Gendered authorship and demographic research - An analysis of 50 volumes of "Demography"

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Gender differences in publication rates have been reported by numerous studies investigating several scientific fields (Babchuk and Bates, 1962; Blackburn et al., 1978; Cole and Zuckerman, 1984). With 41.9 % of all authors from 1990 to 2011 being female (West et al., 2013, p. 2), demography is among the most "gender equal" disciplines with regard to scientific output. Since demography still is a very young research field, so far the development of gender dissimilarities is quite unexplored. In our project, for the first time, we examine the development of gender dissimilarities in scholarly authorship within subfields of demography. We rely on 50 volumes of Demography, the flagship journal of the Population Association of America (PAA) which celebrated its 50iest anniversary in 2014.
Recent studies report a decrease of the gender gap in authorship of scientific journal publications, for example for the field of international relations (Østby et al., 2013) or for all scientific fields in Spain (Mauleón et al., 2013). But there are critical voices as well. Abramo et al. (2009) and West et al. (2013) question the finding of reduced gender differences in research productivity. They claim that studies usually disregard subfields and therefore systematically overlook present gender dissimilarities in

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the subfields. In addition, authorship practices such as the order of authors are rarely analysed. Abramo et al. (2009) and West et al. (2013) find substantial differences in the gender composition of research productivity in subfields. West et al. (2013) find that "even in fields with a gender composition near parity, men and women are unequally distributed in subfields." (West et al., 2013). In view of the pertinent literature, our analysis looks into the gender differences in field of publication within demographic research.

Our analysis is based on a database including all articles published in the 50 volumes of *Demography* between 1964 and 2014. Based on each author's first name, we identified a person's gender using the program gender.c.[2] Via a content analysis of titles and abstracts published in Demography, each article was manually classified according to nine categories of demographic subfields. Based on this content analyses, we identified (1) "fertility", (2) "mortality" and (3) "migration" as classic fields of population studies. Moreover, we distinguished the fields (4) "family & households", (5) "reproductive health", (6) "health", (7) "education, labor market, income & wealth" and (8) "formal demography, data & methods". A ninth category ("others") included related topics that are occasionally studied such as environmental issues, domestic violence or general papers on demography as a scientific discipline. Our final database includes 2,379 articles, written by 4,382 authors. To evaluate how publications evolved among male and female researchers, in a first step we calculated the share of male and female authors within each demographic subfield over time. Second, we estimated multinomial regression models to iden-

[2]gender.c is a program that assigns gender to first names via a name database including more than 42,000 first names and the respective gender. The copyright (2007-2008) for this program lies with Jörg Michael, Adalbert-Stifter-Str. 11, 30655 Hannover, Germany.

tify determinants of authorship in a specific subfield of demography. The main covariates in the multivariate analysis were gender and period. In addition, the type of authorship (single-authored; multi-authored, first, middle or last position in the list of authors) and the gender of the editor in the period of publication are considered. Finally, we investigate interaction effects between period and gender, to take into account different developments among subfields. To examine the importance of authorship practices, all regression models were first estimated for all authors, allowing for a multiple consideration of each research article. The same estimations were done for first authors only.

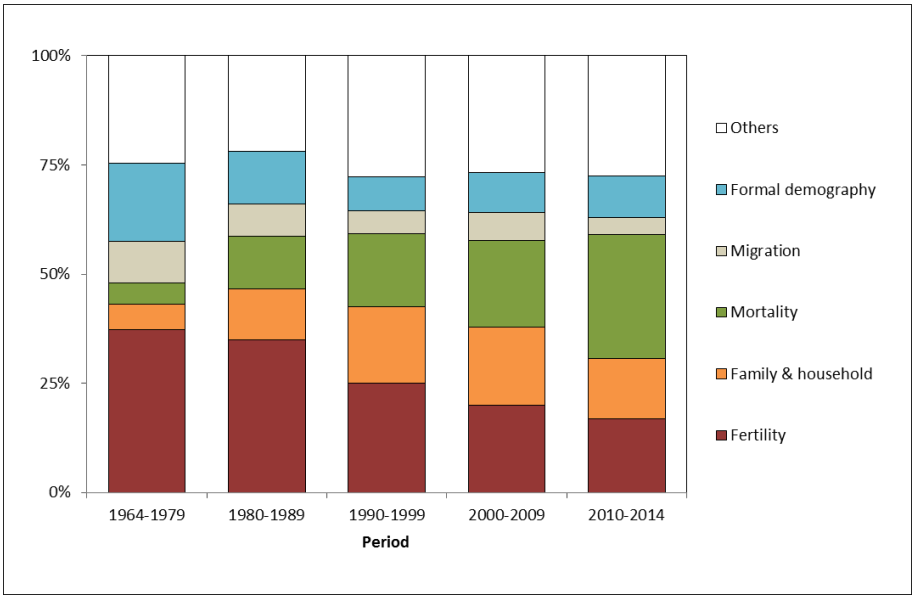
First findings reveal that publications in the demographic subfields evolved differently over time. Figure 1 shows the general development for both female and male authors combined. Due to the small sample sizes articles published in the subfield ”health” were re-categorized into ”mortality”, ”reproductive health” into ”fertility” and ”education & income” into ”others”. In the period 1964 to 1979 most authors published in the field of ”fertility”, followed by ”formal demography”, which includes articles written on data and methods, and ”migration”. Both subfields lost their relative importance and other subfields, like ”family and household” and ”mortality” became more prominent.

Table 1: Share of female publications by subfield and period.

	1964-1979		1980-1989		1990-1999	
Fertility	0.17	(264)	0.26	(206)	0.34	(124)
Family & household	0.15	(66)	0.40	(95)	0.47	(145)
Mortality	0.15	(52)	0.20	(84)	0.22	(101)
Migration	0.12	(107)	0.16	(60)	0.23	(43)
Health	0.00	(4)	0.23	(13)	0.43	(36)
Reproductive health	0.11	(154)	0.33	(76)	0.38	(83)
Formal demography	0.13	(201)	0.17	(97)	0.31	(65)
Education & income	0.19	(89)	0.32	(90)	0.38	(138)
Others	0.10	(187)	0.20	(87)	0.27	(91)
Total	0.14	(1124)	0.26	(808)	0.34	(826)
	2000-2009		2010-2014		Total	
Fertility	0.30	(116)	0.45	(102)	0.28	(812)
Family & household	0.52	(148)	0.55	(110)	0.45	(564)
Mortality	0.33	(83)	0.35	(154)	0.27	(474)
Migration	0.34	(53)	0.32	(31)	0.20	(294)
Health	0.41	(80)	0.44	(74)	0.40	(207)
Reproductive health	0.48	(48)	0.42	(33)	0.30	(394)
Formal demography	0.25	(76)	0.43	(76)	0.22	(515)
Education & income	0.41	(179)	0.43	(154)	0.37	(650)
Others	0.30	(41)	0.55	(66)	0.23	(472)
Total	0.39	(824)	0.44	(800)	0.30	(4382)

Table 1 lists the share of female publications among all publications in each subfield per period. We find that the share of female authored articles rose considerably from around 14 percent in 1964 to about 44 percent in the most recent period 2010 to 2014. The exact amount varies by subfield, revealing that ”mortality” and ”migration” are still particularly male dominated (35 and 32 percent of female authored articles in 2010 to 2014). Other fields like ”formal demography, data & methods” and ”fertility” are close to equality according to gendered authorship (43 and 45 percent of female authored papers). The fields ”family and household” and ”Others” are female dominated: about 55 percent of all publications in these fields are authored by women.

Figure 1: Evolvement of publications by subfield over time.



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