The education and professional experience of demographers: results of an international survey

Máire Ní Bhrolcháin

Abstract

This paper presents findings relating to the education, disciplinary background and professional experience of 634 demographers responding to a mainly internet-based survey carried out in 1999-2000. Two thirds of the survey respondents have some training in demography, and virtually all have studied some other subject also. Academic backgrounds are quite varied, with sociology (broadly defined), economics, mathematics/statistics and geography being the most common. Findings presented relate to: the combinations of disciplines studied, current practise of discipline of origin, interdisciplinary activity, place of education, education abroad, current and past sectors of employment and time-use. Differentials by age, gender and region of residence or birth are considered.

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The purpose of the present chapter is to describe the subject areas in which respondents have training and currently practise. The chapter will also report on where respondents received their training, and other aspects of their professional lives such as their disciplinary history, their involvement in interdisciplinary activity and time use. Differentials have been examined by a number of factors, and some comments are made on those findings that are of particular interest[1].

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[1] In presenting these figures, group differences are reported only if the confidence intervals around the estimated quantities, usually proportions, do not overlap. The sample was not drawn randomly, and is also probably a relatively large proportion of its target universe, but with response rates that differ across categories, and so the calculation of standard errors and confidence limits cannot be justified in statistical terms. Nevertheless, the criterion is a useful

considered to have been drawn randomly, and is also probably a relatively large proportion of its target universe, but with response rates that differ across categories, and so the calculation of standard errors and confidence limits cannot be justified in conventional statistical terms. Nevertheless, the procedure is adopted as a convenient device to select for discussion those group differences that would probably be found if the sample were to be drawn again in the same way.

Self-definition

Throughout , respondents to the survey will be described as "demographers" or "population specialists". When asked explicitly, two thirds of the sample defined themselves as a demographer. Of those who did not, just over one third offered a self-definition that was in some way related to population, usually in combination with some other discipline. Of the 127 respondents not defining themselves as a demographer or population-related specialist, just over four fifths either currently practise demography or were trained in the subject. Altogether, 93.1% of the 622 respondents who answered the question on self-definition either define themselves as a demographer, or as a population-related specialist, in some cases combined with another discipline, or have training in demography or practised demography in the 5 years preceding the survey (Table 1). The main distinguishing feature of those identifying themselves as demographers is that the large majority of them (78.5%) have demographic training in contrast with fewer than half of population specialists (40.6%) and those affiliated with another discipline (46.0%). Also, substantially more of the self-declared demographers currently practise demography than of the other two groups (93.9% vs 69.8% and 71.6%), though the large majority of all three groups were currently engaged in demography, as would be expected from a survey such as the present one (Table 2). While in other respects the three groups are quite similar in academic background and current activity,

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there are two further points of difference. Fewer self-defined demographers have studied a subject outside the key disciplines adjacent to demography[2] (two fifths compared with one fifth), and fewer of them currently practise economics (13.6% vs 34.9% and 30.2%). Interestingly, it is respondents who currently practise economics, rather than those with training in the subject, who are more inclined to adopt a self-definition other than "demographer". Of those who studied economics, 68.8% define themselves as a demographer compared with 70.1% of those who did not. Among those currently practising economics, however, just half - 49.6% - see themselves as a demographer, with little difference by whether they have training in the subject: 46.9% of those who have and 56.3% of those who have not studied economics formally (Table 3).

Disciplines of training and of practice

Table 4, showing the proportions of respondents who had training in each discipline, reveals a wide range of disciplinary backgrounds among demographers. Two thirds have training in demography, but beyond this, no subject dominates the academic backgrounds of the sample. The next most common background, that of over two fifths of respondents, is in what for convenience we term here sociology. The category includes sociology, psychology, anthropology and ethnography but sociology is by far the most common subject, with 90% of the group having studied it. Around a third of the sample have training in each of mathematics/statistics and economics (35.1% and 33.0% respectively). Just under a fifth (18.8%) of respondents have training in geography and allied subjects. Mathematics and economics training are associated – 42.6% of those who studied mathematics/statistics vs

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were to be drawn again in the same way. See also the discussion in Chapter ...

[2] Throughout the paper disciplines are classified into six broad groups, except where otherwise indicated: demography, mathematics/statistics (includes actuarial science, computing, physics, engineering), sociology (includes psychology, social psychology, anthropology, ethnography), economics (includes business studies), geography (includes planning), and other. Disciplines adjacent to demography are: mathematics/statistics, sociology, economics, and geography.

27.5% of those who did not, also studied economics; conversely, 47.3% of those having studied economics compared with 31.4% of others also studied mathematics. In other respects, disciplines do not appear to be particularly clustered.

