Using web-based interactive mapping to inform an ecological systems understanding of young migrants’ support networks

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Abstract. This article presents the theoretical development, application and researcher experience of using a web-based interactive mapping application on internet-connected tablets during fieldwork conducted with young people from migrant and refugee backgrounds in Adelaide, South Australia. The fieldwork contributed to a study which used Bronfenbrenner’s ecological systems theory to explore how young people from migrant and refugee backgrounds (re)develop their social networks. The article contributes to discussions about novel data collection methods that are derived from and have the capacity to extend theory to answer specific research questions. The article concludes that while using a web-based interactive mapping application requires a degree of participant technological literacy, it can be an effective and appropriate method for research with recent young migrants with transnational networks and has the potential for broader application in any studies with any highly mobile populations or dispersed networks.

Keywords: migrants; young people; interactive maps; ecological systems theory; social networks; Bronfenbrenner.

1 Introduction

This article presents the theoretical development, application and researcher experience of using web-based interactive maps on internet-connected tablets during fieldwork conducted with young people from migrant and refugee backgrounds in Adelaide, South Australia. It contributes to discussions about novel data collection methods that are derived from and have the capacity to extend theory to answer specific research questions (Darbyshire, MacDougall, & Schiller, 2005). We sought to explore how newly arrived young people from refugee backgrounds (re)develop their social networks, which are critical to young people’s health and wellbeing, in their country of resettlement (Sampson & Gifford, 2010; Viner et al., 2012). We aimed to develop culturally and ethically appropriate data collection methods that could explore the dynamics of social networks using an ecological systems approach (Bronfenbrenner, 1981, 2005; Bronfenbrenner & Evans 2000; Mackenzie, McDowell, & Pittaway, 2007; Williams & Sheehan, 2015).

Following a brief outline of the types of methods that have been used to explore young people’s understandings of their social networks, we then discuss ways in which social researchers use mapping techniques to increase understandings of how social relationships develop across space. From there, we consider how Bronfenbrenner’s (1981, 2005) ecological systems theory may be used to explain the (re)development of new migrants’ social networks across time and space. Finally, we demonstrate how interactive geographical mapping data collection techniques can be used to operationalise an ecological systems model that offers explanations of how social, temporal and geographical processes and linkages are maintained across continents as well as interconnecting in the (re)development of young migrants’ networks.

2 Literature review

2.1 Mapping social networks in space

Young people’s social networks have been examined using numerous mapping methods, including concentric maps, social circles, sociograms and geographical maps (Baumgartner, Burnett, DiCarlo, &
2.2 Ecological perspectives on social network creation

Bronfenbrenner’s (1981, 2005) ecological systems theory offers potential for exploring how time and space may be conceptualised as interconnected in the (re)development of young migrants’ social networks (Bronfenbrenner & Evans 2000; Williams & Sheehan, 2015). Bronfenbrenner’s model proposes that people develop in the context of their social worlds, encompassing four interconnected layers, with the developing person in the centre. The closest layer to the centre is the microsystem, comprising the settings in which the developing person spends most of their time and has frequent interactions and reading of maps is socially, economically and culturally bound (Williams, 2006). Asking participants to draw maps depicting the various places they go in their daily lives is one way to overcome the challenge of distance (Gifford et al., 2007; Morrow, 2001; Powell, 2010). Yet, such methods do not always demonstrate accurately the distances young people travel, the time their travelling takes (Freeman, et al., 2016), or their virtual connections.

Photovoice and mobile methods have also been used to explore the everyday lives of young people. Photovoice commonly involves participants being given cameras to take photos of their everyday places, activities and/or places of importance, which they then discuss with researchers (Darbyshire et al., 2005; Morrow, 2001; Sampson & Gifford, 2010). Mobile methods involve either walking or driving around participants’ local area/s, with participants describing their daily activities, journeys to various places, and social networks (MacDougall & Darbyshire, 2018; Nansen et al., 2015).

Technological advances mean that we can now explore young people’s everyday mobilities without needing to travel, hence the term virtual mobile methods (MacDougall & Darbyshire, 2018). Interactive mapping techniques, such as the Visualisation and Evaluation of Route Itineraries, Travel Destinations, and Activity Spaces (VERITAS) mapping system which utilises the Google Maps application in conjunction with interview/survey questions, have been used to explore young people’s use of space (Bhosale et al., 2017; Chaix et al., 2012). In addition, two recent studies have used Google Earth to investigate young people’s mobility (Danby, Davidson, Ekberg, Breathnach, & Thorpe, 2016; Islam, Moore, & Cosco, 2016). These latter studies have thus far been limited to asking young people to find their local places using Google Earth and have not to our knowledge been used to explore transnational networks.

