

# Sampling Recently Arrived Immigrants in the UK: Exploring the effectiveness of Respondent Driven Sampling

Tom Frere-Smith

Ipsos MORI

Renee Reichl Luthra

Institute for Social and Economic Research  
University of Essex

Lucinda Platt

London School of Economics and Political Science

No. 2014-25

July 2014



INSTITUTE FOR SOCIAL  
& ECONOMIC RESEARCH

## Non-Technical Summary

Immigrant integration is one of the most contested issues in contemporary Europe. A major reason for divergent claims on integration is the lack of cross-national, longitudinal data that enables the study of migrants close to the point of migration. However, surveying such recently-arrived immigrants raises specific challenges.

This paper evaluates the attempt to use Respondent Driven Sampling (RDS), a technique in which survey respondents refer other respondents, to sample migrants from Pakistan and Poland who had arrived in the UK within the previous 18 months, as part of a wider, four-country study. We discuss the rationale for employing RDS, and address how the application to new migrants differs from typical uses. Specifically, we discuss issues around the social networks of new migrants, their privacy concerns, and their interest in survey participation, central to the implementation of RDS. We outline how these characteristics were expected to differ in our target population; and describe how we therefore adapted RDS to provide a better fit.

Overall RDS was not effective for sampling recently-arrived migrants. While some of our adaptations, in particular changing survey protocol to allow more research control, were fruitful, we did not succeed in encouraging high recruitment. This was because our target populations were not well-connected to each other and they were reluctant to refer their connections. There were, however, differences between Poles and Pakistanis in the degree to which it was ineffective.

We conclude that RDS is unlikely to be suitable for accessing newly arrived migrants. However, in the absence of registers which can capture populations at point of entry there are no obvious alternatives.

**Sampling Recently Arrived Immigrants in the UK: Exploring the effectiveness of  
Respondent Driven Sampling**

**Tom Frere-Smith**  
Ipsos MORI

**Renee Luthra**  
University of Essex

**Lucinda Platt\***  
London School of Economics and Political Science

**\*Corresponding Author**

Professor Lucinda Platt  
Department of Social Policy  
London School of Economics and Social Policy  
Houghton Street  
London WC2A 2AE  
Email: l.platt@lse.ac.uk

**Abstract:** Surveying recently arrived immigrants in countries lacking a population register poses many challenges. We describe our adaptation of Respondent Driven Sampling, a chain-referral technique, to sample migrants from Pakistan and Poland who had arrived in the UK within the previous 18 months. Specifically, we discuss issues around connectedness, privacy, clustering, and motivation, central to the implementation of RDS. We outline techniques adopted and evaluate their success. We conclude that RDS is unlikely to be suitable for accessing newly arrived migrants. However, in the absence of registers which can capture populations at point of entry there are no obvious alternatives.

**Keywords:** new immigrants, surveys, RDS, immigrant networks, integration, non-response

**JEL:** F22, J15

**Acknowledgements**

The research reported in this paper was carried out as part of the Socio-Cultural Integration of New Immigrants (SCIP) project funded as part of the NORFACE (New Opportunities for Research Funding Agency Co-operation in Europe) Migration Programme 2009-13. Earlier versions of this paper were presented at the European Survey Research Association Conference 2013, and the IRiS International Conference 2014 and we are grateful to participants for the comments.

## **1. Introduction**

Immigrant integration is one of the most contested issues in contemporary Europe. Sceptics argue that the rapid increase in intra-EU migration, alongside concerns about the long-term future of settled populations, exacerbates ‘cultural’ divides between national and immigrant populations (Brubaker 2001; Card, Dustmann and Preston 2012; Joppke 2004). At the same time, multiple analyses point to the economic benefits offered by immigration and freedom of movement within the EU (Dustmann, Frattini and Halls 2010), and many paint a more sanguine picture of the long-term implications (Glennie and Pennington 2014; Kahanec and Zimmermann 2014; Nandi and Platt 2013). Unfortunately, despite a wealth of research on the integration of settled populations and the growing attention to the ‘new migration’ within the EU, it remains difficult to untangle the relationship between economic and cultural integration without capturing migrants at the point of or shortly after migration, when structural and social integration trajectories are developing and potentially informing each other. The lack of such data is itself due to the challenges involved in collection.

This paper outlines an attempt to gather such data on new immigrants to the UK. This study was carried out as part of a four country, two-wave, cross-national project designed to understand the early integration trajectories of new migrants. Specifically, the project aimed to capture recent arrivals or ‘flows’ of migrants from two distinct origin countries, who were expected to differ in socio-cultural integration dynamics: Poles, representing the 2004 EU Accession countries, migrating in the context of free movement; and those from a former source of labour migration (in the UK, Pakistan), who now, under current migration restrictions, are more likely to migrate for education or family re-unification.

The aim was to reach those who had arrived in the country within the preceding 18 months; and subsequently to re-interview them after a further 15-18 months. Because only eight countries in the world maintain population registers that can be used as a potential sample frame for recent immigrants, it is usually nearly impossible to employ standard probability samples of this group. Other potential sampling frames, such as existing surveys, provide a population that is already resident for longer than the 18 month cut-off by the time of surveying. Therefore the approach utilised in the UK was to adapt Respondent Driven Sampling (Cheong et al.) to attempt to reach a representative sample of Polish and Pakistani migrants in London, shortly after their arrival in 2009/10.

In this paper, we describe our experience of using RDS to sample migrant populations and discuss four dimensions in particular that need to be considered when applying RDS to (new) migrant groups. These dimensions are: a) recency of arrival and network size, b) trust and privacy, c) clustering and intra-group heterogeneity, and d) survey interest. We discuss how we adapted RDS to take account of the fact that our target population was recently arrived and likely to be less well-networked; but was not a hidden population in the sense of many populations for whom RDS has been used (such as drug-injecting sex workers; or those with HIV). We also discuss how we addressed likely sources of intra-group clustering that are likely to be common across migrant groups, as well as a potential lack of interest in participation.

The innovations that we introduced either before or during the early phases of fieldwork helped us to recruit a sample of 1,529 recently arrived Poles and Pakistanis. The sample was diverse and reflected some of the key characteristics we would expect from our general understanding of aggregate migration flows. However, overall we experienced limited

success with the sampling method, even if the picture differed between the Pakistani and Polish groups. We conclude that RDS is not necessarily the most appropriate way to reach new migrants, who are themselves both varied and mobile, in a diverse urban setting. However, systematic sampling of such specific immigrant populations is likely to remain difficult to achieve at a reasonable cost by any other means.

## **2. Background**

### *2.1 The socio-cultural integration of new immigrants in Europe in the period following the Great Recession*

Despite a high level of policy and academic interest in the processes and patterns of settlement, return migration, and economic and socio-cultural integration of mobile and ‘fluid’ populations, there is essentially no quantitative data that measures the adjustment and integration of immigrants in the critical early phases of immigration.

The lack of such data has inhibited research on this topic, particularly cross-national research that can provide additional purchase on questions of the relationship between social and structural integration processes in differing country contexts. Hence, an international team of migration scholars supported by funding from NORFACE (New Opportunities for Research Funding Agency Co-operation in Europe) set out to conduct a four-country (Germany, UK, Ireland and the Netherlands) survey of the socio-cultural integration of new immigrants. The aim was to describe and explain the nature, causes and consequences of new immigrants’ early socio-cultural integration patterns, charting individual-level dynamics through two observations over a three-year period (Gresser et al. 2014).

The choice of countries derived from their contrasting migration histories and integration regimes (Joppke 2004; Joppke 1999). The selection of migrant groups comprised one group of migrants from countries with long-standing labour migration connections to – and hence settled populations in – the destination country, i.e. Turks (in Germany and the Netherlands), Moroccans (in the Netherlands) and Pakistanis (in the UK); and a second that represented the ‘new migration’ from Eastern Europe: Poles (in Germany, Great Britain, the Netherlands and Ireland). Sampling recent immigrants from the specified groups within 18 months of arrival and following them up after a further 15-18 months, the study provides the only harmonised cross-national data<sup>1</sup> on the early socio-cultural integration of migrants, informing our understanding of early integration trajectories (Luthra, Platt and Salamònska 2014).

Conducting such a longitudinal new migrant survey was always going to be challenging (Jasso, Rosenzweig and Smith 1999); but, if successful, the payoffs in terms of knowledge of early socio-cultural integration process across contemporary immigrants in the period after the Great Recession would be large.

## *2.2 Current surveys: potential and limitations*

While there is substantial potential now in national – and to a lesser extent cross-national surveys – to analyse settled immigrant populations, these surveys are not without problems for this end. They typically contain small numbers of immigrants and minorities, exacerbated by under-representation and greater non-response relative to the majority, and hence they do not necessarily provide analytical samples of specific groups (Font and Mendez 2013b).

