 5,626, see next paragraph).

As one reviewer mentioned, it might be relevant to assess whether the U.S. journals even see themselves as international outlets, we checked their aims and scopes webpages. Only three out of ten journals explicitly stated that they welcomed international contributions, however all other journals either had substantial numbers of international contributors or had published editorial pieces in the past highlighting their quest to accommodate more international manuscripts, making them de facto international (c.f. Begeny et al. 2018).

Measures

To assess the location of the first authors' academic socialization, we searched for their curricula vitae (CVs) on their webpage (using Google), LinkedIn page, and/or ResearchGate page and coded whether first authors completed their PhD, Master or Bachelor degree in the U.S. or not. Of the 5,859 articles, we were unable to locate 248 CVs (possibly because they were no longer in academia, published only as students, or changed their names after marriage). We contacted all 248 authors via the email addresses published in their respective papers. Fifteen

authors replied, providing the necessary data, 56 emails were undeliverable, and 177 emails were unanswered. As such, the final article count was 5,626, resulting in 96.02% of useable datasets. Furthermore, the Scopus database provided us with the current affiliation information for all first authors and co-authors.

Results

For our analysis we were primarily interested in first authors, hence in the following we will detail our analysis based on first authors and their socialization. Overall, 2,262 of the 5,626 articles were written by first authors not affiliated with a U.S. institution (40.2%). The number of papers written by non-U.S. first authors who did not complete either a PhD, Bachelor, or Master degree in the U.S. or had no U.S. co-author dropped to 1504 (26.7%). This shows the impact a U.S. research socialization or receiving help by U.S. co-authors has on the likelihood of achieving a publication in top journals. Table 1 reports on the frequency with which U.S. first authors vs. non-U.S first authors publish in the top ten journals, with three ways of categorizing authors as U.S.(-influenced): authors with an U.S. affiliation vs. authors with an U.S. affiliation or an U.S. degree vs. authors with an U.S. affiliation or an U.S. degree or at least one U.S. co-authors.

Figure 1 shows the overall internationality trend over the ten-year period. Readers interested in the results per journal can consult Figure 2. Both figures show that the field of I/O psychology continues to be dominated by U.S. scholars, and even more so if the authors' academic socialization is considered. At the same time, both figures also show a clear increasing trend towards more international authors.

Additional analysis on gender

One of the authors manually determined gender by inferring it from authors' first name, and/or the photo on their webpage, or by using genderize.io (following Fell and König 2016). Our data revealed that 2,139 articles were written by female first authors (38.0%), 3,487 (61.9%) by male first authors, and for 7 cases (0.1%) we could not determine the gender of authors. In the subsample of non-U.S. authors (i.e., without an U.S. affiliation or an U.S. degree), 831 out of 1,504 papers were written by male first authors (i.e., 55.3%), whereas 2,466 out of 3,821 papers (i.e., 64.5%) were written by male first authors in the subsample of U.S. authors (i.e., with an U.S. affiliation or an U.S. degree). Figure 3 depicts the trends over the eleven years, showing that (a) the majority of non-U.S. authors were female in one year (in 2012) and (b) the proportions have become very similar in the last three years. (The picture looks very similar if only an U.S. affiliation is used to categorize authors – available upon request from the authors.)

Discussion

The aim of this study was to analyze the extent to which the field of I/O psychology has become more international over the last 11 years. We were able to identify an increasingly internationality trend such that more papers were being authored by international researchers. However, the absolute numbers demonstrate a continuing dominance of U.S. authors (around 60%), and the numbers are even higher when the location of the researcher's academic socialization was considered (i.e., whether they received any education at a U.S. institution) or if they had at least one U.S. co-author (around 73%). Therefore, our findings imply that there is still a long way to go before the field of I/O psychology adequately reflects the global world we live in.

Our research question focused on understanding the level of U.S. dominance in high impact journals. Fortunately, there is a trend towards a higher number of publications of non-U.S. researchers in most top journals. Interestingly, the *Journal of Vocational Behavior* seems to have undergone a fairly dramatic shift from a primarily U.S. authorship 11 years ago towards a diversified authorship with primarily non-U.S. authors nowadays. Although the same trend was not observed in most other journals, in some years *Organizational Research Methods*, *Leadership Quarterly*, and *Occupational Health Psychology* published research where authors' origin was primarily from outside of the U.S.

