



‘Will there be parmesan?’ – Understanding migrants’ information needs and sources for transition to new country

Rashika Bahl, Shanton Chang, Dana McKay, George Buchanan, and Marc Cheong

DOI: <https://doi.org/10.47989/ir31iConf64162>

Abstract

Introduction. Migration is an information-intensive process—migrants require information throughout the process of their move. Extant literature identifies what information migrants need, how they seek it, and the barriers encountered in new information environments. However, not much work has examined what enables migrants to access information in new environments.

Method. To address this gap, a qualitative approach was adopted. Semi-structured interviews were conducted with a cohort of 23 migrants in Victoria, Australia. All participants had moved more than once in their life.

Analysis. Following data collection, a thematic analysis approach was adopted. We examined the data for emergent themes. Data was coded by the first author and refined through an iterative process with four co-authors.

Results. Data analysis revealed 4 themes and 16 sub-themes. We identified enablers for navigating new information environments: navigating the physical landscape of new country, drawing on local contacts in new country, leveraging online recommender systems in new digital environments, drawing on previous experiences of navigating information environments.

Conclusion. Given the findings, we suggest serendipitous information system design can have a supportive effect for migrants navigating new digital information environments. We also indicate the role libraries can play in helping migrants make the digital journey.

Introduction

Migrants are a growing group globally (UNESCO, 2023). In fact, 31.5% of people living in Australia were born overseas (Australian Bureau of Statistics, 2024). The move to a new country is categorized as a major life transition, which is an information driven process (Ruthven, 2022). Information is needed to prepare for the transition and adjust following the transition. Paradoxically, a move to a new country does not necessarily result in a move to new country information sources (Bahl et al., 2025a; Chang & Gomes, 2017). While migrants require information, they encounter barriers to accessing it, including language barriers, bureaucratic barriers, and information overload (Beretta et al., 2018; Caidi et al., 2010). These barriers can push migrants to use familiar information sources that are less relevant or accurate in the new country. (Bahl et al., 2022). Not having timely access to information can impact migrants' transitions—resulting in them leaving the new country altogether (Benson-Rea & Rawlinson, 2003). It is thus vital to understand (1) what information migrants need, (2) how they find that information and (3) consequently how designers of information systems and institutions can support migrants.

Migrants' information needs have been previously explored, including work done on refugees (e.g. Oduntan & Ruthven, 2019) and mapping out migrants' information experiences across different settlement stages (e.g. Beretta et al., 2018; Caidi et al., 2010; Khoir et al., 2015). Chang and Gomes (2017) also put forward the notion of digital journeys to conceptualize how migrants adapt to new digital *information environments*—the combination of information sources and the norms that accompany their design & use (Bahl et al., 2025a; Lloyd, 2017). While much work has been done to understand what information migrants need, barriers they encounter to accessing information, and their preferences for information, there is a gap in the literature in understanding what enables migrants to find information in new environments. There is value in understanding this as it shifts the conversation from obstacles to information access to information strengths and enablers. This paper aims to address the gap through the following research questions:

(RQ 1) What information do migrants need to manage the migration transition?

(RQ 2) What information sources do migrants draw on to manage the migration transition?

(RQ 3) What are the barriers and enablers to accessing new country information sources?

To answer these research questions, we adopt a qualitative approach and conduct semi-structured interviews with 23 migrants. Our findings reveal enablers for adopting information in new environments: *navigating the physical landscape of new country, drawing on local contacts in new country, leveraging online recommender systems in new digital environments, drawing on previous experiences of navigating information environments*. We unpack these enablers in the context of the digital journeys' framework (Chang & Gomes, 2017). We discuss implications for libraries' in supporting migrants and make the case for serendipitous design of information systems.

Literature review

In this section, we first unpack Chang and Gomes' (2017) digital journeys framework. Then we apply it to migrants' move across information environments. Afterwards, we cover the literature on migrants' information needs and sources used. We focus on information needs and sources as these are at the heart of the information seeking process (Wilson, 1981). The migration transition brings with it information needs pertaining to the reestablishment of life (Caidi et al., 2010), that prompt the individual to seek out information (Wilson, 1997).

We use the term migrants' broadly in this paper, to cover the experiences of both settled and temporary migrants. The nature of any 'temporary' migrant's migration can evolve (Gomes, 2021). Different groups of migrants will face different challenges depending on their context. However, regardless of the context of the migrant, all migrants share a commonality in requiring information

to manage their move and understanding how to find this information in a new information environment (Caidi et al., 2010). Given this shared experience, we examine migrants holistically rather than distinguishing between categories of migrants.

Digital journeys

Migrants require a plethora of information to navigate moving to a new country. With an abundance of information available online, migrants can draw on information from sources based in their home and host country (Bahl et al., 2025a). However, relying on home-based sources may mean migrants miss out on timely information relevant for the new context (Bahl et al., 2022). On the other hand, migrants can experience barriers to adopting host country information sources (Beretta et al., 2018; Caidi et al., 2010; Khoir et al., 2015). So, migrants do not automatically or concurrently adopt new-country information sources following the physical journey to the new country.