In the proportions having practised each discipline in the last five years, shown in the second column, we see migration from training to recent practice towards demography: 66.8% have training in demography but 85.9% currently practise it. Such movement would be expected from a sample of people currently engaged in demography, the target universe of the survey. In computing and the biosciences, we also see a greater proportion currently practising than with training. In this sample of demographers, 14.9% have been engaged in the last 5 years in computing while 9.4% have training in the subject; the corresponding figures for medicine and the biosciences are 13.4% and 7.3%. These are cases of in-migration, but out-migration is also in evidence. The most striking case of net out-migration from discipline of origin is among those who studied economics: while 33% of the sample had training in economics, just 19.2% used economics in practice in the last 5 years. The third column of Table 4 shows what might be termed gross persistence in, and out-migration from, each subject. Of the three disciplines of origin most common among demographers – mathematics/statistics, sociology and economics – economics is the one most likely to be abandoned: just 43.1% practise their discipline of origin, compared with 64.5% of those trained in mathematics/statistics and 61.3% of those having studied sociology. This may reflect a selection into demography of economists with a preference for demography's more empirical orientation. But it might also reflect what many see as insufficient attention to economic perspectives within present-day demography,. If this is so, the reason could stem either from the inappropriateness of mainstream economic theory, particularly microeconomic theory, to demographic issues or from a lack of attention, in contemporary demography, to the linkages between population

and economic factors, particularly macroeconomic factors. On the other hand, the nature of the sample is such that economists working in the area of population, and who think of themselves primarily as economists, may have been less inclined to respond to the survey. As we saw earlier, those currently practising economics are less inclined to see themselves as demographers. Two other subjects of study have been abandoned by respondents to this survey to about the same extent as economics: of those who studied history just 44.0% currently s practised it and this is true of 25.7% of those having studied politics/law . Out-migration from demography itself cannot be identified in a survey such as this, since those who studied demography but left the field, or never practised it, were not the target population of the survey and are most unlikely to have responded.

One could see the relatively low proportion, 35.1%, of demographers who have training in mathematics/statistics as regrettable in such a quantitative discipline. On the other hand, there is much to be done in the study of population that requires substantive knowledge and skills and such work might be driven out of the subject altogether if comprehensive mathematical and statistical training were to be regarded as a requirement. Indeed, such a policy could seriously damage the subject – demography competes in the academic marketplace with other professions for recruits with strong quantitative skills and is not as successful in this respect as many would like. It might, however, be useful to reflect on what quantitative training practising demographers should ideally have.

Training needs

More than half of respondents – 60.1% – report that they have, in the last five years, practised a discipline in which they have no training. If we exclude computing , the figure is just a little lower, at 59.6%. Whether we see this figure are revealing a good deal of amateurism or extensive interdisciplinary activity among demographers is a matter of

perspective. The prevalence of practice in the last five years without formal training is presented by discipline in the fourth column of Table 4. About a quarter of those practising each of demography, sociology, mathematics/statistics or economics, have no formal training in the subject. We may view these figures in two ways. On the one hand, that a quarter of demographers practising in each of these disciplines should be without training in them seems regrettable, given especially that they are the core subjects associated with demographic practice. On the other hand, demography has and has had fairly fluid boundaries as a discipline, welcoming specialists from other subject areas who wish to get involved in the subject. A sense of fluid boundaries may also encourage demographers to feel able to undertake work in adjacent disciplines without formal training. Lack of training in demography and its nearest neighbour social sciences is to a large extent a reflection of that two-way open door. Perhaps, however, our scientific enterprise would be more successful if greater attention were given to the need for training in adjacent disciplines once young social scientists have embarked on a demographic career. Another possibility is that the figures may well point up a need for greater explicit collaboration with subject-area specialists outside of demography, rather than that demographers take on themselves the role of one-person interdisciplinary bands. However, the question in relation to recent practice is such that respondents might have over-stated their degree of involvement in other subject areas[3]. Even if so, however, the figures may well reflect a *need* for training in related areas.

Of the remaining subjects, two stand out: computing and medicine/biosciences. Of demographers who practise in these areas 57.8% and 62.5%, respectively, have no training in

[3] On a personal note, I find that I myself, in responding to the question on recent practice, claimed to have practised in the biosciences, which is a considerable over-statement. My research has certainly taken me, marginally, into areas of biology with which I am not familiar (and of which I would greatly welcome greater knowledge), but to say that I have practised biology is an expression more of wish-fulfilment than of fact.

them. That this should be true of computing is unsurprising, given the rapid development in the last few decades in computing technology and of data resources, and so of their more widespread use. However, just 14.9% say that they have practised computing in the last five years, a low proportion that hardly represents the prevalence of computer use for data analysis though it might reflect more sophisticated computer usage – e.g. for simulation purposes. If so, then the figures may point up a need for computer training beyond that required for e.g. the use of standard computer packages. The high proportion without training among those having engaged in medicine/biosciences probably reflects the move within demography in the last decade or so towards health-related research. The relative lack of training in these two areas appears to point to a need for such training, or alternatively, to the need to recruit into demography professionals from these fields. Fairly high proportions of those reporting that they practise history and geography – 42.1% and 45.2%, respectively – have no training in these subjects. In the case of history, this may reflect a low response rate to the survey among historians engaged in demographic topics.