Questions will either not pick up on the specific aspects of immigrant groups’ experience (for example, collecting meaningful information on qualifications obtained in different countries

---

<sup>1</sup> Data for all four countries and both waves will be deposited with GESIS in Autumn 2014.

or isolating family networks that cross national boundaries), or they will have to be sufficiently general that they can apply to all potential groups. Furthermore, often by design, such surveys exclude recent arrivals. For example the UK Labour Force Survey sets a minimum six-months residence criterion (Campbell 2013). All will tend to over-represent longer term, more settled and less mobile populations, capturing “stocks” rather than “flows”. These problems are also faced by boost samples added on to existing national instruments (Berthoud et al. 2009; Howat et al. 2011), even if extra efforts to reach the minority populations are made in these cases.

An alternative has been to develop surveys of specific immigrant or ethnic minority populations. For example, the TIES project sampled second generation individuals from three ethnic origins in 15 European cities, utilising different methods in different countries. A telephone survey focusing on specific cities was also the basis for a study of Muslim minorities in three countries (Karlsen and Nazroo 2013). The MAFE project linked migrants to Europe from three African countries with origin country surveys (Beauchemin and González-Ferrer 2011; Obucina 2013). The European Union Minorities and Discrimination Survey carried out face-to-face interviews with migrant/minority groups in all 27 member states, utilising random route sampling, focused enumeration and network sampling (EU Agency for Fundamental Rights 2009). The US New Immigrant Survey, using government records of naturalisation applications, sampled adult immigrants who had achieved legal permanent status (Jasso, Rosenzweig and Smith 1999). In all of these cases, despite the richness of the data and the insights from the findings, they have faced substantial challenges of fieldwork implementation and maintaining the representativeness of the sample. See, for example, Beauchemin and González-Ferrer (2011).

These challenges are particularly acute when there is no straightforward sampling frame (Font and Mendez 2013a; Ipsos MORI / Institute of Education 2011). While countries with comprehensive register data can be relatively unconcerned about sampling issues (Myrberg 2013), other approaches are needed in countries such as the UK, where no such ethnically coded registers exist. Typically, area-based approaches with direct screening, sometimes in combination with focused enumeration, have proved fruitful, particularly where minority or immigrant groups of interest are relatively clustered (Erens 2013; Smith 1997). However, these are costly, requiring many times the target number of households to be screened to achieve the desired sample size, even with a carefully targeted design (Berthoud et al. 2009). They are, moreover, less effective – and more costly – if the groups of interest are less geographically clustered or if sub-populations, such as specific immigration statuses or more recent or more mobile populations are the target (Ipsos MORI / Institute of Education 2011).

One way of responding to these challenges in the absence of very substantial investment required for the ‘gold standard’ of address screening, is to use alternative methods that enable the specific population to be defined. For example, piggy-backing on existing surveys, following up those who have already been identified as belonging to the relevant minorities, can be an option (Erens 2013); but this is clearly not suitable for recent immigrants. Other studies have used more ad hoc methods, including careful quota sampling (Drinkwater and Garapich 2011), snowballing (Beauchemin and González-Ferrer 2011), and workplace sampling (Agadjanian and Zotova 2012); while name-identification has also shown some promise and works well for some groups (Font and Mendez 2013a). The greater economy of the identification of likely participants can allow the target sample to be reached more efficiently.

Recently, interest has developed in extending Respondent Driven Sampling (Cheong et al.) a variant of snowballing that averts (in principle at least) some of the problems of bias and lack of representativeness in typical snowball samples (Erens 2013), to the study of immigrant populations.

### *2.3 Respondent Driven Sampling*

RDS was developed by Douglas Heckathorn in conjunction with the AIDS prevention intervention program in the US (Heckathorn 1997), as a means to providing robust, representative information on hard to reach groups, in the absence of ways to obtain standard probability samples (Johnston et al. 2008; Lansky et al. 2007; Malekinejad et al. 2008; McCreesh et al. 2012). A modified chain-referral method, RDS involves the recruitment of target population members by other sample members, and most applications to date have been in the field of HIV and of drug-injecting populations, in both the global South and North.

Instead of sampling individuals from a sampling frame, RDS seeks to sample individuals from a target population *network*, assumed to encompass all members through social ties. The sampling process begins with the recruitment and interviewing of *seed* members, who then go on to recruit  $N$  (usually  $N \leq 3$ ) *referrals* using  $N$  recruitment coupons with unique code numbers that trace the link between recruiter and recruited. All respondents are asked for the size of their personal social network (PSN) in the target population to ascertain relative likelihoods of selection into the sample. These referrals are then interviewed and encouraged to recruit further referrals, expanding the sample until the target size is reached and the social network of the population of interest has been sufficiently penetrated to ensure *equilibrium* across important characteristics of interest. Equilibrium for a characteristic of interest – for

instance gender - is attained when recruitment chains reach both men and women in accordance to their actual representation in the population, which of course is typically unknown. It is adjudged to have been reached when further sampling ceases to alter the existing proportions of men and women in the sample. Both seed and referral participation is incentivized in a dual incentive structure: one sum is provided for the interview and additional incentives, usually smaller, for each recruitment effort that yields a referral interview. In this way recruitment can occur completely independently of researchers, enabling anonymity in participation, and encourages peer pressure to participate (to secure the secondary incentive).

RDS aims to address issues of representativeness underlying chain-referral methods through four innovations. First, gathering of PSN size and referral chain information allows researchers to adjust for the fact that chain referral methods tend to oversample well-connected respondents. Second, chain-referral methods usually over-represent population members most similar to the initial respondents, as respondents are likely to refer others who are like themselves. By restricting the number of coupons assigned to each respondent, RDS aims to encourage longer recruitment chains, with greater degrees of separation between the seeds and final referrals, thereby ideally increasing the diversity of the sample. By gathering information on recruitment chains, researchers are, moreover, able to observe the degree to which homophily – people referring others like themselves – is present in their sample. Statistical programs are available that allows adjustments for both homophily and PSN size in RDS data. Third, the use of coupons ensures anonymity for respondents who are part of a stigmatised group, and should thus encourage wider and more random referral. Finally, non-response is not observed in chain-referral methods, and will bias the sample if it is non-

random. In RDS, the dual incentive structure combined with the use of social networks to ensure recruitment from trusted others is expected to reduce non-response bias.

#### *2.4: RDS and migrant surveys*

The method works particularly well with populations who may wish to remain anonymous to the researcher but who are well networked and whose members are known to one another. At first glance this seems to fit the bill for migrants (Tyldum and Johnston forthcoming 2014). Many migrant populations can identify others as members of their own group, and the very act of migration operates through social network channels (Kalter 2011; Massey et al. 1999). Migrants may have undocumented or tenuous legal status in the country of destination, and may therefore be more likely to avoid interviews from unknown others (Agadjanian and Zotova 2012; Montealegre et al. 2013). Since non-response tends to be higher among minority and foreign born populations and many countries lack a sampling frame for immigrants, particularly recently arrived immigrants, chain referral methods may be the only option for immigrant-specific surveys. RDS presents the unique possibility to not just reach recently arrived immigrant populations but also to gather sufficient social network information to obtain weighted estimates of actual population parameters.

As a result, migration-related surveys using RDS have multiplied in recent years, including surveys of migrant health (Montealegre et al. 2012; Montealegre et al. 2011; Strathdee et al. 2008; Wagner et al. 2011), workplace practices (Alsos and Eldring 2008; Bernhardt et al. 2009), and transnational behaviours (Friberg and Horst forthcoming 2014; Horvath 2012; Napierala and Gorny 2013). RDS offers many advantages that may enable cost-effective, and representative, sampling of immigrants. However, the method is based on a number of assumptions, critically that the target population represents a well and densely connected

population, and one without impregnable barriers, for example between men and women, and with some motivation to participate or recruit others. These assumptions can present challenges for the study of recently arrived immigrants. In the next section we review these issues before discussing the ways we attempted to address them.

### **3. RDS for Studies of New Immigrants**

The appropriateness of RDS for migrant populations will vary depending on the presence of alternative options, characteristics of the immigrant community of interest, and characteristics of the country of destination. We identified four central characteristics across which migrant groups (in different destinations) are likely to vary, that we needed to consider when deciding how to use RDS, namely i) recency of arrival, ii) trust and privacy, iii) clustering and intra-group heterogeneity, and iv) interest.

#### *3.1 Recency of arrival and network size*

The success of RDS is strongly facilitated by a densely networked target population. The recency of arrival of the immigrant group is likely to be one of the strongest predictors of the density of network ties, namely because better established immigrant groups will have ethnic institutions, ethnic press, and other channels of communications that less established groups lack (Park and Iceland 2011; Wright, Ellis and Parks 2010; Yancey, Ericksen and Juliani 1976). Moreover, recently arrived immigrants are less likely to have large network sizes in their new community, simply because they have only recently settled – and moreover are more likely to have shorter expected durations of stay than settled migrants (Friberg 2012) – which also results in smaller network sizes.

As a result, two thirds of our sample of Pakistani immigrants reported that they did not have a single person they were close to in the city; while among Poles, one third had no one they felt

close to. We will describe the networks of our immigrant samples in greater detail below, however, it is clear that in general, very recent, or very transient immigrant arrivals may lack the dense social networks necessary for the successful implementation of RDS.