This picture is considerably dampened when we take U.S. academic socialization into account, as the number of publications that can be attributed to non-U.S. researchers with neither U.S. affiliation nor an U.S. degree nor at least one U.S. co-author is considerably lower (cf. Figure 2). Such clear differences show that traditional approaches using the affiliation of researchers as a means to describe the U.S. dominance are likely to distort the actual number of international perspectives in journals.

Compared to other fields of psychology, such as developmental psychology (see Arnett 2008) or school and educational psychology (see Begeny et al. 2018) where analyses based on affiliations have been conducted using comparable sizes of datasets, a mean share of non-U.S. authors of almost 40% in I/O psychology is comparatively high. Combined with the upward trend of internationalization over the last years in I/O psychology, this is certainly very positive news. However, this does not imply that there is true diversity in these journals, as we did not separately code so-called Western countries, which typically make up the overwhelming part of non-U.S. research in psychology. Hence, future research is necessary to analyze how a likely U.S. and European dominance could be transformed into a truly international perspective (see

e.g., van de Vijver 2013). Furthermore, we expect a reanalysis of studies using our research socialization approach will likely result in a reduced share of international authorship.

Furthermore, an additional analysis of the distribution of genders across our sample revealed that female first authorship is slightly more common among authors with no U.S. affiliation. Indeed, there were years where first authorship among non-U.S. authors was about equally distributed amongst both genders. It might be possible that specific actions by institutions and countries targeted at increasing the equality in research might have had a positive impact on this (Majcher 2002). Furthermore, there seems to have been a steady increase in female first authorship in the U.S., which is consistent with previous research showing that the field of I/O psychology is becoming fairly gender-balanced (König et al. 2015; see also Gardner et al. 2018).

It should be noted that our study aimed at documenting the current status of the field, rather than exploring the reasons for the underrepresentation of non-U.S. authors. Undoubtedly, there are numerous factors that may contribute to the U.S. dominance. For instance, there could be historical reasons, such as the economic boom in the U.S. after World War II that might have made it easy for researchers to focus on American firms (Boyacigiller and Adler 1991).

Furthermore, it has been argued that non-U.S. authors might too often use a writing style that does not match the expectations of Anglophone readers (Eden and Rynes 2003; Bajwa et al. 2019). In addition, there might also be biases in the review process favoring U.S. authors (Link 1998; Lages et al. 2015).

Our findings imply that the level of internationalization in I/O psychology journals needs to be improved. This can be achieved in several ways. For example, teaching evidence writing skills at workshops at conferences (cf. Bajwa et al. 2016) may help reduce the language

difficulties faced by non-U.S. researchers. It also seems plausible that hosting important I/O psychology conferences in non-U.S. countries could improve the inclusion of non-U.S. perspectives. Non-U.S. authors should also be aware that they likely profit from inviting U.S. scholars as co-authors (cf. Ribeiro et al. 2018). Furthermore, journals could create international theme issues (cf. Iverson 2002). And finally, internationalization could be improved by offering sabbaticals for U.S. researchers outside the U.S. and vice versa, thereby increasing contact between U.S. and non-U.S. researchers (cf. Zdravkovic et al. 2016).

As with all studies, our study has some limitations. First, we focused our analysis on the top ten journals of one field (the field of I/O psychology). As such, our analysis was not exhaustive. However, as the top journals are the most widely read outlets and therefore significantly impact research debates, our approach seemed reasonable. Second, we were unable to find the CVs of all authors in our sample, but because the number of papers excluded was rather small, this would not have significantly impacted our results. Third, some researchers have argued that there is a potential power law distribution in research, which results in very few researchers producing most of the output in numerous fields (O'Boyle and Aguinis 2012). However, as our analysis was based on non-U.S. researcher's share in high-impact journals, this limitation should not have any impact on the overall message of this paper.