Differentials

As is seen in Table 5, about half as many respondents aged 65+ have demographic training compared with those under 65 (just over one third as against just over two thirds). This is not at all surprising since the generation currently aged 65+ were the pioneers who established demography as an academic discipline. When they were at university, demography was on offer as a subject of study in very few institutions. In other respects disciplinary backgrounds are very similar across cohorts except that more of the younger demographers have studied sociology and geography and allied subjects than of the older generation. On further investigation, however, the differential by age in geographical training is primarily attributable to the high frequency of such training among young French demographers, who are disproportionately represented in the age group under 35. France is the birthplace of

26.1% of the under 35s in the sample but of just 14.5% of those 35+[4]. Among French demographers under 35, 44.4% have studied geography compared with 20.0% of the age group as a whole.

Gender differences in academic background are slight: somewhat more men than women have studied mathematics/statistics (39.8% vs 30.9%) and economics (35.4% vs 27.6%) and training outside the key disciplines allied to demography is a little more common among women (34.1% vs 26.0%). In addition, somewhat more women than men practise sociology (43.9% vs 31.8%). However, of these gender differences only the last reaches statistical significance.

Some, though not extensive, regional differentials exist in relation to academic background (Table 6). Training in demography is more common among demographers born in less developed regions (84.5%) than among those born in developed countries (62.1%). Training in mathematics/statistics is less common among demographers born in North America (18.8%) than elsewhere (42.0%), and fewer North American demographers (6.8%), and of those born in Asia (8.6%), have studied geography as against 18.8% of the sample as a whole. By contrast, the majority of respondents born in the Americas – three fifths – have an academic background in sociology and related subjects compared with just under two fifths of demographers born elsewhere. Perhaps some of the regional differences in scientific practice, particularly what appears to be a greater commitment to the use of regression methods with individual-level data and a greater concern with theoretical background in American demography, has its roots in the predominance of sociological training, since

[4] A test for linear trend with age in the proportions having studied geography is statistically significant in the sample as a whole, and among French demographers, but not when the sample excludes those born in France.

regression techniques and commitment to a theoretical perspective are more or less paradigmatic in American sociology. By and large, the picture is much the same by region of residence as by region of birth – a few large differences appear, particularly in relation to Oceania, but otherwise there are no systematic patterns. A point worthy of note is that less developing countries appear not to suffer a systematic net loss of training in particular subject areas, an issue of interest in the context of brain drain to be discussed in a later section.

Interdisciplinary activity

Demographers are revealed by this survey to be a fairly interdisciplinary group of social scientists. Using, as before, the six broad categories of discipline (see footnote 2), the average number of subjects in which respondents have been trained is 2.3, and the average number practised is the same. Nearly three quarters of respondents (73.8%) are trained in two or more disciplines, and just over a third (34.4%) are trained in three or more. This reflects partly the fact that population science is rarely available as a major subject of study at first degree level, but is more often studied at postgraduate level, so most demographers will have studied at least one other subject before taking up demography. There is much diversity in practice also – 70.0% practise two or more disciplines, and 37.6% three or more. The question asked about subjects studied does not allow us to establish the order in which disciplines were studied. Of those with demographic training, the average number of subjects studied is 2.68 and of those without, 1.5. Just over two fifths (41.6%) of respondents say they moved to demography from another discipline. A fifth (19.5%) describe themselves as always having practised demography and slightly more (23.2%) say that they have always combined demography with another discipline.

The combinations of subjects studied and of those practised in the last five years are set out in Table 7. Only 30 (4.8%) respondents of the 627 reporting some training have studied

demography exclusively. The most common sets of subjects in which respondents were trained are: demography and sociology (13.6%), followed by demography and economics (6.2%), other (5.7%), demography and mathematics (5.3%), sociology (4.8%), demography (4.8%), demography, sociology and mathematics (4.8%), and mathematics (4.0%). While few respondents had studied demography alone, a much larger minority – 21.7% – have practised demography to the exclusion of other subjects in the five years preceding survey, and this is the largest single disciplinary sub-group in respect of recent practice. The next most frequent combinations of disciplines recently practised are: demography and sociology (11.3%), demography and mathematics/statistics (8.1%), demography, sociology and mathematics/statistics (5.0%), demography, sociology and economics (4.3%) and demography and mathematics/statistics (4.1%).

Just under two thirds of respondents (65.9%) report having worked in an interdisciplinary manner in the five years preceding the survey[5] but responses are not differentiated either by subject background, or by discipline of practice, in this respect. Nor are there substantial differences by recent place of work. Interdisciplinary activity appears to be intra-sectoral, with most of those who engage in interdisciplinary work doing so within the sector in which they work themselves. The largest group by recent place of work are those employed in universities: just over half of the 221 university-based demographers who have worked in interdisciplinary fashion in the last five years did so within the university sector, and a fifth to a third worked in an interdisciplinary way with central or local government, or with an international organisation. Demographers engaged in consulting are more likely than others (78.3% vs 54.0%) to have engaged in interdisciplinary activity in the last five years, a reflection no doubt of the varied demands of consultancy work. Just under half of

respondents who work exclusively in French report interdisciplinary activity compared two thirds of others (45.8% vs 67.6%).