This is likely to be exacerbated when the flows themselves are small. During the time of fieldwork in 2011 the impact of the Great Recession had dramatically reduced migration flows from Poland: see Figure 1. The number of new Polish registrants for national insurance numbers (needed for employment) in Greater London (the location for our study) dipped from a high of nearly 45,000 in 2007/2008 to only 18,000 in 2010/2011. The Pakistani figures followed a slightly different trajectory, but fewer Pakistanis were migrating – or able to migrate – specifically for work.

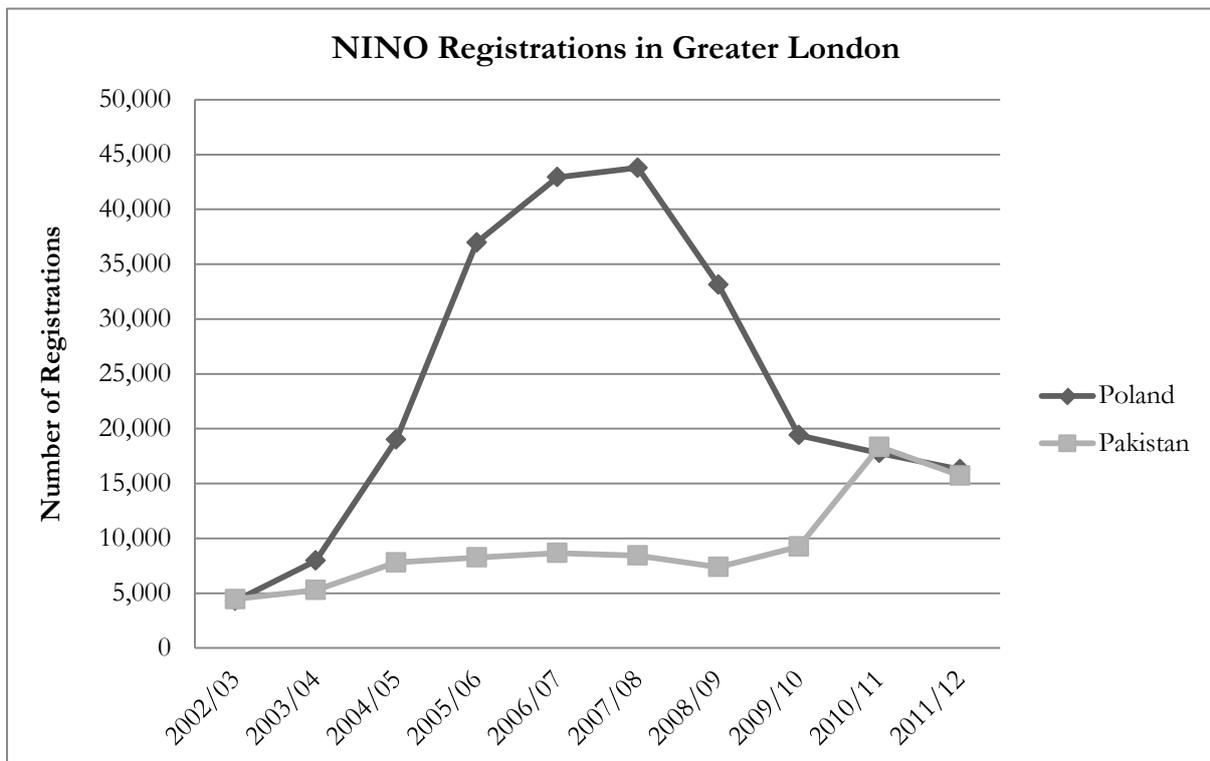


Figure 1: Rates of National Insurance Number (NINO) registrations among those from Poland and Pakistan 2002/3-20011/12

Source: UK Department for Work and Pensions  
 100% extract from National Insurance Recording & Pay As You Earn System

Time Series - Year Of Registration Date Years are shown as financial year (1st April - 31st March).

### *3.2 Trust and privacy ("unseen" referral process of RDS vs. contacting directly; surveying in-home vs. surveying centres)*

RDS was originally designed for populations which may prefer to remain anonymous to survey researchers. Clearly, the degree to which an immigrant group will prefer anonymity is contingent on a variety of factors, most importantly their legal status and their degree of stigma in the receiving community. Undocumented immigrants are highly vulnerable and unlikely to wish to be surveyed, even if their legal status is not questioned. They may only want to be approached by trusted others, and decline to be interviewed in their home or provide identifying details (De La Rosa et al. 2012; Montealegre et al. 2012). Even immigrants with formal legal status, however, may be distrustful of “officials” or interviewers that are unknown to them. Immigrants whose presence is highly politicized or who may be the victims of discrimination or harassment may have very low response rates in surveys (see (Deding, Fridberg and Jakobsen 2008)). However, for immigrants who face a more neutral context of reception, issues of privacy and trust may be much less salient.

Though public attitudes in the UK favour reducing immigration, and the salience of immigration as an issue has been much higher in the UK than elsewhere in Europe in recent years (Duffy and Frere-Smith 2014) the UK’s history of migrant settlement, particularly in London, means the host communities are familiar with the experience of receiving newcomers. In fact, surveys repeatedly show that Londoners in particular are much more sanguine in their attitudes towards immigration (Duffy and Frere-Smith 2014). The UK also has some of the most robust anti-discrimination legislation in Europe, and findings from the

EU-Minorities and Discrimination Survey, 2008, showed Eastern European migrants in the UK are less exposed to discrimination, assault and harassment, compared to the EU average among selected minority/migrant groups (EU Agency for Fundamental Rights 2009).

Polish migrants enjoy rights to freedom of movement within the European Union as citizens of a member state, and hence legal status should not affect their survey participation.

Nevertheless Polish workers were initially required to register for the Workers Registration Scheme (WRS) within a month of joining a new employer. The scheme was compulsory, required a fee to be paid, and registrations took time to process, resulting in many working (illegally) without registering, although no migrant was ever prosecuted for not having registered. Failure to register on the WRS may have had the potential to create privacy concerns among some Polish migrants, but they would be far weaker than the privacy concerns of groups RDS has traditionally been used with. Moreover, the scheme ended in April 2011, a third of the way through our fieldwork period.

For Pakistani immigrants, visa overstaying is likely to be the main route to illegal residency, but any visa overstayers were likely by definition to be outside our target population of recent (<18 months) migrants. Hence, we felt issues to do with legal residency were unlikely to create significant privacy concerns among Pakistani migrants eligible for the study.

### *3.3 Clustering*

Immigrant groups which are strongly clustered into subgroups – for instance by sex, socioeconomic status, or language or ethnicity – may be difficult to comprehensively survey with RDS. An RDS survey of low wage workers in New York, Los Angeles and Chicago

found that even among Central American immigrants who shared a language (Spanish) and worked in similar occupations, national origin barriers served as cleavages within the network that impeded obtaining a representative sample (Milkman, Gonzales and Narro 2010). Similarly, social class may split an immigrant group. For instance, Cubans in Miami are strongly divided into pre- and post-Muriel, elite and mass refugee waves (Portes and Jensen 1989). Immigrants tend to have bifurcated class distributions, with challenges reaching both the low and the high end of the socioeconomic spectrum. In our survey, we encountered strong divides between Pakistani student and non-student populations, as well as between men and women, which resulted in a severe underrepresentation of women and overrepresentation of students. By contrast, among Poles we accessed both men and women and a more varied distribution of activity statuses.

### *3.4 Interest*

A final area of concern for all RDS studies, but perhaps particularly for RDS studies of immigrants, is the level of interest in participating in the study. Among studies of populations at high risk of HIV, the most frequently cited motivations for survey participation is not the monetary incentive but access to health services and HIV testing that are frequently provided in such settings (Gile, Johnston and Salganik forthcoming ). In migration studies where such additional benefits are not offered, it is important to assess whether there is sufficient interest in the survey, and the appropriate level of incentive to offer to ensure willing participants. Immigrants, in particular recently arrived immigrants, may have severe constraints on their time, which limit their willingness to participate, and make incentives offered insufficiently attractive. Findings from focus groups conducted with Polish and Pakistani migrants during a scoping phase showed many felt that time spent at work and the general 'busyness' of life could act as a barrier to participation. Those hidden populations with particular needs, such

as those at risk of HIV or sex workers may possess a kind of ‘subterranean solidarity’ that leads them to recognise the importance of the research *to the group*, providing further motivation to participate beyond the more immediate benefits on offer. Recent immigrants may have less obvious reasons for ‘buying in’ to the aims of a multi-purpose survey without specific outcomes likely to benefit the wider group.

#### **4. Adapting RDS for the study of new migrants**

We therefore recognised from the outset that there were many aspects of RDS that we would need to adjust to maximise its effectiveness for sampling our target populations.