Chang and Gomes (2017) conceptualize the ‘digital journey’ to explain how migrants adopt new country digital information sources. Following the move to a new country, people continue using the same sources for information (Chang & Gomes, 2017). Intrinsic factors such as self-identity and collective identity shape digital transitions (Chang & Gomes, 2017). An individual’s self-perception shapes how they interact with others (Cote & Levine, 2002). People also have a social identity, tied to their communities (Tajfel et al., 1979). So, our place within a broader group of people shapes how we interact with information online. Other empirical research supports this and finds that our interactions with information on online platforms are shaped by other users (Syn & Oh, 2015; Zhu & Huberman, 2014). In the case of migrants, ones who perceives themselves as adventurous might similarly be excited about making that digital journey. A migrant whose new-country friends use new-country platforms might make that switch because that is what their peers have done. In this way, self-identity and collective identity influence whether the migrant makes that switch to host-country sources.

Beyond these intrinsic factors, the actual design of information sources and technologies matters. Migrants experience first impressions of digital environments (Chang & Gomes, 2017). These impressions subsequently inform migrants’ information behaviors in the new digital environments. We know that websites differ across cultural contexts (Cyr & Trevor-Smith, 2004; Goyal et al., 2012). For example, Chinese websites tend to have more active elements compared to Western websites (Li et al., 2022). These differences are a direct result of preferencing information in line with socio-cultural norms. Early research has indicated that even the sign-posting indicators that are an integral part of information architecture are not culturally transferable (Duncker, 2002). Further, we know that technologies too can differ. For example, ICT infrastructure in different countries can result in different internet speeds (Suh & Hsieh, 2019). Therefore, if a migrant is used to certain information technologies and information design, finding information in a foreign information environment can be jarring.

Once a migrant adapts to the new country digital information environment, they do not necessarily shift away from the original. Rather, their everyday digital bundle can include sources from back home and from the new country (Chang & Gomes, 2017). Bahl et al. (2025a) highlight how the mixed use of both home and host-country based digital platforms allows migrants to (1) maintain ties back home, sending back ‘social remittances’ in the form of information and (2) venture into new country information environments to support their life the new country.

Drawing on this body of theory, our research seeks to situate migrants’ informational needs, understand how they address those information needs, and barriers and enablers to navigating a new information environment. In the next sub-section, we cover existing work on migrants’ information needs and sources.

Information and migration

Migration is not instantaneous and takes place over time. Prior to moving, information needs and searches will focus on the logistics of migration and finding a job and housing (Allard, 2022; Oh et al., 2014; Shuva, 2023). As the migrant settles in their new country, they will be interested in finding information on healthcare alongside fulfilling initial needs (Du, 2023). If they are traveling with children, they may want to connect with other parents and find information on education for their kids (Suh & Hsieh, 2019). As migrants meet basic needs, they start looking for information that allows them to participate in society in the new country (Caidi et al., 2010; Khoir et al., 2015). These information needs are time-sensitive and so regardless of whether the person migrating is comfortable using the new information environment, information must be found.

Migrants can access two categories of information sources: more official ones (driven by institutions) and more experiential ones (driven by people with lived experience of the situation) (Huang & Bilal, 2017). Migrants preference experiential information sources as these can provide 'street-wise' information, important for understanding the nuances of the process (Dekker & Engbersen, 2014). Further, institutional sources can be difficult to understand as the information is conveyed using technical jargon (Underhill et al., 2019). Of course, this does not mean that migrants do not examine institutional websites – they do (Du, 2023)! However, official information sources are complemented with more 'experiential' sources that are tailored to migrants' unique circumstances, rather than generalized information (Bahl et al., 2025b).

As we state earlier, not all migrants make an immediate transition to using host country information sources. Sometimes, in the face of barriers, given the urgency of information needs, migrants will continue to draw on home-country information sources to find information about the host country (Bahl et al., 2022). This can mean that migrants do not get timely access to information.

While we generally have a good understanding of what factors impact whether a migrant takes on new information sources – including intrinsic factors and information design factors, our research seeks to understand how migrants take on new information sources following their transition.

Methods

In this section we detail our approach to data collection and analysis. Given the aim of this work is to center the lived experiences of our participants, we take an interpretivist approach to our research design and use qualitative semi-structured interviews (Creswell & Creswell, 2023). All members of this research team are migrants, ensuring a more balanced dynamic between researchers and participants (Burns & Schubotz, 2009).

Data collection

Australia is a popular destination for those choosing to move. Two Australian cities feature on the top 10 cities in the world with foreign born populations ('Foreign Born,' 2025). Thus, the Australian context is a rich one for understanding migrants' transition to new information environments.