Period and place of education

Table 8 shows the period when respondents completed their education. Consistent with the relatively young profile of the sample, just over a third last attended university in 1990-2000 and just under a quarter each in the 1970s and 1980s. One sixth of the sample completed their education before 1970. The median years of university education overall is 7, but the figure is lower among those graduating before 1970. The modal years of third-level education throughout is 5, except for the 1970s graduation cohort for which it is 6 years.

Place of university education, set out in Table 9, corresponds closely with country of birth, the large majority, 84.6%, being educated first at a university in the country where they were born. Since over half the sample were born in Europe, and a further fifth in North America, it is natural that Europe (58.5%) and North America (22.3%) are represented correspondingly in the region where respondents first studied. They are also the major regions where further study was undertaken. Altogether 72.0% of the sample have studied at some time in Europe and 35.3% at some time in North America. While most demographers have studied in one country only, there is nevertheless an appreciable level of international movement, with 28.1% of the sample having studied in more than one country. Europe and North America are the primary destinations of those demographers who travel for further education. Seven in ten of those who studied initially outside Europe, North America and Oceania moved to another country for further study: 32.1% were educated subsequently in North America and 25.7% in Europe . By contrast, just a fifth (19.4%) of those first educated in these three regions studied subsequently in another country. Educational migration between Europe and North America

[5] The question asked whether they had applied their demographic expertise to a project that

are at similar levels in this sample, with 11.4% of those first receiving their training in Europe later studying in North America, and 10.7% of those educated first in North America moving in the opposite direction for further training.

Three times as many demographers born in less developed regions have studied outside their country of birth – 78.8% – as of those born in more developed countries, for whom the figure is 25.4% (Table 10). Study abroad is inferred here where respondents have been educated outside their country of birth. However, some might well have migrated before going to university, and so the extent of international migration for educational purposes will be overstated here, to an unknown extent. A large minority – 40.7% – of demographers born in LDCs who have studied abroad took their first degree outside their country of birth. Sizeable variation occurs among developed countries in the frequency of study abroad: it is least common among demographers born in France (9.3%), and in the US (17.0%), these figures contrasting with 35.4% of demographers born in other parts of Europe, 31.6% of those whose birthplace was Canada or Oceania and 78.8% of those born in developing countries. The frequency of education outside the country of birth is not differentiated by gender or age.

The number of Europeans in the sample being fairly large, intra-European mobility can be examined. On the evidence of this sample, it is not very substantial. Just one in six (16.8%) demographers born in Europe studied in a European country other than their country of birth. And while we saw earlier that relatively few of those who first attended university in the USA studied abroad afterwards, it seems likely that educational mobility *within* the USA is more substantial than is found here between European countries. Language barriers are probably an important factor. The European Union's Erasmus scheme together with new

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was not mainly centred on demographic issues.

collaborative initiatives for postgraduate training being undertaken currently between institutions in various European countries may be effective in promoting greater intra-European mobility for training.

Brain drain associated with education abroad

Education abroad is clearly associated with permanent emigration, and a substantial proportion of migrating demographers settle in a country in which they have studied. Among the economically active at survey, 42.9% of those who studied in more than one country are living outside their country of birth compared with 19.4% of people who were educated in one country only. The link between education abroad and permanent emigration is just as strong among those born in less developed and more developed regions, as is seen in Table 11. Among demographers born in a developing country, 50.0% of those educated abroad are living abroad permanently, compared with just 6.9% of those who did not go abroad for education; the corresponding figures for respondents born in developed regions are 52.3% and 9.5%, respectively. However, the impact of migration associated with study abroad differs between developed and developing countries. Among those studying abroad the permanent destination for the vast majority of emigrant demographers from LDCs is a developed country but there is no compensating movement in the other direction – demographers born in more developed countries also emigrate, by and large, to a developed region. And so, education abroad is clearly associated with emigration from the developing to the developed world: of demographers born in a less developed region two fifths of those who went abroad to study, but none of those who did not, are permanently resident in a developed country. The majority (61.1%) of these LDC-MDC migrant demographers are resident at the time of survey in a country in which they have been educated. We see from Table 11 that permanent emigration in the reverse direction is rare, and so, on these figures, there is a net loss of trained demographers from developing regions. The figures in this

paragraph are confined to the economically active, and do not include respondents who were students at the time of the survey. They are, furthermore, based on the reported country of permanent residence, and so exclude temporary visits abroad for professional purposes. Clearly, there is a brain drain of population specialists from the developing to the developed world, though it should be noted that the majority (60.3%) remain in their country of birth. Altogether, two fifths of demographers in this sample who were born in less developed regions were living abroad permanently, three quarters of these had emigrated to a developed country, and the majority of these were living in a country in which they had been educated.