##### *4.1 Design adaptations for recency of arrival and network size*

As noted, perhaps the biggest challenge in implementing RDS for our target population was the extent to which it was (not) well networked, and where recency and dispersion of the samples was likely to limit our ability to target specific self-contained communities. In addition, with recent arrivals we could not expect to be able to identify a small number of key individuals to provide a way into the community. To seek potential solutions to these issues, we conducted a “pre-test” of 10 respondents (four Poles and six Pakistanis), diverse in demographic characteristics, to scope out the likely network sizes we might expect respondents to report during the main stage of fieldwork.

Three of our Polish respondents in the pre-test said they did not know anyone who met the criteria, reporting that the Polish people they knew in London were primarily more settled immigrants who had lived in Britain longer than 18 months. Pakistani respondents were more likely to know eligible people. The young men in particular reported knowing multiple contacts and were happy to recommend them as well as provide detailed information about

their background. All respondents reported that the majority of their contacts lived in their local area. The pre-test referral process produced two further interviews, one Polish and one Pakistani.

We therefore introduced several innovations at the onset of our study. First, rather than using all of London (a city of eight million people) as a single sampling unit, as is commonly done in metropolitan level RDS studies, we initially identified specific areas with relatively high expected concentrations of our target groups to act as a proxy for network bounds. To identify potential areas of concentration of recent immigrants, we relied on National Insurance Number (NINo) registrations. A NINo is required for everyone the first time they obtain a formal job. NINos are hence able to identify clusters of new immigrants from particular countries of origin, who began a period of formal employment, and had not previously worked in the UK. These clusters are both at a small enough geographic level to pinpoint specific locations (Parliamentary Constituencies, or PCONs, representing around 40,000 households); and can identify constellations of Polish and Pakistani immigrants who may be recent immigrants by virtue of recent NI registration (although they may have spent much time in the country prior to obtaining formal employment). The majority of clusters of potential new migrants were in London, and we therefore selected PCONs with the highest (estimated) concentrations in these areas for seed recruitment. We thereby aimed to increase the likelihood of referral based on close neighbourhood ties, which in turn was expected to be more likely to fulfil the requirement of a single network. When recruitment proved much slower than anticipated, we removed these initial restrictions, however, and expanded the target area to Greater London.

Second, we aimed from the outset to recruit a very large number (100) of diverse seeds, in anticipation of both clustering (see further below) and limited networks. Following standard RDS practice (Abdul-Quader et al. 2006), we limited the number of potential referrals for each seed to three. However, as the results below show, our referral rates were extremely low and hence we continued recruiting ‘seeds’ through the project. Our concerns about lack of connectedness proved to be well founded and, particularly for the Poles, we struggled to establish chains.

Finally, in response to the pre-testing result that many new migrants did not know other new migrants, it was decided that respondents should additionally be allowed to recruit one migrant who had lived in Britain for more than 18 months. These ‘pseudo-seeds’ would not be interviewed, as they did not fit the survey criteria, but would be used as channels to find and recruit other eligible migrants. This was to allow the recruitment chains to continue via a third party even when new immigrants were not well connected to each other.

To recruit ‘pseudo-seeds’, respondents were asked whether they knew a ‘longer-term migrant’: someone living in their local area, from the same country of origin as the respondent who had lived in Britain for more than 18 months. We used a version of the coupon for respondents to give to any such pseudo-seeds they knew. We offered a referral incentive to the pseudo-seed if they could in turn recommend someone from our target population.

#### *4.2 Design adaptations: Privacy and Trust*

We considered our target groups in the UK less “hidden” in the typical sense of RDS. This meant we could adapt the traditional RDS approach to remove some of the inconveniences to

participating and improve the level and speed of response to the survey. These adjustments comprised in-home interviewing (built in from the outset); and researcher-led-engagement (introduced early into fieldwork).

We offered in-home, rather than site-specific interviewing that is typical of RDS to facilitate ease of participation. The coupons that were given by respondents to others eligible for the survey requested that the recipient contact the research team to arrange an interview at their home or another private location suitable to them. This was seen to remove the inconvenience of having to travel to an interview site, which, given the cost and possible distance of travelling to a site, particularly in London, could have inhibited participation.

A further adaptation was made to the way in which contact was established with referred persons. Asking eligible persons to get in touch directly through the use of the coupons did not initially generate sufficient responses. To increase the speed and rate of response to the survey, the research team began calling seed respondents to ask for the contact details of the persons they knew who were eligible for the study. The research team then called the referred persons directly to screen their eligibility and invite them to take part.

Alongside the call-backs, we amended the questionnaire so that interviewers asked respondents directly for the contact details of persons they knew who were eligible for the study. These contact details were then passed to the research team to make contact. The call-backs and questionnaire adaptation represented an inversion of the typical RDS engagement process between respondent and research team, placing the initiative in the hands of the researchers rather than respondents. While researcher-led engagement was a significant modification of the standard approach it was not considered a wholesale departure:

respondents were still paid an incentive if they successfully referred someone else, and social network information was still gathered for the purpose of determining network sampling eligibility.

#### *4.3 Design adaptations: Clustering*

Given the likely extent of clustering within our target populations, we adopted two key adaptations in building the samples. First, as noted, we substantially increased the target number of initial seeds to reach into multiple points of entry in the populations. Second we used loose quotas to constrain the seed samples and ensure some degree of diversity: every four seeds in an interviewer's assignment had to include at least: 1 person aged 30 or over and one person under 30; one woman and one man; one working and one not working. Interviewers were not allowed to recruit seed respondents who knew each other.

Nevertheless, early in the fieldwork process it became apparent that our recruiters were not reaching Pakistani women in particular. Following a focus group held six months into fieldwork to review recruitment, including Pakistani women who had participated in the survey, we ensured that only women interviewers approached Pakistani women as seeds. We also emphasized to survey participants that referrals could be women within their own household.

#### *4.4 Design adaptations: Interest*

Our instrument was an interviewer administered multi-topic personal interview, which took around one hour to complete and covered a wide range of domains. Despite its emphasis on migration experience, we did not expect that our respondents would have intrinsic interest in the study motivating them to participate. Hence we gave consideration to other aspects of the

study that might enhance interest in taking part. We set the interview incentive at a fairly generous £10 (around 60 per cent above the UK hourly minimum wage) and offered £5 for each referral. These rates were endorsed in our pre-test and focus group. Nevertheless, once it became clear that the initial seed respondents were not referring, we increased the incentive for referring to £10, substantially more than incentives commonly used with RDS methodology.

Interviews were offered in both English and Polish / Urdu, based on existing information on English language fluency among both Polish and Pakistani populations. In line with this, we originally fielded a diverse field force including UK- as well as Pakistani- and Polish-origin interviewers. However, we soon realised that origin country language skills were also important for establishing trust and achieving contacts, and that certain interviewers proved to be particularly successful in seed recruitment. The interviewer field force was therefore significantly reduced from 19 original interviewers to a core group of the six most successful Polish- or Urdu-speaking interviewers. Overall, 15 per cent of total interviews were conducted in English (28 per cent of interviews with Pakistanis and two per cent of interviews with Poles).

A further issue was maintaining momentum between referral details being collected and the follow-up interview. Referred persons initially were directed to call a central number to provide their contact details, which were recorded on a contact sheet that was then allocated to an interviewer to arrange an appointment. This process introduced an unnecessary delay, and hence, as well as incorporating the collection of referral contact details into the main questionnaire script, blank contact sheets were provided to interviewers to enable them to immediately interview referrals.

Given the breadth of London and the geographic dispersion of our target populations, we were also concerned with potential lack of awareness of the study and its aims. Adverts were placed in Polish newspapers, other media sources and on online forums in an attempt to draw greater attention to the study amongst specifically the Polish community. A press release related to the study was also distributed to relevant ethnic news sources, and picked up for radio interview by a London Asian-focused radio station.

Finally, current respondents were sent text messages with reminders to recruit, and were provided with regular “keep in touch” newsletters informing them of initial results of the survey. These aimed to stimulate their interest in the research and share the findings with other members of the target community.

By these various means we attempted to facilitate the application of RDS and ease the recruitment of our target sample.

## **5. Results**

Overall, we achieved a sample of 1,529 respondents. Of these, however, only 460 or one-third were RDS referrals (Figure 2). Hence our attempt to use RDS to sample the two new migrant populations resulted in only limited numbers of referrals and chains (Figure 3). There were however some clear differences between our two groups of Poles and Pakistanis, as Figure 2 and Figure 3 illustrate, which suggest that the method is more (or less) suitable in specific contexts, even with a relatively difficult to survey group of recent migrants.