While the creation and reading of maps is socially, economically and culturally bound and has historically only been accessible to the wealthy and powerful (Panek, 2015), new digital technologies have to some extent democratised the realm of map literacy (Gordon et al., 2016; Powell, 2010). This is evident in geographical studies which show that young people are able to interpret maps, and use them to describe their movements (Badland, et al., 2011; Jung, 2015). Nevertheless, there remains a digital divide, whereby the exposure to personal computers, smartphones and tablets, and access to the internet, remains inequitable across the social gradient (Alam & Imran, 2015; Newman, Biedrzycki, & Baum, 2012). We therefore approached this study mindful that our participants might not be experienced technology users.
face-to-face interactions (called the proximal processes) such as home, school, work or sports teams (Bronfenbrenner, 1981; Renn & Arnold, 2003). The mesosystem represents the developing person’s social network: the ‘complex of interrelations within the immediate setting’ such as home, school, extra-curricular activities and peer group (Bronfenbrenner, 1981 p. 4). The third layer, the exosystem, is where ‘linkages and processes’ occur between multiple settings, ‘at least one of which does not ordinarily contain the developing person’ for example the conditions of parental employment (Bronfenbrenner, 2005 p. 148). For young migrants, the exosystem may include resettlement country policies that affect them directly with or without their knowledge but over which they have little influence. Australian examples include a requirement that new young migrants from non-English speaking nations participate in 12-18 months of English-learning school, and policies that influence where migrants settle, supports available to them, and how they can use public spaces and facilities (Carmona, 2010; C. Due, Riggs, & Augoustinos, 2014). The outer layer is the macrosystem, which represents the broader social, economic, historical and political context (Bronfenbrenner, 2005). In the Australian context, this would include current immigration policy and practice, plus the legacy of the White Australia policy (Jayasuriya, Walker, & Gothard, 2003).

Over time, Bronfenbrenner (1981, 2005) extended his theory to include the ways in which biology and environment work together (the bioecological model) and the chronosystem to incorporate internal (e.g. puberty) and environmental life transitions (e.g. changing schools, divorce) that occur over time. He described the ways in which ecological transitions would take place when there was a shift in ‘role or setting’ (1981, p. 6), for example where there may be unfamiliar peers and/or adults. Where transitions involve most or even all layers changing, for example through migration, it therefore makes sense that a young person’s understanding of the world, including social norms and how to make friends, is disrupted (Renn & Arnold, 2003; Umaña-Taylor, Alfaro, Bámaca, Guimond, & Buehler, 2009).

Bronfenbrenner’s model is predominantly structural, yet he also discussed a developing person’s capacity to ‘remold reality’, suggesting that a young person may also have some agency in influencing or changing their environment/s (1981, p. 10). This turn became more evident in his later work which focussed on what he called the Process-Person-Context-Time (PPCT) model (Bronfenbrenner 2001, 2005). How young migrants redevelop and remould their ecological systems is likely to impact on their achievement of their potential in their resettlement country over time, for example the extent to which they experience discrimination, or are welcomed and supported (Porter & Haslam, 2005; Priest et al., 2013).

Of interest to our study of the experience of young people from migrant and refugee backgrounds was Bronfenbrenner’s explicit aim for discovery-based research to provide: ‘bases for the design of effective social policies and programs that can counteract newly emerging developmentally disruptive influences’ (2001, p. 6964). Whilst Bronfenbrenner was referring to influences of technology, such as an increased pace of life, or both parents in paid work, more recently ecological frameworks have been used to explain other types of developmental disruption, such as disaster (van Kessel, MacDougall, & Gibbs, 2015) and homelessness (Williams & Sheehan, 2015). However, the application of Bronfenbrenner’s framework in the context of geographical disruption associated with young refugees’ migration has not, to our knowledge, been extensively explored.