To conclude, this paper shows that the internationalization of I/O psychology has steadily increased in the past 11 years and continues to increase. Nonetheless, continued efforts are needed in order for research in I/O psychology – and likely the field of psychology (Arnett 2008; Henrich et al. 2010) – to become truly international.

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Table 1

Level of Internationalization by Journal

| | | | | | | | Journal | | | | | |
|------------------------|--------|--------------|--------------|--------------|----------------|--------------|----------------|--------------|--------------|----------------|--------------|--------|
| | | Journal of | Journal of | Personnel | Organizational | Leadership | Journal of | Journal of | Journal of | Organizational | Journal of | Total |
| | | Management | Applied | Psychology | Research | Quarterly | Organizational | Vocational | Occupational | Behavior and | Business and | |
| | | | Psychology | | Methods | | Behavior | Behavior | Health | Human Decision | Psychology | |
| | | | | | | | | | Psychology | Processes | | |
| Impact factor (2014) | | 6.07 | 4.80 | 4.49 | 4.15 | 3.14 | 3.04 | 2.60 | 2.46 | 2.20 | 2.08 | |
| Authors with an U.S. | | 66.70% (327) | 68.50% (757) | 77.80% (207) | 68.90% (193) | 57.60% (349) | 52.50% (330) | 42.40% (362) | 44.40% (168) | 66.80% (391) | 64.70% (284) | 59.90% |
| affiliation | | | | | | | | | | | | (3368) |
| Authors with an U.S. | | 76.10% (373) | 76.40% (844) | 88.00% (234) | 73.20% (205) | 68.00% (412) | 62.60% (394) | 48.40% (413) | 49.20% (186) | 77.70% (454) | 70.40% (309) | 68.00% |
| affiliation or an U.S. | | | | | | | | | | | | (3824) |
| degree | | | | | | | | | | | | |
| Authors with an U.S. | | 82.20% (402) | 83.60% (923) | 91.70% (244) | 77.10% (216) | 73.60% (446) | 68.90% (433) | 53.50% (456) | 53.70% (203) | 82.40% (482) | 72.70% (320) | 73.30% |
| affiliation or an U.S. | | | | | | | | | | | | (4125) |
| degree or at least one | | | | | | | | | | | | |
| U.S. co-auth | nor | | | | | | | | | | | |
| Gender of first | Male | 67.50% (330) | 67.70% (748) | 69.70% (186) | 78.60% (220) | 62.30% (378) | 62.60% (394) | 52.50% (448) | 38.40% (145) | 62.80% (367) | 61.50% (270) | 62.00% |
| author | | | | | | | | | | | | (3486) |
| | Female | 32.50% (159) | 32.20% (356) | 30.00% (80) | 21.40% (60) | 37.60% (228) | 37.20% (234) | 47.10% (402) | 61.60% (233) | 37.20% (217) | 38.50% (169) | 38.00% |
| | | | | | | | | | | | | (2138) |
| n | | 489 | 1104 | 266 | 280 | 606 | 628 | 852 | 378 | 584 | 439 | 5626 |
| | | | | | | | | | | | | |

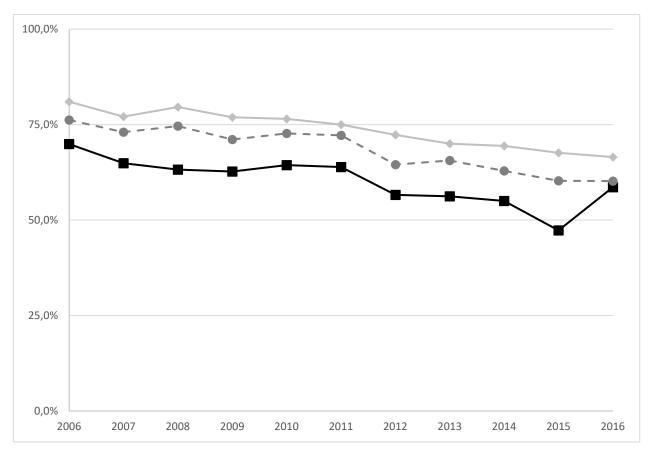
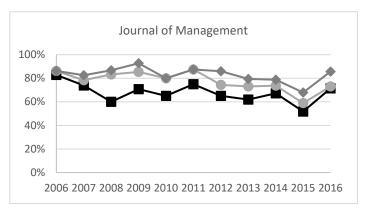
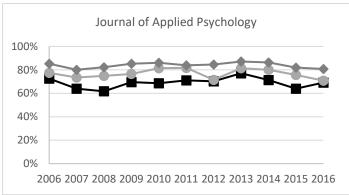
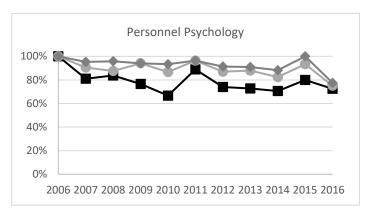
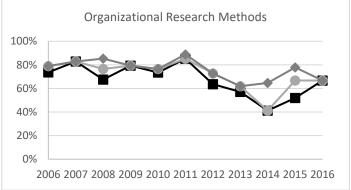