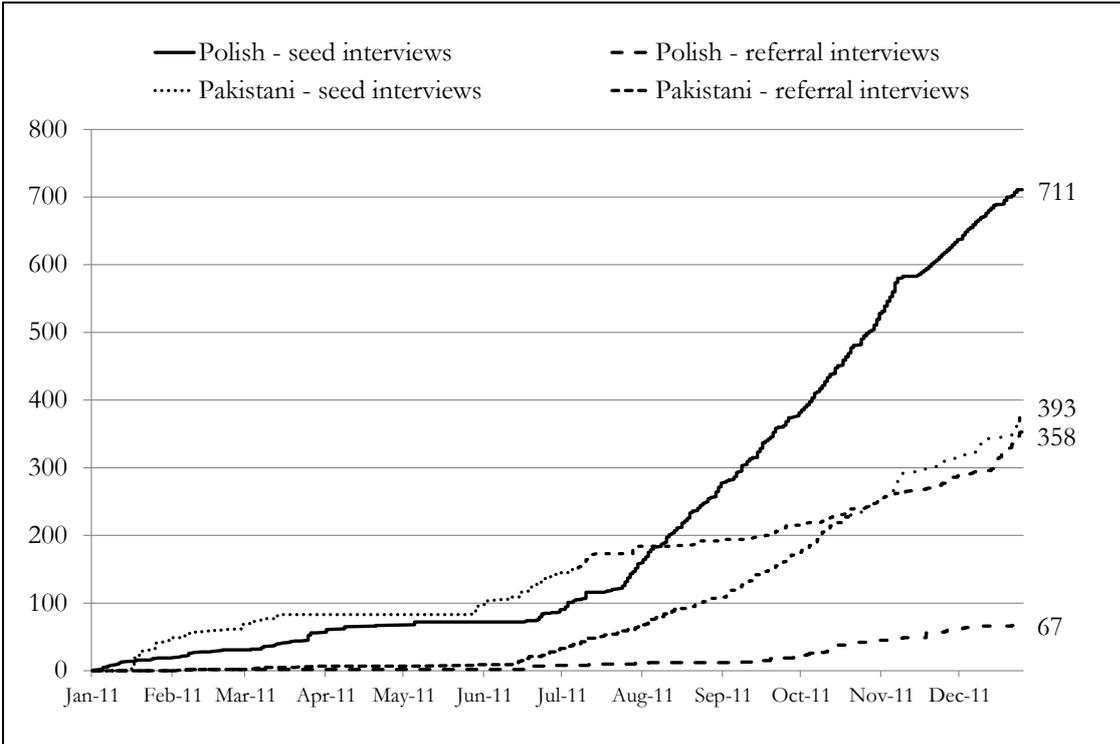


Figure 2: Overall numbers of seed and referral interviews across the fieldwork period, by country of origin

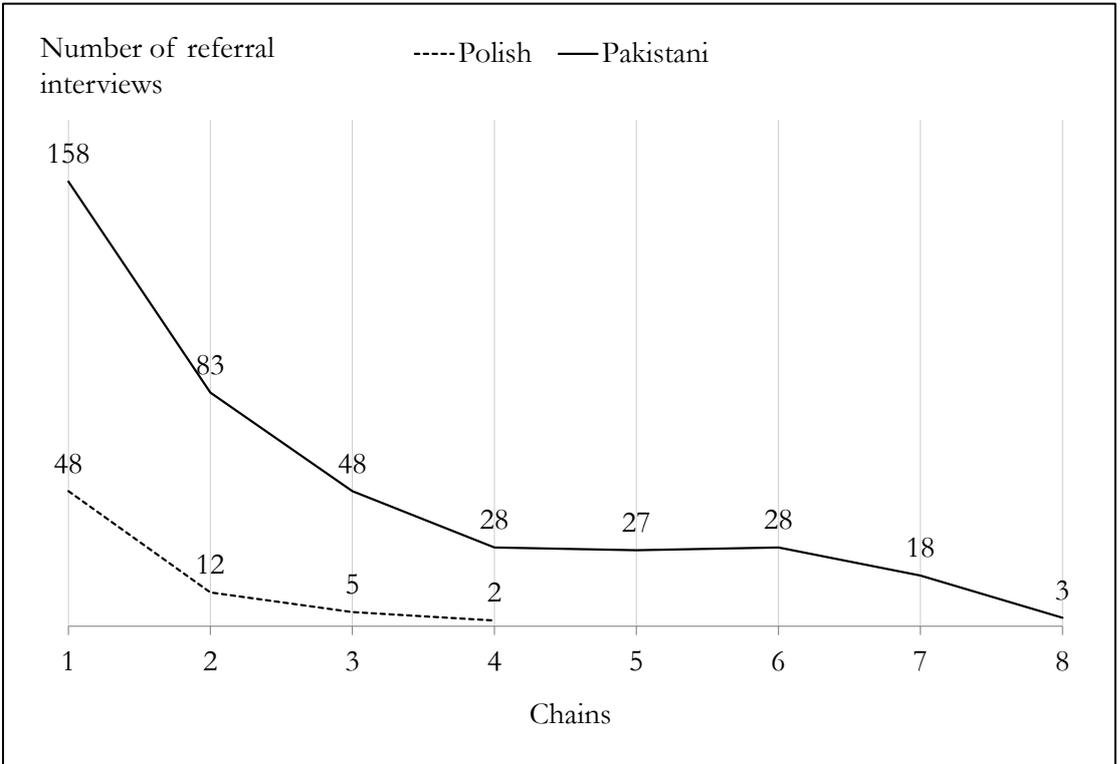


Figure 3: Depth of referral chains among referral interviews, by country of origin

Figure 2 shows the progress of seed and referral interviews over the course of fieldwork. The change to interviewer-led engagement in July can be clearly seen to have an impact on the number of Pakistani referral interviews achieved, but still not to the extent aimed for; and it had little effect on the number of Polish referral interviews. The sample size required for both the groups in the study had to be made up from seed respondents recruited using free-find and other techniques. Seed respondents constituted 91 per cent of the final Polish sample and 48 per cent of the Pakistani sample.

Consistent with this overall pattern, the depth of chains varied between the two groups, with deeper chains among the Pakistani group, as shown in Figure 3. Indeed a small number of chains among the Pakistanis reached to the sixth or further point on the chain, accounting for close to 50 interviews.

In what follows we attempt to unpick from our data both why the results were disappointing and the causes of the clear differences between the two groups.

### *5.1: Network size and response: findings*

The clearest challenge to implementing RDS was the potential for lack of connectedness across the sample. Following the completion of fieldwork we were able to ascertain the extent to which our respondents did lack networks of eligible recruits. Table 1 shows the reported network size of Polish and Pakistani migrants. Close to half of Polish migrants reported not knowing anyone who, for a fact, met the eligibility criteria. A smaller, though still substantial proportion (38 per cent) of Pakistani respondents reported the same.

Table 1: Reported network size by country of origin

	Pakistanis		Poles	
	%	N	%	N
Overall network size*				
0	38	282	49	384
1	4	28	15	114
2	5	37	12	97
3	25	190	19	149
4	3	19	1	9
5	3	23	1	8
6+	23	172	2	17
Total	100	751	100	778

\* *Question: “And of the (CO) people you have been in contact with in about the past three weeks, how many do you know FOR A FACT arrived in Britain in the past 18 months?”*

Poles, who are more easily and cheaply able to enter and exit the UK than Pakistani migrants, had a slightly shorter average length of stay than Pakistanis: 7.7 months in contrast to 10.5. We investigated whether differential length of stay was implicated in the differences between the two groups this by regressing network size on length of stay. But we found no evidence that a longer period of stay was linked to greater connectedness to recently arrived compatriots for either Pakistanis or Poles.

Beyond limited network size, however, there was also a reluctance or an inability to recruit – though this was more extreme among Poles than Pakistanis. In addition to the large proportion of survey respondents who did not know anyone eligible (44 per cent of the sample), among those 56 per cent who did have an eligible connection, three quarters of them (77 per cent) did not recruit.

Unfortunately, with such a large number of seed respondents reporting that they did not know any person who recently arrived, and such low referral rates, our attempt to limit the sampling area to improve connectivity, and hence referral, was not effective. We therefore decided to adopt more inclusive Greater London sample a short way into fieldwork.

The use of “pseudo-seeds” was also ineffective. Polish rather than Pakistani migrants were more connected through older migrants (migrants who had been in the UK longer than 18 months), with 55 per cent of Pakistanis not knowing any older migrants. When they did know older migrants, respondents were reasonably willing to take coupons for them (agreement of around two-thirds); but this did not translate into interviews, as no referral interviews were achieved by this route.

Thus we appeared to face obstacles of lack of connectedness combined with some failure to refer that was particularly acute for the Poles, and on which our adaptations made little impact.

### *5.2: Privacy and Trust: Findings*

The fact that our two target migrant groups were not “hidden” populations afforded us greater flexibility in the implementation of RDS. In order to reduce the costs to participation and provide a greater level of researcher control over the recruitment process, we implemented: at home interviewing, call-backs for recruitment information, and the inclusion of recruitment contact details in our questionnaire.

The review focus groups held after six months of fieldwork (beginning of July 2011) suggested that the at-home and flexible interview program adopted at the survey onset was appreciated by survey participants, and thus we continued with this approach. Our second innovation, seed call-backs, commenced in May 2011. As seen in Figure 2, recruitment picked up considerably when respondents were asked directly to provide referral contact details.