Bronfenbrenner did not explicitly include geography in his model, except where it related to demography (e.g. post/zip code) or settings (e.g. school, home) (Williams and Sheehan, 2015). Our study sought to extend Bronfenbrenner’s model to include young refugee migrants’ accounts of space and travel in two domains: physically between places (e.g., home, school, public spaces) in their country of resettlement (by public transport, walking, cycling); and virtually within their countries of origin (e.g., using digital technology). We therefore aimed to understand how young people from
migrant and refugee backgrounds negotiate, (re)establish and maintain social networks, within their country of resettlement and across continents, in their new ecological context.

3. Methodological reflections

3.1 Navigating culture and ethics

The purpose of the research from which we draw our methodological reflections was to examine the influence of social networks and support on the wellbeing of young people from migrant and refugee backgrounds who had recently arrived in Australia. The project sought to obtain young people’s own perspectives on the structure of their networks, and how they offered protection from the hardships associated with resettlement and potential marginalisation. The research project considered three key questions: a) who do young people from refugee backgrounds include in their social networks, and how do they engage with them across time and space? b) how do they negotiate demands placed on them by their support networks, and what resources do they draw on in negotiating these demands? and, c) how do they experience social networks in the context of striving to fulfil their aspirations? In addressing these questions, we sought to support the young people in positioning themselves as competent, reflexive agents who are experts in their situations (James, 2007; MacDougall & Darbyshire, 2018). Consistent with an ecological systems model, we also sought to allow young people to construct both local and transnational networks.

We obtained ethics approval from an Australian National Health and Medical Research Council approved social and behavioural human research ethics committee prior to commencing the study. In our application to the ethics committee, we acknowledged how cultural and language barriers as well as unequal power relationships can reduce the extent to which informed consent may be obtained by applying standard university research ethics processes (Block, Warr, Gibbs, & Riggs, 2013; Mackenzie et al., 2007). We found, like other researchers in this field, that consent was an iterative process and our participants were more comfortable signing consent forms after they participated and knew what they had told us (see Block et al., 2013; Moore, McArthur, & Noble-Carr, 2017).

Study participants were sourced through a local non-government organisation (NGO) that delivered programs and support to newly arrived young people. NGO staff advised that the best approach with young men would be via a soccer program the NGO was managing. We also conducted a parallel study with young women, which at the time of writing was incomplete. Our initial fieldwork with the young men comprised rapport-building sessions where the authors attended and volunteered at the soccer program and volunteered to help. The purpose of these sessions was to introduce ourselves, explain our research aims and spend time familiarising ourselves with potential participants. Over a period of nine months, we continued rapport-building in between each data collection session at the weekly soccer program so that our study participants were familiar and comfortable with us.

Over the course of rapport-building sessions, the soccer coach and his assistants facilitated introductions and provided useful background information on the soccer program participants. The soccer coach identified young men from diverse cultural backgrounds, all of whom had arrived in Australia within the previous 12 months, who were willing to talk with us. We talked extensively with the volunteer assistant coaches, some of whom had refugee backgrounds, and who spoke several of the young men’s languages. The assistant coaches gave advice on the most appropriate ways to introduce ourselves, explain the purpose of the research, the research techniques, University ethical requirements and how to seek meaningful consent. They also advised on the types of issues that might arise over the course of fieldwork and how to seek support for participants should they require it.

3.2 Visual methods and engaging young people

Research involving young people from refugee backgrounds requires ethical considerations, beyond those of consent, to be built in to the methods (Block et al 2013). We wished to reduce potential
barriers posed by written and verbal language commonly encountered in research with migrant and refugee background young people (Gifford, et al., 2007; Mackenzie, et al., 2007; Block, et al., 2013). Visual methods have been demonstrated to be highly useful in engaging young people from migrant and refugee backgrounds in research and for eliciting rich data, particularly where language barriers exist (MacDougall and Darbyshire, 2018; Block, et al., 2013).

We staged our data collection activities in a similar way to Minichiello’s (1995) funnelling technique in interviews. This technique involves starting interviews by exploring broad, non-personal questions and then moving toward the more personal. Following the initial rapport building sessions, we conducted an image ordering group session first, followed by an interactive map-based interview (using Google Maps) conducted in groups of one or two, one week later. We then followed up with a third session, again using interactive map-based interviews four months later. Lastly, we conducted feedback interviews a further five months later, after which time the participants had been through a transition from an English language-focussed school to local state secondary schools. The current paper focusses on the interactive map-based interviews.