Disciplinary history

We saw earlier that two fifths of the sample transferred into demography from another discipline. Education cohorts are by and large similar in this respect. A majority (63.2%) of those who transferred into demography did so either before graduating for the first time or within 5 years of first graduation. There is some indication that switching into demography was more rapid among those graduating first in the 1970s and later than before then, but this may be attributable to truncation among the more recent cohorts. It is not really possible to correct for this, because the years to come will not only see in-migrants at longer durations, but out-migrants also[6]. In respect of disciplines of training and practice, and of self-definition and of interdisciplinary activity, those transferring into demography from another subject are little different from respondents who have always been demographers or have always combined demography with another subject. No substantial differentials appear with respect to other characteristics.

Place of work

[6] Truncation has the effect in this case both of omitting in-migration by recent cohorts that will occur in the future and of retaining in the sample young people who are currently active in demography but will leave the subject in the future. Since earlier education cohorts who migrated in have had more time to migrate out again, the resulting comparison may be biased.

Current and previous places of work are set out in Table 12, both for the entire sample and for those economically active at each time point. At the time of survey, half of all respondents are based in universities, with a further third employed in research centres and a tenth in a government statistical office; grouping together those in national statistical offices and in central or local government, a fifth (19.5%) work in a government organisation. The proportion who were students, retired or otherwise economically inactive at the time of survey is 11.0%, and this proportion rises substantially as we go back in time – to 18.5% 10 years before and to 38.5% 20 years before. Considering only those economically active at each time point, the mix of organisations in which demographers work appears to have remained fairly stable, though with a suggestion of a decline in the proportions employed by national statistical offices. A quarter of all respondents report more than one current place of work. Note, however, that the question asked did not specify that the respondent was actually employed by the organisation in question.

Table 13 summarises previous by current sector of activity, and suggests a fair degree of movement between sectors. Since the question did not ask specifically about the type of organisation in which the respondent was *employed* but about where the respondent had *worked*, some part of the apparently high level of inter-sectoral mobility seen in the responses may reflect more or less formal collaboration with other sectors rather than job moves or joint appointments. On the other hand, since the question asks not for a job history but for the sector of activity current 10 and 20 years ago, the level of movement could be seen as fairly substantial. A majority of those working at the time of survey in each sector have worked in another sector at some time in the past. Nearly three in five of those currently based in a university have worked outside the university sector, and a quarter of them have worked in some branch of government. The most varied experience is found among those working in

research centres and in other organisations, 70-75% of whom have also been involved at some time in another sector.

Among the economically active, the distribution of men and women, and of age groups, across sectors is much the same. Regionally, the principal distinction is between France and other countries: one third of demographers resident in France work in a university compared with 61.8% of those based elsewhere. By contrast, the majority – 65.5% – of respondents living in France work in a research centre as against 28.9% in the rest of the sample. This reflects no doubt the major role played by INED in providing demographic opportunities in France.

Allocation of time

Time use is shown in Tables 14 and 15. Reports of time use reveal substantial heaping on percentages ending in 0 and are probably subject to a fair amount of error. Nevertheless, they may give an approximate indication of the relative shares of time devoted to each activity. The very large majority of the sample (90.5%) are engaged in research to some degree, two-thirds carry out some teaching, a similar proportion have administrative duties and just over half are involved in consulting. Research forms the largest single part of the sample's activities - the median percentage of time spent on research is 50% with substantially lower fractions of time given to other activities. However, among those who carry out some teaching, the median percentage of time on the activity is 25%, and a quarter spend 40% or more of their time on teaching. As would be expected, involvement in teaching places a constraint on time for research. Economically active respondents located in a university or research centre who did some teaching spend on average 47.6% (n=320) of their time on research compared with an average of 74.4% (n=79) among those who do not teach. Administrative duties also appear to limit time for research. Again confining attention to

economically active respondents in universities and research centres, the mean percentage of time given to research by respondents who also have administrative responsibilities is 45.5% (n=254) compared with 65.9% (n=145) reported by those who do not, and the figures are 45.5% (n=205) and 60.7% (n=193) among those who are and are not engaged in consulting, respectively. Note however that these figures are percentages of overall time, and that the relationships between the absolute amount of time given to various activities could be different.

Time use is, as would be expected, differentiated by sector of employment. Over four fifths (83.5%) of those working in universities do some teaching, compared with 70.4% of respondents in research centres. It is perhaps surprising to see that half of those who work in government are engaged in some teaching, and even if respondents who report that they also work in a university are omitted, the figure is still four in ten. Not surprisingly, demographers based in research centres give the most time to research – those engaged in research spend an average 63.5% of their time on the activity compared with 51.9% of the research-active in universities. Although substantial, the difference is not perhaps as large as might have been anticipated. Again, however, we recall that the figures relate to the proportionate rather than the absolute distribution of working time.