These were partly successful, yielding 65 interviews, or 15 per cent of our total referral interviews (460). Much more successful, however, was the change to the script to collect contact details at the outset.

Judging that privacy issues applicable in standard RDS contexts were less likely to apply for our new immigrant groups, and that gathering contact details directly reduced respondent burden as well as increased control, we changed the interviewing script to allow direct collection and recording of referral information. The new script was fielded from the end of May 2011. This accounts for the flatlining for April and May shown in Figure 2, as fieldwork was effectively suspended for this time. Referral interviews started again based on the researcher-led approach from June. The change to the procedure provided further insight into the point at which the referral process broke down: lack of familiarity on how to contact potential referees, reluctance to refer, and/or reluctance to participate among referrals. Among our 164 respondents who participated in the first six months of the survey, only 5 per cent were referrals rather than seeds (or 17 seeds for every referral). This meant that the recruitment rate among those who knew someone eligible was 1 for every 8, given that just under 50 per cent of them knew someone eligible.

We can then look at the development of response among those who had the new script. Table 2 is taken from those responding to the new script and focuses on the approximately half of Poles and under two-thirds of Pakistanis who said they knew someone who met the eligibility criteria. It is worth noting that, among these, the numbers subsequently claiming that they did not know anyone eligible was negligible, which is reassuring.

Table 2: Responses to script changes among those who stated they knew someone who met eligible criteria

	Poles %	Pakistanis %
Knew contact details	18.2	39.0
Didn't know anyone who met criteria	1.4	1.5
Didn't know contact details	44.0	55.1
Refused	36.4	4.4
N: all those saying they knew someone eligible	368	410

Note: the option of providing contact details was not conditional on having claimed knowledge of someone who met criteria, and therefore contact details were provided additionally from a small number of people who had previously said they knew no-one who met eligibility criteria

Table 2 shows that among those who knew someone eligible for the survey, only 18 per cent of Poles and 39 per cent of Pakistanis were in fact able – or willing – to provide contact details for follow up. The two groups diverge strongly in their refusal rates, with only five per cent of Pakistanis but 36 per cent of Poles refusing to provide contact details. This finding provides insight into the very low referral rates among Poles in early fieldwork, as privacy concerns are clearly more important for this group. It also suggests that our alteration of the RDS procedure was likely to have been somewhat less appropriate for Poles than for Pakistanis, who appear to be less sensitive about sharing contact information.

We can pursue this issue further by considering the quality of the contact information, the response among referrals and the ultimate recruitment rate with this script and the callbacks. We have shown that there was some resistance to providing contact details and, a substantial share who did not know the details. However, when respondents *did* provide contact details, they were generally reliable. Of the persons referred, we were unable to make contact with 12 per cent. A further 10 per cent were found to be ineligible and 10 per cent refused. In total, 58 per cent of referred persons completed an interview, which rises to 75 per cent among eligible contacts.

Overall this means that in this second phase (and excluding the very few who continued to be reached by coupons) there was 1 follow up for every 2 seeds overall (compared to 1 for 17 in the early phase) and one for every 1.7 seeds who confirmed they knew someone eligible (rather than for every 8 seeds in the early phase). This, then demonstrates a dramatic level of improvement in referral and was responsible for the marked upswing in referrals (and total interviews) shown above in Figure 2. By country of origin the rate of referrals after the change in script amounted to 1 referral for every 11 seeds for the Poles and to 1 referral for only 0.7 of a seed for Pakistanis.

While the changes in the script and the abandonment of the principle of non-identification did not resolve all the problems of connectivity and resistance highlighted above, it can be seen as an effective adaptation for a non-hidden and relatively sparsely distributed (and connected) population. It has the additional advantage associated with more conventional sampling procedures that it gives us some information (in terms of the characteristics of referrers) about those who did not respond.

### *5.3: Clustering: Findings*

Despite the large number of seeds recruited and the effort to recruit diverse seeds, our sample was skewed across two dimensions: gender and main activity status. As can be seen in Table 3 below, our Pakistani sample was dominated by men and also by students. The Polish sample was skewed towards unemployed men. While we do not by definition have a reference population of new migrants to compare against, it is likely that the distributions more closely approximate to those in the Labour Force Survey for relatively recent arrivals.

Table 3: Sex Distribution and Primary Activity Status, by country of Origin (column %)

	Pakistanis		Poles	
	SCIP	LFS (immigrated after 2008)	SCIP	LFS (immigrated after 2008)
Women	20.8	53.8	59.5	56.9
Men	79.2	46.2	40.5	44.1
Employed (SCIP) / Economically Active (LFS)	11.4	43.3	62.1	83.8
Non-employed (SCIP) / Inactive (LFS)	88.6	56.7	37.9	16.2
N	751	90	778	272

The second adaptation was limiting our interviewers only to co-ethnics with language capabilities, and importantly including a Pakistani woman interviewer to increase the recruitment of Pakistani women. Keeping only successful interviewers helped to increase our recruitment but could not solve the problem of skewed sampling towards men among Pakistanis. This was, ironically, partly due to the greater success of RDS among this group, but its weakness in reaching Pakistani women: 5 per cent of the Pakistani referral interviews were with women compared to 38 per cent of the seed interviews.

#### 5.4: Interest: Findings

Interest in the study is crucial to the success of RDS. To a degree this can be achieved using incentives, but the incentive cannot be so large that it leads to people lying about their eligibility ((Johnston and Sabin 2010)). Hence, the aims, objectives and content of the study have to have a motivational pull on respondents so that when taken with the offer of an incentive, the scales are weighted in favour of taking part.

It was not possible to calculate response rates for the study. However, it was possible to record the outcome for each of the contact details of referred persons collected in the questionnaire. As noted above, refusals accounted for only 13 per cent of people who were contacted and found to be eligible for the study. Moreover, most respondents (84 per cent of Pakistanis and 94 per cent of Poles) were happy to be contacted about the study again in the future. Among those who did not want to be contacted again, not living in the UK at the time of the next interview was the most cited reason, as shown in Figure 4. Lack of interest does not feature highly; but while intrusiveness / privacy is the least cited reason, around half of those who refused re-contact were concerned about providing confidential information, suggesting some suspicion of data security or the uses to which it might be put.

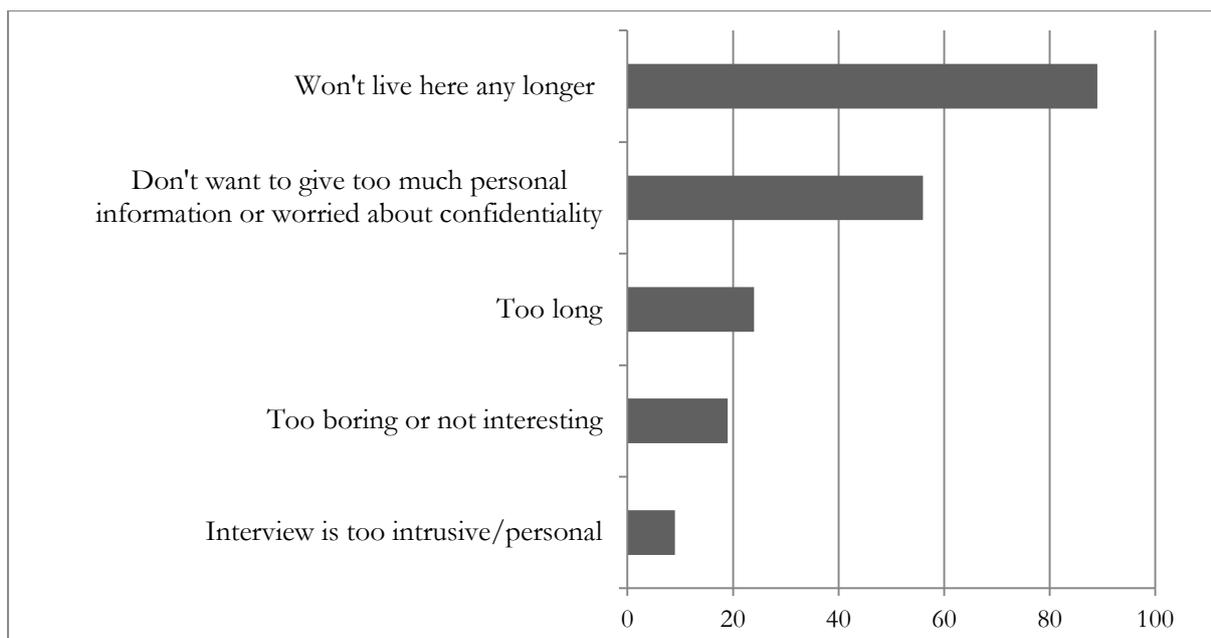


Figure 4: Reasons for refusal to recontact, all who refused. N=197.  
 Note: respondents could give more than one reason for refusal

An additional measure to increase interest and reach out to those beyond the constrained networks of our existing contacts was to place an advertisement in the Polish Express, a widely distributed Polish newspaper in London, soliciting interviews. The advertisement ran for 2 weeks and garnered 8 expressions of interest, of which 5 were eligible.