The study sample comprised six young men from migrant or refugee backgrounds (aged 14-20) who had been living in Australia between three and twelve months. Five of the participants participated as described below while the sixth participant, who was also the eldest (20 years) opted to be interviewed separately. Two young men had come from Ethiopia; two had Congolese and two had Sudanese backgrounds. Participants were from African countries, came from complex family backgrounds and lived in diverse households. All except two participants had spent significant time in one or more African refugee camps and could barely remember, or did not want to discuss, their original homes.

The first data collection session was conducted in a small city falafel restaurant at which we were the only patrons. The group comprised five participants, the three authors and the soccer program coordinator. After introductions and ice-breaker exercises, which involved asking the participants to tell us who their favourite soccer players were and to choose fake names (to protect their confidentiality), our first activity involved image/symbol-ordering exercises. Participants were handed large A3 sheets with 48 symbols and images that previous studies found engaged similar-aged and background participants (Block, et al., 2013; MacDougall and Darbyshire, 2018; Gifford, et al., 2007), and asked to select five images that were meaningful to them and discuss why they chose them and how they related to their goals and aspirations. While initial questions during introductions produced yes/no or otherwise brief answers, we found that this process elicited more comprehensive information, and opened up the conversations (see also Block et al., 2013; Sinha & Back, 2014).

3.3 Virtual mobile methods informing a dynamic ecological systems model

The second session, conducted at a community centre, involved interviews using web-based interactive-maps on internet-connected tablets to explore and map the young peoples’ networks across time and space. We selected Google Maps as our mapping tool, which we first piloted with three young people in the same age group as our sample, because we had ascertained during the first data collection session and rapport building sessions that it was widely used by participants. At the time of the fieldwork it was only possible to label and save places using Google Maps with a Google account, so we set up accounts to use with each of the participants. Pilot participants pointed to the usefulness of emoji to indicate their feelings about places they went, something also revealed in earlier studies (C. Due et al., 2014; Fane, MacDougall, Jovanovic, Redmond, & Gibbs, 2016; Jung, 2015). Our experience was similar to Jung (2015), who had asked children to write and draw on hard copy maps places they liked and disliked, but who nonetheless chose to use smiley-face stickers (see figure 1).
We started the group interactive mapping session with introductions, food and drinks and then offered participants the option of individual or group interviews (in twos or threes). We began interviews by asking participants to locate the street where they lived. The first thing participants wanted to do was bring up street view and show us their homes (even though we advised them that we did not need to know exactly where they lived). Some of the participants chose to start by locating their home village and town in Africa, immediately demonstrating the global possibilities of using web-based interactive maps. For all participants, this method provided space to talk about who lived there, who they were in regular contact with, how they travelled around and who they travelled with. The way participants engaged with the technology demonstrated how it can be a useful tool to allow for greater agency during the research process. Participants could lead the interview from their preferred start-place and use empowering techniques to manoeuvre around literacy barriers. For example, one participant accessed the tablet dictation application to find places so that he did not need to spell addresses.

Using web-based interactive maps, therefore, participants creatively moved beyond a static (hard copy) map to include descriptions of their transnational networks. Guided by Bronfenbrenner’s ecological systems theory (1981, 2005), we asked participants to explain how they used micro- and mesosystem linkages and processes to assist them to achieve their goals and aspirations and what they felt were barriers to achieving these. Questions that we asked of the various locations they identified included ‘who helps you?’ and ‘who do you help?’ We also referred to the first session, asking questions about supports that related to their stated aspirations. In this way, we aimed to develop a comprehensive picture of the young people’s ecological processes.

The research activities demonstrated how participants relied heavily on public transport in their resettlement city, some with multiple and time consuming connections to get from home to school or to visit friends. We asked participants to drop pins in their school, friends’ houses, and other places they went in their everyday lives, and tell us about how they travelled to those places. We learnt that the participants often travelled considerable distances across the city, which brought the advantages of using an interactive map to the fore. In several instances, participants used street view, taking us on
a virtual journey from home to their bus stop, while describing how long the walk was, who they went with, how long each bus or train ride was and how long the overall journey would take. This lead to in-depth discussions that included the time they had to be at their bus stop/railway station to make all their connections, which was affected by how many people lived in their households, who they travelled with and what time they had to get up in the morning due to shared bathroom use in large households.