Résumé and discussion

In all, the survey gives us a picture of demographic training and practice that probably corresponds well with what we might expect on an informal evaluation based on day to day professional experience. Demographers and population specialists are a fairly varied group. The principal academic origins of population specialists are in sociology, mathematics/statistics, and economics, with geography being the original subject of a sizeable minority of demographers. Although in the sample as a whole none of these

disciplines predominates, this is not true of North American demographers among whom sociology is overwhelmingly the most common discipline of origin. Over three fifths of American demographers have studied sociology and fewer than a quarter of them have studied any other individual subject (broadly classified as in footnote 2) apart from demography. Otherwise, regional differentials in disciplinary origins are not pronounced. As a profession, demography has a fairly open door, with a third of the sample not having studied the subject formally. The majority of demographers engage in interdisciplinary work and there appears to be a sizeable circulation of demographers between the academic world, government and other sectors.

As is true in other areas of expertise, there is a substantial loss of trained population professionals from the developing to the developed world. Altogether, two in five of all economically active demographers who were born in a less developed region no longer live in their country of birth, and three quarters of these were resident in a developed country at the time of the survey. In a majority of cases, these LDC-MDC migrants have settled in a country in which they have been educated. Demographers thus participate in the brain drain from developing regions that has in recent years become an increasing focus of interest and policy concern (see, for example, UN ECA 2000). Along with the push and pull factors that have traditionally been cited as explanations for international migration – skills shortages in developed regions, wage disparities, differentials in quality of life and political stability – new factors have been coming to the fore in recent commentary. Iredale (2001) mentions the internationalization both of education and of the professions as a contributory factor, and the important role of education abroad in relation to the migration of demographers was seen earlier in Table 9 showing that among those born in a less developed country the proportions emigrating were 50% among those educated abroad as against with 7% of those educated

wholly in their own country. A further recent focus is on networking between migrants abroad and fellow professionals in the country of origin which may have two effects – both of facilitating migration and of acting as a channel through which expertise and resources may be transferred back to the sending country (Johnson and Regets 1998. Meyer 2001). That such networking may be of particular importance in demography is suggested by the fact that one third of economically active demographers born in LDCs who were permanently resident abroad were working in an international organisation, compared with just 8.3% of those who had not emigrated, and 6.6% of demographers born in a developed country. Such scientists would be well placed to forge links with colleagues in their home countries and to participate in scientific exchange and capacity building. The emigration of trained demographers may thus represent less of a loss to developing countries than appears on the surface and may even result in gains to the sending countries.

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Table 1 Respondents' self-definition as demographer or population-related specialist, by training in and practice of demography

	Total	%	Training in and currently practise demography							
Self definition			**Both**		**Training only**		**Practise only**		**Neither**	
			n	%	n	%				
Demographer	425	66.7	304	71.5	25	5.9	84	19.8	12	2.8
Population specialist, in some cases with another discipline	70	11.0	21	30.0	7	10.0	23	32.9	19	27.1
Others	127	20.4	38	29.9	20	15.7	45	35.4	24	18.9
N	*622*	*100*								

Table 2 Respondents' self-definition by disciplines of training and of practice.

Training in	**Demographer**	**Population specialist**	**Other**
	%	%	%
Demography	78.5	40.6	46.0
Mathematics/statistics	37.0	33.3	37.3
Sociology	47.0	36.2	36.5
Economics	32.0	40.6	30.2
Geography	18.1	18.8	21.4
Other	23.2	42.0	43.7
N	*419*	*69*	*126*
Currently practise	%	%	%
Demography	93.9	69.8	71.6
Mathematics/statistics	35.4	38.1	42.2
Sociology	37.3	31.7	38.8
Economics	13.6	34.9	30.2
Geography	17.4	19	25.9
Other	23.2	28.6	37.9
N	*413*	*63*	*116*

Table 3 Per cent describing themselves as a demographer by training in and practice of economics

Currently practise economics	Studied economics					
	Yes	**n**	**No**	**n**	**Total**	**n**
Yes	46.9%	81	56.3%	32	49.6%	113
No	85.2%	108	71.3%	363	74.5%	471
Total	68.8%	189	70.1%	395	69.7%	584

Table 4 Proportion of respondents with training in each discipline and who practised each discipline in the last 5 years

	Training*	Practised in last 5 years*	Of those with training, % practising		Of those practising, % without training	
	%	%	%	*n*	%	*n*
Demography	66.8	85.9	91.5	*398*	28.5	*509*
Mathematics and statistics	35.1	31.7	64.5	*214*	27.4	*190*
Sociology	43.7	37.0	61.3	*261*	27.6	*221*
Economics	33.0	19.2	43.1	*195*	27.6	*116*
Computing	9.4	14.9	66.7	*57*	51.8	*90*
History	12.6	9.6	44.0	*75*	42.1	*57*
Geography	18.8	19.2	56.8	*111*	45.2	*115*
Politics, law	11.8	6.0	25.7	*70*	50.0	*36*
Medicine, biosciences	7.3	13.4	66.7	*45*	62.5	*80*
Language, arts	0.8	0.2	20.0	*5*	-	*1*
Other	1.3	1.5	20.0	*5*		
Total	*627*	*603*			60.1**	594**