In summary we can show the extent to which our adjustments to the sample prompted an increased rate of referral. Table 4 summarises the relative success of each of the methods attempted to achieve referral interviews.

Table 4: Methods for achieving referral interviews, by country of origin

		Coupons	Callbacks	Questionnaire recruitment	Emergency contact sheets	Total referral interviews
Polish	N	9	10	10	38	67
	Row %	13.43	14.93	14.93	56.72	100
Pakistani	N	17	55	271	50	393
	Row %	4.33	13.99	68.96	12.72	100

Questionnaire recruitment was found to be more successful among Pakistanis than Poles, which is understandable in light of the findings on connectivity and refusal discussed above. The emergency contact sheets were the most successful method of securing referral interviews among Poles, suggesting that the immediate turn-around made possible was reinforced by the presence of the referrer.

## 6. Conclusions and reflections

What do we then conclude about the potential for sampling recent immigrants through chain referral methods based on networks of similarly eligible individuals? Overall, we found that the implementation of RDS in the UK context for a survey of recent migrants was only very partially successful. We obtained substantial and comparably sized samples of both groups, resulting in samples which have facilitated our understanding of processes of early integration across new migrant populations and revealed the diversity of origins and early trajectories (Luthra, Platt and Salamònska 2014). However, we did not achieve chains that

enabled us to assess the representativeness of our data. Our resulting sample, while informative, cannot be used to evaluate prevalences among new migrants.

There were clearly some features of our target sample that inhibited our success and which were impossible to overcome, even with adaptations. These were principally the lack of networks of eligible referrals, alongside some resistance to referral. However, we also identified some valuable adaptations to the method, suited to a dispersed and non-hidden population that might usefully be exploited by other studies of migrants. Most significant was the direct collection of contact details. Where contact details were both available and supplied we achieved a rather high response – nearly 60 per cent overall and 75 per cent of those eligible. This adaptation reduced the cost (time and travel) to respondents of participating and was also, in principle, better suited to those not participating in the public sphere – such as those looking after home and children.

In a number of other areas, our adaptations and responsive design were less fruitful. There seemed some degree of resistance among respondents both to referring and to revealing contact details, which may be linked to mistrust in the face of anti-immigration sentiment at a national level in the UK and lack of identification with the aims of the study. How to make such a study more immediately relevant is a challenge. Steadily decreasing responses rates is an issue for contemporary surveys, particularly general purpose surveys, and across the spectrum of studies and study designs. It is possible that higher incentives might have been engaging, but our qualitative work did not suggest this was the case and could have introduced other problems such as fraud, and different biases, such as more homogenous chains. Overall the final approach we reached was, we considered the best in the circumstances, but was insufficient to raise referral rates or increase the chains.

RDS may therefore not be the most appropriate approach to sampling in this context. However, it remains the case that other than ad hoc approaches, systematic sampling of such specific immigrant populations is likely to remain difficult to achieve at a reasonable cost in countries such as the UK, which do not have registers which can capture immigrants immediately upon their arrival. The original constraints that motivated the use of RDS still hold: the ‘gold standard’ of screening target areas is infeasibly expensive, especially when using multiple criteria, such as duration of residence as well as specific country of origin; and it still involves likelihood of higher than expected misses, and partial coverage. Careful proportional quota sampling overlaying as many data sources as possible, as used by (Drinkwater and Garapich 2011) may be the most suitable for single population studies, but is again hard to achieve for recent migrants and where there is more than one target group. Overall there is no obvious alternative that we should have considered or which might be preferable for accessing migrants in the critical period of orientation.

If RDS was ineffective for our purposes in supplying our target sample, there are nevertheless some broader issues arising from our attempt that may be worth considering for future studies of hard-to-sample, but not hidden, populations. We would note that the results for Pakistani men were more promising than for the highly mobile and flexible Poles – or the more “hidden” Pakistani women. This indicates that it is important to take account of the likely mobility of target groups (in our case, high for Poles, low for Pakistanis for whom return migration is more difficult and costly) alongside the limitations presented by cultural expectations (in our case re-inforced by a visa regime through which Pakistani women enter primarily through family re-unification).

On the other hand, the Polonia study in Dublin (Mühlau, Kaliszewska and Röder no date) suggested that RDS could work with an established, rather than fluid, Polish population. Here, some of our difficulties may have been linked to the fact that we were surveying at a time of recession. Not only did this decrease the flows of our arrivals and hence their networks, but it may also have impacted their certainty about their likely duration or position in the UK and hence their connectedness and responsiveness. If a population can be expected to be more stable, it may be worth considering some element of chain referral within the sample. We would note that more geographically concentrated collections of migrants, even recent arrivals, are likely to respond better, since contact is likely to be more frequent and social pressures for referrals and trust are both likely to be enhanced. However, such populations are likely to be by their nature more homogenous, and have less to tell us about diverse migration flows.

If diversity and mobility of small populations are themselves central to the desired sample and research questions they can address, as with recent, and especially within EU, migrants, it will be hard to make RDS deliver. Some degree of pragmatism and trade-off between representativeness and coverage is likely to continue to be needed.

## 9. References

- Agadjanian, Victor, and Natalya Zotova. 2012. "Sampling and Surveying Hard-to-Reach Populations for Demographic Research: A Study of Female Labor Migrants in Moscow, Russia." *Demographic Research* 26(5):131-50.
- Alsos, K., and L. Eldring. 2008. "Labour mobility and wage dumping: The case of Norway." *European Journal of Industrial Relations* 14(4):441-59.
- Beauchemin, Cris, and Amparo González-Ferrer. 2011. "Sampling international migrants with origin-based snowballing method: New evidence on biases and limitations." *Demographic Research* 25:103-34.
- Bernhardt, A., R. Milkman, N. Theodore, D. Heckathorn, M. Auer, J. DeFilippis, A.L. González, V. Narro, J. Perelshteyn, and D. Polson. 2009. "Broken Laws, Unprotected Workers." *National Employment Law Project. New York: NELP.*

- Berthoud, Richard, Laura Fumagalli, Peter Lynn, and L. Platt. 2009. "Design of the Understanding Society ethnic minority boost sample. Understanding Society Working Paper Series: 2009-02." Colchester: Institute for Social and Economic Research, University of Essex.
- Brubaker, Rogers. 2001. "The return of assimilation? Changing perspectives on immigration and its sequels in France, Germany, and the United States." *Ethnic and Racial Studies* 24(4):531-48.
- Campbell, Stuart. 2013. "Over-education among A8 migrants in the UK." in *DoQSS Working Paper No. 13-09*, edited by Department of Quantitative Social Science. London: Institute of Education.
- Card, David, Christian Dustmann, and Ian Preston. 2012. "Immigration, wages and compositional amenities." *Journal of the European Economic Association* 10(1):78-119.
- Cheong, Pauline Hope, Rosalind Edwards, Harry Goulbourne, and John Solomos. 2007. "Immigration, social cohesion and social capital: A critical review 10.1177/0261018307072206." *Critical Social Policy* 27(1):24-49.
- De La Rosa, Mario, Rosa Babino, Adelaida Rosario, Natalia Valiente Martinez, and Lubna Aijaz. 2012. "Challenges and Strategies in Recruiting, Interviewing, and Retaining Recent Latino Immigrants in Substance Abuse and HIV Epidemiologic Studies." *The American Journal on Addictions* 21(1):11-22.
- Deding, Mette, Torben Fridberg, and Vibeke Jakobsen. 2008. "Non-response in a survey among immigrants in Denmark." Pp. 107-21 in *Survey Research Methods*: Sage.
- Drinkwater, Stephen, and Michal Garapich. 2011. *The TEMPO Survey of Recent Polish Migrants in England and Wales. WISERED/WDR/004*. Swansea: WISERD.
- Duffy, Bobby, and Tom. Frere-Smith. 2014. *Perceptions and Reality: public attitudes to immigration*. London: Ipsos MORI.
- Dustmann, Christian, Tommaso Frattini, and Caroline Halls. 2010. "Assessing the fiscal costs and benefits of A8 migration to the UK." *Fiscal Studies* 31(1):1-41.
- Erens, Bob. 2013. "Designing High Quality Surveys of Ethnic Minorities in the UK." in *Surveying Ethnic Minorities and Immigrant Populations: Methodological Challenges and Research Strategies*, edited by Joan Font and Monica Mendez. Amsterdam: IMISCOE / Amsterdam University Press.
- EU Agency for Fundamental Rights. 2009. *European Union Minorities and Discrimination Survey, Main Results Report*: European Union Agency for Fundamental Rights.
- Font, Joan, and Monica Mendez. 2013a. "Introduction." Pp. 11-41 in *Surveying Ethnic Minorities and Immigrant Populations: Methodological Challenges and Research Strategies*, edited by Joan Font and Monica Mendez. Amsterdam: IMISCOE / Amsterdam University Press.
- (Eds.). 2013b. *Surveying Ethnic Minorities and Immigrant Populations: Methodological Challenges and Research Strategies*. Amsterdam: IMISCOE/Amsterdam University Press.
- Friberg, Jon Horgen. 2012. "The Stages of Migration. From Going Abroad to Settling Down: Post-Accession Polish Migrant Workers in Norway." *Journal of Ethnic and Migration Studies* 38(10):1589-605.
- Friberg, Jon Horgen, and Cindy Horst. forthcoming 2014. "Respondent Driven Sampling and the structure of migrant populations." in *Applying Respondent Driven Sampling to Migrant Populations: Lessons from the Field*, edited by Guri Tyldum and Lisa Johnston. London: Palgrave Pivot.
- Gile, K.J. , L.G. Johnston, and M.J. Salganik. forthcoming "Diagnostics for Respondent-driven Sampling." *Journal of the Royal Statistical Society*.