Toward the end of the interview, we asked participants who had not already shown us, where they lived prior to arriving in Australia. Most were keen to show us (where possible) where they were from, including their villages, cities or towns, schools and streets where they had lived, opening them in street view, or opening photos that were embedded in the maps (see figure 2a). In this way, the interactive map platform provided opportunities for participants to discuss their (often harrowing) journeys to Australia, and the reach of their support networks across continents, in their own terms and at their own pace.

Figure 2. (a) participant saved embedded photo, unlabelled, (b) participant saved place, unlabelled.

By the end of the session, the participants were highly engaged and said they enjoyed the process and would be willing to attend another session with us. Participants also started looking at places they would like to visit rather than places they had visited. We found that a few of the participants seemed more comfortable exploring places they would like to visit than talking to us about specific people in their lives. Using the application enabled participants to actively maintain their safety by providing them with the space to choose alternative topics if they wished to avoid answering particular questions. While exploring places, they spontaneously spoke about their aspirations, including where else they would like to go in Australia or overseas, with whom they would go and how they would travel.

Our intention after the interviews was to analyse the participants’ places alongside interview data. Though some participants had saved places, we found they had not saved their dropped pins at many of the locations they talked about, or had not added their own emoji labels. Many of the places that they had saved were ones already listed on maps and could not be labelled (for an example, see
Whilst participants had no trouble using interactive maps to find places, we discovered that they required more assistance than the pilot participants with dropping pins, selecting the label function, locating emoji in the drop-down label box and saving their places. This is in accordance with previous studies that have found a technological divide along the social gradient (Newman, et al., 2012).

We spent time in the next session showing participants how to drop pins and label them, and to drop pins near already labelled places so that they could add their own labels (using emoji). We sat with them so we could offer prompts and so they could seek assistance, for example finding and using the label function as needed. We found that using this technique, when the participants were satisfied that they had saved all their places, they spontaneously chose one of their saved labels and offered to describe why they chose that place and why those emoji. Smart technology keyboards allow for users to choose a preferred skin colour for emoji. Participants accessed this feature without prompting (see figure 1). One of the participants also spontaneously showed us changes over time by including multiple emoji that represented how he felt at different time points, as he described below (see figure 3a):

Do you want me to explain why I chose these labels? [A1: yes please]
This is my soccer club] I put the monkey hiding his face because when I first went there I was shy and then after a few days I was really happy and so I put a smiley face. And then after a few days I loved it. I met 3 Congolese which is good. [...] I made friends with one Congolese guy because his mum picks him up and his mum is my auntie’s friend and when she comes there sometimes she takes me home. Sometimes I go to their house. They have become my friends because of soccer (Zlatan, Congolese refugee background, 15 years).

Using this method meant that participants could show us their places in the order they preferred and that they could decide when and whether they talked about sensitive topics (see figure 3b), illustrated by the same participant in his account below:
This is where I lived before Australia. It was [place] - it’s actually a small country. [In the beginning I was really happy there but then] [place] was horrible because they were fighting because the President doesn’t want to get out of power so there was a small war. They used guns, they killed people - it was horrible (Zlatan, Congolese refugee background, 15 years).

The follow-up interactive map interview also revealed the importance of public space to the study participants, who had limited economic resources and so public, free, safe spaces that were easily accessible via public transport were a crucial part of developing social networks. Most of the social activities that participants spoke about, including family and community gatherings as well as meeting friends, were undertaken in public spaces (see figure 4).

I like going to [beach], especially when it’s hot, I go there with friends, swimming at [beach]. If you want to meet your friends, you go there in the hot weather (Nani, Ethiopian new migrant, 14 years).

Figure 4. Participant label for Rundle Mall (Adelaide city centre)

At rapport-building sessions, in conversations with young people from migrant and refugee backgrounds who had been in Australia longer, we found that new migrants tended to go to public places in the hope that they would meet people they know because even if they had mobile phones, they most often did not have phone or data credit. Going to commonly known, easily accessible public places, particularly where there was free Wi-Fi, was a key means for them of developing social and support networks. The interactive maps were useful in helping the participants explain this concept, highlighting the benefits of using these tools in research.