* multiple answers possible

** those practising at least one discipline that they have not studied

Table 5 Proportions by age and by sex who have studied and who currently practise each discipline

SUBJECTS STUDIED		Demo-graphy	Mathe-matics	Socio-logy	Eco-nomics	Geo-graphy	Other	N**
Age								
Under 35	%	66.4	39.4	48.9	32.1	26.3	36.5	137
35-49	%	70.3	36.6	38.8	30.6	19.0	27.6	232
50-64	%	67.3	34.6	47.2	33.2	14.5	25.2	214
65+	%	36.2	34.0	29.8	38.3	12.8	34.0	47
Sex								
Male	%	65.9	39.8	40.4	35.4	18.2	26.0	384
Female	%	67.9	30.9	47.6	27.6	19.1	34.1	246
SUBJECTS CURRENTLY PRACTISED								
Age								
Under 35	%	81.0	44.4	39.7	23.8	26.2	19.8	137
35-49	%	85.8	41.2	34.5	17.3	16.8	32.7	232
50-64	%	85.9	28.2	40.8	18.9	18.4	25.2	214
65+	%	85.1	31.9	19.1	17.0	14.9	27.7	47
Sex								
Male	%	85.6	38.9	31.8	20.7	19.8	27.2	384
Female	%	83.1	33.3	43.9	16.9	18.1	27.0	246

*Subjects grouped as indicated in footnote 2.
**Sample sizes vary a little here due to differences in non-response between items; variations are, however, minor.

Table 6 Percent having studied each subject by region of birth and by region of residence*

REGION OF BIRTH		Demo-graphy	Mathe-matics	Socio-logy	Eco-nomics	Geo-graphy	Other
North Africa/Middle East	%	76.0	52.0	32.0	36.0	24.0	20.0
Sub-Saharan Africa	%	93.9	544.5	36.4	42.4	21.2	24.2
North America	%	68.4	18.8	60.9	24.1	6.8	23.3
Latin America	%	78.6	42.9	57.1	28.6	23.8	31.0
Asia	%	88.6	31.4	45.7	31.4	8.6	14.3
Europe	%	58.6	41.1	37.6	36.8	23.0	35.1
Oceania	%	90.9	18.2	18.2	9.1	27.3	18.2
Less developed countries	%	83.5	43.9	43.9	33.8	20.1	22.3
More developed countries	%	62.1	34.6	43.6	32.8	18.4	31.8
REGION OF RESIDENCE							
North Africa/Middle East	%	77.3	54.5	31.8	31.8	18.2	13.6
Sub-Saharan Africa	%	91.3	56.5	43.5	39.1	26.1	26.1
North America	%	67.5	22.7	57.8	27.9	6.5	20.8
Latin America	%	78.4	48.6	59.5	29.7	27.0	35.1
Asia	%	91.7	25.0	41.7	33.3	8.3	16.7
Europe	%	60.7	41.6	37.8	35.8	24.6	35.2
Oceania	%	83.3	22.2	27.8	27.8	11.1	16.7
Less developed countries	%	83.3	45.4	46.3	32.4	21.3	24.1
More developed countries	%	63.6	35.4	43.4	33.3	18.6	30.3

*Subjects grouped as indicated in footnote 2

Table 7 Combinations of disciplines of training*, and of practice in the last 5 years

Subject combination**	Studied %	Studied these + at least 1 other subject %	Practised in last 5 years %	Practised these + at least 1 other subject %
Demography				
alone	4.8	-	21.7	-
+ sociology	32.4	18.8	32.3	21.1
+ mathematics/ statistics	26.2	20.9	32.2	24.0
+ economics	23.0	13.9	15.3	13.1
+ geography	12.4	9.4	16.1	13.1
+ other	18.2	14.8	21.6	17.7
No demography				
+ sociology	11.3	6.5	4.6	2.7
+ mathematics/ statistics	10.5	6.5	4.8	3.5
+ economics	10.0	7.0	4.0	2.8
+ geography	6.4	2.6	3.2	1.5
+ other	11.5	5.7	5.6	3.5
N	*627*	*627*	*603*	*603*

*Subjects grouped as indicated in footnote 2

** Categories are not mutually exclusive and so percentages sum to more than 100.

Table 8 Year completed university education and duration of education

Year finished university education*	n	%	Median years of education (those not in education at time of survey)	% transferring to demography before first graduation or within 5 years of first graduation	n
Before 1960	26	4.1	5	15.4	26
1960-1969	75	11.9	6	16.2	74
1970-1979	152	24.2	7	21.2	140
1970-1989	140	22.3	7	25.0	140
1990-2000	174	27.7	7	33.1	172
Still in education	31	4.9		41.9*	31
Total	629	100	7	28.4	598