- Glennie, Alex, and Jenny Pennington. 2014. *Europe, Free Movement and the UK*. London: Institute for Public Policy Research.
- Gresser, Anne, Diana Schacht, Claudia Diehl, Marcel Lubbers, Peter Muhlau, and Lucinda Platt. 2014. *Socio-Cultural Integration Processes among New Immigrants in Europe (SCIP): Methodological Report*. Konstanz: University of Konstanz.
- Horvath, K. 2012. "National numbers for transnational relations? Challenges of integrating quantitative methods into research on transnational labour market relations."
- Howat, Nick, Oliver Norden, Joel Williams, and Emily Pickering. 2011. *2010 Ethnic Minority British Election Study: Technical Report*. London: TNS BMRB.
- Ipsos MORI / Institute of Education. 2011. *A Feasibility Study for a Survey of Immigrants. Occasional Paper 92*. London: Home Office.
- Jasso, G., MR Rosenzweig, and J.P. Smith. 1999. "The New Immigrant Survey in the US: The Experience over Time." *Migration Information Source*: [www.migrationinformation.org](http://www.migrationinformation.org).
- Johnston, L.G., M. Malekinejad, C. Kendall, I.M. Iuppa, and G.W. Rutherford. 2008. "Implementation challenges to using respondent-driven sampling methodology for HIV biological and behavioral surveillance: field experiences in international settings." *AIDS and Behavior* 12:131-41.
- Johnston, Lisa G, and Keith Sabin. 2010. "Sampling hard-to-reach populations with respondent driven sampling." *Methodological Innovations Online* 5(2):38-48.
- Joppke, C. 2004. "The retreat of multiculturalism in the liberal state: Theory and policy." *British Journal of Sociology* 55:237-57.
- Joppke, Christian. 1999. *Immigration and the Nation-State*. Oxford: Oxford University Press.
- Kahanec, Martin, and Klaus F. Zimmermann. 2014. "How skilled immigration may improve economic equality." *IZA Journal of Migration* 3(2):1-13.
- Kalter, Frank. 2011. "Social capital and the dynamics of temporary labour migration from Poland to Germany." *European Sociological Review* 27(5):555-69.
- Karlsen, Saffron, and James Y. Nazroo. 2013. "Influences on forms of national identity and feeling 'at home' among Muslim groups in Britain, Germany and Spain." *Ethnicities* 13(6):689-708.
- Lansky, A., A. S. Abdul-Quader, M. Cribbin, T. Hall, T. J. Finlayson, R. S. Garfein, L. S. Lin, and P. S. Sullivan. 2007. "Developing an HIV behavioral surveillance system for injecting drug users: the National HIV Behavioral Surveillance System." *Public Health Rep* 122 Suppl 1:48-55.
- Luthra, Renee, Lucinda Platt, and Justyna Salamònska. 2014. *Migrant diversity, migration motivations and early integration: the case of Poles in Germany, the Netherlands, London and Dublin*. CReAM Discussion Paper 12/14. London: Centre for Research and Analysis of Migration, UCL.
- Malekinejad, M., L.G. Johnston, C. Kendall, L.R.F.S. Kerr, M.R. Rifkin, and G.W. Rutherford. 2008. "Using respondent-driven sampling methodology for HIV biological and behavioral surveillance in international settings: a systematic review." *AIDS and Behavior* 12:105-30.
- Massey, D.S., J. Arango, G. Hugo, A. Kouaouci, A. Pellegrino, and J.E. Taylor. 1999. *Worlds in motion: Understanding international migration at the end of the millennium*: Oxford University Press, USA.
- McCreech, N., S.D.W. Frost, J. Seeley, J. Katongole, M.N. Tarsh, R. Ndunguse, F. Jichi, N.L. Lunel, D. Maher, and L.G. Johnston. 2012. "Evaluation of respondent-driven sampling." *Epidemiology* 23(1):138.
- Milkman, Ruth, Ana Luz Gonzales, and Victor Narro. 2010. "Wage Theft and Workplace Violations in Los Angeles: the failure of employment and labor law for low-wage

- workers." University of California, Los Angeles: Institute for Research on Labor and Employment.
- Montealegre, J.R., J.M. Risser, B.J. Selwyn, S.A. McCurdy, and K. Sabin. 2012. "Prevalence of HIV Risk Behaviors among Undocumented Central American Immigrant Women in Houston, Texas." *AIDS and Behavior*:1-8.
- Montealegre, J.R., J.M. Risser, B.J. Selwyn, K. Sabin, and S.A. McCurdy. 2011. "HIV Testing Behaviors Among Undocumented Central American Immigrant Women in Houston, Texas." *Journal of Immigrant and Minority Health*:1-8.
- Montealegre, Jane R, Jan M Risser, Beatrice J Selwyn, Sheryl A McCurdy, and Keith Sabin. 2013. "Effectiveness of respondent driven sampling to recruit undocumented Central American immigrant women in Houston, Texas for an HIV behavioral survey." *AIDS and Behavior* 17(2):719-27.
- Mühlau, Peter, Monika Kaliszewska, and Antje Röder. no date. *Polonia in Dublin: Report No.1: Demographic overview*. Dublin: Trinity Immigration Initiative, Trinity College Dublin.
- Myrberg, Gunnar. 2013. "Surveying migrants and migrant associations in Stockholm." in *Surveying Ethnic Minorities and Immigrant Populations: Methodological Challenges and Research Strategies*, edited by Joan Font and Monica Mendez. Amsterdam: IMISCOE / Amsterdam University Press.
- Nandi, A., and L. Platt. 2013. *Britishness and Identity Assimilation among the UK's Minority and Majority Ethnic Groups*. Understanding Society Working Paper 2013/8. Colchester: : University of Essex.
- Napierala, Joanna, and Agata Gorny. 2013. "Assessment of effectiveness of RDS sampling method in migration studies." in *Examining Migration Dynamics: Networks and Beyond*. Oxford University
- Obucina, Ognjen. 2013. "Occupational trajectories and occupational cost among Senegalese immigrants in Europe." *Demographic Research* 28(19):547-80.
- Park, Julie, and John Iceland. 2011. "Residential segregation in metropolitan established immigrant gateways and new destinations, 1990–2000." *Social Science Research* 40(3):811-21.
- Portes, Alejandro, and Leif Jensen. 1989. "The enclave and the entrants: Patterns of ethnic enterprise in Miami before and after Mariel." *American Sociological Review*:929-49.
- Schwartz, Seth J. 2005. "A new identity for identity research." *Journal of Adolescent Research* 20:293-308.
- Smith, Patten. 1997. "Appendix: Survey Methods." in *Ethnic Minorities in Britain: Diversity and Disadvantage*, edited by Tariq Modood, Richard Berthoud, Jane Lakey, James Nazroo, Patten Smith, Satnam Virdee, and Sharon Beishon. London: Policy Studies Institute.
- Strathdee, Steffanie A., Remedios Lozada, Victoria D. Ojeda, Robin A. Pollini, Kimberly C. Brouwer, Alicia Vera, Wayne Cornelius, Lucie Nguyen, Carlos Magis-Rodriguez, Thomas L. Patterson, and Cuete for Proyecto El. 2008. "Differential Effects of Migration and Deportation on HIV Infection among Male and Female Injection Drug Users in Tijuana, Mexico." *Plos One* 3(7):e2690.
- Tyldum, Guri, and Lisa Johnston. forthcoming 2014. *Applying Respondent Driven Sampling to Migrant Populations: Lessons from the Field*. London: Palgrave Pivot.
- Wagner, K. D., R. A. Pollini, T. L. Patterson, R. Lozada, V. D. Ojeda, K. C. Brouwer, A. Vera, T. A. Volkman, and S. A. Strathdee. 2011. "Cross-border drug injection relationships among injection drug users in Tijuana, Mexico." *Drug and alcohol dependence* 113(2-3):236-41.

Wright, Richard, Mark Ellis, and Virginia Parks. 2010. "Immigrant Niches and the Intrametropolitan Spatial Division of Labour." *Journal of Ethnic and Migration Studies* 36(7):1033-59.

Yancey, William L, Eugene P Ericksen, and Richard N Juliani. 1976. "Emergent ethnicity: A review and reformulation." *American Sociological Review*:391-403.