The interactive mapping method used in conjunction with interviews enabled us to develop an eco-map using Bronfenbrenner’s ecological systems theory (see figure 5). We mapped the participants’ proximal connections (both past and present) within their micro- and mesosystems and linked these
to exosystem and macrosystem effects. The original Bronfenbrenner model usually defines settings within specific system layers. However we found that it was in the public spaces, which for these young people traversed all layers, where social networks were being remoulded. In the ecological map that we developed, solid lines indicate the linkages that participants told us about and dotted lines indicate our inferences about exo- and macrosystem effects.

![Ecological systems model adapted from Bronfenbrenner's ecological systems theory (1981, 2005)](image)

**Figure 5.** Ecological systems model adapted from Bronfenbrenner’s ecological systems theory (1981, 2005)

**4 Discussion and Conclusion**

Web-based interactive maps proved useful for exploring how young people from migrant and refugee backgrounds (re)develop and draw support from social networks in their resettlement country for several reasons. Firstly, they were instrumental in developing an ecological systems understanding of participants’ micro- and mesosystem linkages and processes (see figure 5). The method enabled study participants to discuss their transnational networks, their journeys to Australia, their transitions between micro- and mesosystems, and how they remoulded their realities through (re)establishing social networks in their resettlement country (the chronosystem). Further, we gained some understanding of the transitional nature of participants’ ecological systems after their arrival because the study was conducted during the 12 to 18 months in which they attended an English language-focussed school, and would change again when the participants transitioned to their local mainstream secondary schools (Clemence Due, Riggs, & Mandara, 2015). The use of emoji also provided an avenue for participants to reveal changes over time.

Secondly, the method allowed us to explore more fully the public spaces that were important to participants’ (re)development of social networks, particularly in the context of being geographically dispersed across metropolitan Adelaide. We were able to add space as conceptually intersecting across
the micro- and mesosystems because participants’ social networks (linkages) were not restricted to settings such as home or school, but in public space, which intersects across levels.

Thirdly, we could infer from the participants’ accounts, triangulated with public policy, how the macro- and exosystems were interconnected, for example the effects of public policy, dominant cultural beliefs and urban planning on the (re)development of their social networks. Particular public spaces were shown to be important to them and specific policies, for example relating to urban planning and policing, governed the design and use of these public spaces. These policies are likely to have influenced how the study participants could use these spaces in forming social networks (the exo- and macrosystem effects). One example of this was seen in their taking advantage of free Wi-Fi in these public spaces.

Using web-based interactive maps as an adjunct to interviews allowed study participants to more easily discuss the dynamic nature of their social networks, which seemed to fit well with the ecological systems approach, in the context of movement (often over considerable distances), time and space. Researcher-participant power imbalances, and concerns about cultural appropriateness, were at least partially addressed by the way in which participants were enabled to talk about their places in the order with which they felt comfortable. Moreover, the method did not require extensive English literacy skills (e.g. using the dictation function and emoji instead of typing in words). Additionally, participants could decide which places to show us and therefore who they would talk about and when they would talk about them. In agreement with previous studies, the method allowed participants to tell us about what was important to them (Block, et al., 2013).

There were some limitations to using Google Maps as the web-based interactive map platform. Tablets, a wireless internet connection and a Google account for each participant were required. Further, participants’ technological literacy could not be taken for granted. Whilst our participants demonstrated competency in using the technology, for example spontaneously using street view and the dictation application, we needed to demonstrate other functions multiple times. The young people who piloted the activity, by comparison, initiated the use of the emoji function for labelling places. This distinction between the pilot participants and our study sample may be because study participants had comparatively less access and therefore less experience than the pilot participants in using this type of technology (Newman, et al., 2012).

This paper is restricted to reporting on the experiences of adolescent men, representing a key limitation of the conclusions drawn about engagement with space and time. As noted earlier in the paper, limited work was conducted with young women within this study, but the data collection has not been completed, nor analysed in relation to the findings presented in this paper, emphasising the need for further research regarding potential gendered time and space-use differences.

This paper presents our experiences of conducting an exploratory study that sought to use Bronfenbrenner’s ecological framework to increase understanding of how young people from migrant and refugee backgrounds (re)develop social support networks in their resettlement country. We found web-based interactive maps effective and appropriate for research with recent migrants and believe the method has the potential for broader application, for example in studies with other highly mobile groups, or those with transnational using web-based interactive maps in conjunction with interviews is a valuable addition to the qualitative researcher’s toolbox (Darbyshire, et al., 2005). Further investigation is warranted regarding how to manage larger studies that use publicly available applications.

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References