*Some current students resumed their studies after a previous spell of education

Table 9 Regions in which respondents have attended university

Region	First place of study		Second place of study		Third place of study		Ever studied in region	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
North Africa/Middle East	17	2.7	5	0.8	1	0.2	23	3.7
Sub-Saharan Africa	21	3.3	6	1.0	2	0.3	29	4.6
North America	140	22.3	69	11.0	11	1.7	222	35.3
South America	38	6.0	7	1.1	4	0.6	49	7.8
Asia	33	5.2	4	0.6	0	0.0	58	9.2
Europe	368	58.5	81	12.9	20	0.3	453	72.0
Oceania	12	1.9	5	0.8	2	0.3	19	3.0
Total	629	100	177	28.1	40	6.4	629	100

Table 10 Frequency of study abroad by country/region of birth

Country/region of birth	% studying abroad	N
More developed	25.4	492
France	9.3	103
Other parts of Europe*	35.4	240
USA	17.0	106
Canada & Oceania*	31.6	38
Less developed country*	78.8	137
Total	37.0	629

*Three respondents born in a less developed European country and one born in a less developed country in Oceania are omitted from these categories and included in the less developed country category.

Table 11 Education abroad and permanent emigration to developing and developed countries, by region of birth; respondents who were economically active at the time of survey.

	Born in			
	Less developed country		More developed country	
	Studied abroad	Did not study abroad	Studied abroad	Did not study abroad
Total	92 100%	29 100%	107 100%	326 100%
Emigrated	46 50.0%	2 6.9%	56 52.3%	34 10.4%
▪ to developed country	36 39.1%	0 0%	49 45.6%	30 9.2%
…of whom resident in a country where studied	*22 61.1%*		*35 71.4%*	
▪ to developing country	10 10.9%	2 6.9%	7 6.5%	4 1.2%
…of whom resident in a country where studied	*3 30.0%*		*4 57.1%*	
Did not emigrate	46 50.0%	27 93.1%	51 47.7%	292 89.6%

Table 12 Current and previous places of work (multiple answers possible)

	Of total sample			Of those economically active at each date		
	Curr-ently	10 years ago	20 years ago	Curr-ently	10 years ago	20 years ago
	%	%	%	%	%	%
National statistical office	10.8	12.8	11.2	11.4	15.5	18.2
Research centre	32.3	23.8	18.5	32.5	27.6	29.0
University	51.2	40.3	32.9	53.0	47.2	51.4
Central government	7.4	7.1	4.7	7.4	8.3	7.3
Local government	1.9	2.0	0.4	2.0	1.8	0.3
International organisation	8.9	9.3	6.5	9.1	10.8	10.1
Non-governmental organisation	5.0	3.5	1.9	5.3	4.3	2.4
Private foundation	1.6	2.6	1.5	1.6	2.9	2.1
Private company	4.8	5.3	1.5	5.3	5.4	2.4
Independent	3.2	1.6	0.9	2.4	1.6	1.4
Retired	3.4	0.7	0.2			
Student	7.6	12.8	18.5			
Not yet economically active	-	5.1	20.0			
N	619	546	465	551	445	286

Table 13 Previous workplaces of those currently working in various sectors

	Current place of work									
Ever/ always* in	University		Research centre		Government		Other		Currently inactive	
	n	%	n	%	n	%	n	%	n	%
University	135	42.9	108	54.0	42	34.7	51	48.1	35	51.5
Research centre	108	34.1	61	30.5	32	26.4	41	38.7	27	39.7
Government	77	24.3	45	22.5	52	43.0	34	32.1	172	25.0
Other	65	20.5	44	22.0	25	20.7	26	24.5	49	72.1
N	317	51.2	200	32.3	121	19.5	106	17.1	68	11.0

* Figures in each column refer to the proportions currently working in a sector who have ever worked in the row sector. Diagonal cells represent those who have worked exclusively in that sector.

Table 14 Time use : % of time spent on each activity (economically active respondents only)

Activity	Of all				Of those involved in activity				
	% none	Mean	Median	n	Mean	25th percentile	Median	75th percentile	n
Teaching	33.3	18.5%	10%	546	27.7%	10%	25%	40%	364
Research	9.5	47.1%	50%	548	52.0%	30%	50%	70%	496
Administration	35.6	16.9%	10%	548	26.2%	10%	20%	33%	353
Consulting	47.2	11.9%	5%	547	22.6%	10%	15%	25%	289

Table 15 Time use by sector of employment

Sector of employment	Teaching		Research		Consultancy		Administration		N
	% > 0 hours	Mean % time[1]	%> 0 hours	Mean % time[1]	%> 0 hours	Mean % time[1]	%> 0 hours	Mean % time[1]	
University	83.5	32.8	98.4	51.9	50.8	16.7	59.8	18.6	189
Research centre	70.4	20.3	97.5	63.5	49.2	17.6	58.0	20.0	116
Government	50.8	20.2	81.5	45.7	58.0	27.5	65.5	40.3	78
All others	44.2	28.0	81.0	52.6	59.0	34.1	51.4	29.9	54

[1] among those who participate in the activity