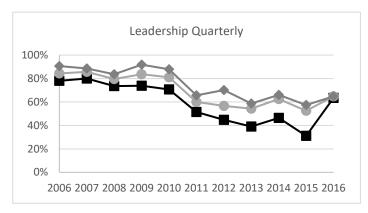
Figure 1. Overall tendency of internationalization (solid black line = authors with an U.S. affiliation, dashed grey line = authors with an U.S. affiliation or an U.S. degree, grey line = authors with an U.S. affiliation or an U.S. degree or at least one U.S. co-author).











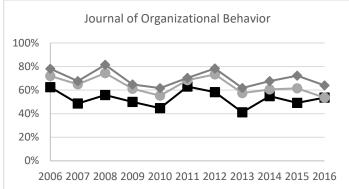
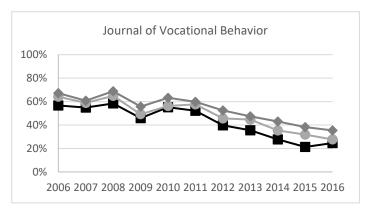
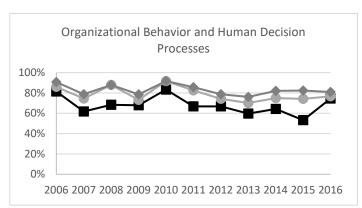


Figure 2. Tendency of internationalization broken down by journal (solid black line = authors with an U.S. affiliation, dashed grey line = authors with an U.S. affiliation or an U.S. degree, grey line = authors with an U.S. affiliation or an U.S. degree or at least one U.S. co-author).







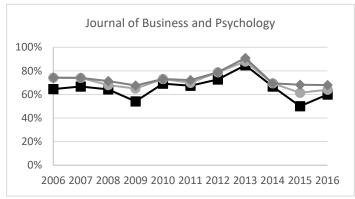


Figure 2 (continued): Tendency of internationalization broken down by journal

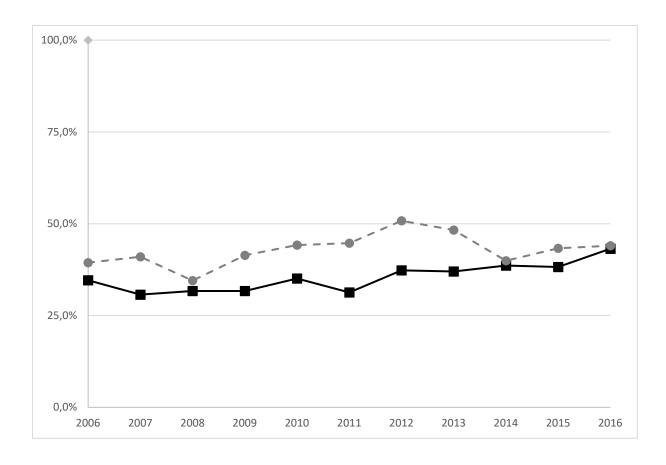


Figure 3. Share of female first authors (solid black line = authors with an U.S. affiliation or an U.S. degree, dashed grey line = authors without an U.S. affiliation or an U.S. degree).