This study ran as part of a larger study seeking to understand the information experiences of migrants that had moved across geographical boundaries at least twice in their life. Here, we focus on understanding migrants' experiences addressing information needs in new information environments. We conducted 23 interviews. Our participants had been living in Australia for at least 6 months. This cohort had also lived in at least two other countries aside from Australia. Our sample was limited to those living in Victoria, Australia to ensure a shared current context. Participation was voluntary; participants were not compensated and could withdraw at any point.

We adopted a snowball sampling technique to recruit participants (Parker et al., 2020). We first reached out to people within our social networks who fit the criteria. We then asked participants

who expressed interest to pass on the details of the study to others who fit the participant criteria. Interviews continued until we reached data saturation – the point at which we were no longer learning new information (Mason, 2010). Participant demographics are indicated in Table 1.

Before being interviewed, participants filled out a pre-interview questionnaire that collected data on demographic factors and eligibility. Interviews were semi-structured. This format allows for the tailoring of questions to each participant (Braun & Clarke, 2013), while maintaining some consistency. Participants were asked questions about how they found information in provided scenarios, a hypothetical scenario around a move to a new country, and their routine information behaviors. Interviews lasted on average 53 minutes and were recorded.

Demographic	Values, n = 23
Gender	
Male	10
Female	13
Age	
23 – 28	3
29 – 35	9
36 – 41	4
42 – 47	3
48 – 55	4
Years Living in Australia	
6 months – 1 year	4
1 – 2 years	4
3 – 4 years	2
5 – 10 years	6
10+ years	7

Table 1. Participant demographics.

Data analysis

Once data was collected, we conducted thematic analysis. Thematic analysis is commonly used in qualitative research and emphasizes using participants' language and experience to derive themes (Braun & Clarke, 2022; Creswell & Creswell, 2023). We began with an inductive approach to examine what the participants stated explicitly but also the bigger picture around their reported experiences (Braun & Clarke, 2022). The first author transcribed and then coded the interviews. Following the initial identification of themes, codes were refined in conversation with co-authors. Once themes were derived, we examined them in the context of the digital journeys' framework to help the themes.

Data analysis occurred over three iterations, until the best possible fit of themes and sub-themes was reached. Once themes were finalised, they were defined and quotes chosen from the transcripts to exemplify each code.

Ethical considerations

This study was approved by the University of Melbourne's Office of Research Ethics and Integrity (approval # 2024-28297-50492-4).

Migration experiences can be stressful. Consequently, reflections of them may invoke strong feelings. Prior to the interview, we reminded participants that participation was voluntary.

Following the interview, we provided participants with a debrief document that encouraged them to talk to friends and contained contact information for mental health and migrant services.

Findings

In this section, we discuss the 4 themes and 16 sub-themes derived from the data. We cover the information needs reflected by participants (RQ1) and the sources used to address the needs (RQ2). Then we reveal the barriers and enablers migrants experience in new information environments (RQ3).

Migration transition information needs

Every transition is accompanied by the need for information, regardless of whether it is the first time someone has moved or the tenth. Participants raised five key areas of information: *physical infrastructure in new country*, *processes for moving to new country*, *processes for establishing life in new country*, *culture and community in new country*, and *information sources for new country*.

Physical infrastructure in new country

This sub-theme concerns information on the physical landscape of a new country. Migrants wanted to understand infrastructure from a perspective of access and availability. This included information on schools, public transit, health care, weather, and supermarkets. P1, reflecting on a potential move to a new country stated: *'So I look for [...] modern infrastructure where [...] we can rely on the strong modern infrastructure, you know, connectivity to access, to access to everything you want, whether it's medical, telecom, hospitals, lifestyle.'*

Processes for moving to new country

This sub-theme indicates the information participants needed relating to the actual process of the move. Participants wanted to know information on the visa application process (including for family members moving with them), future visa options within the country, and purchasing plane tickets.

When presented with a hypothetical scenario of a move to a new country, P23 said: *'[...] If I go somewhere, I have to look out for [...] how my kids and mom could come.'*

Processes for establishing life in new country

Additionally, participants reported needing to understand what decisions to make about establishing life in the new country. This included: what bank to use, what sim card to get, how to find housing, how to find a job, what was the cost of living, how to purchase a car, how much currency to bring, and whether they were able to get products they already regularly used in new country. P5, recalling their move to Australia:

And I remember when I was coming here, I was like, will there be Parmesan? What will I do without Parmesan? There was parmesan everywhere, so that wasn't the problem. But I also can order things [...] like I still use hair dye I used in [previous country lived in]. (P5)

Culture and community in new country

Alongside information on the physical infrastructure, participants sought to understand the social infrastructure within the country. This included information on what places they could visit, places to eat, language proficiency required, and work culture expectations. When recalling their move to Australia, P8 recounted: *'This is what I did. I got excited, checked all the fun places I can go and eat and party and see.'*

Information sources in new country

Before attempting to address information needs, participants also wanted to work out what sources of information were available to them. Key considerations were finding out whether they

already had contacts in the country, what were potential news sources, and whether there were any online groups they could join to get further information. In a hypothetical move scenario, to Thailand, P2 states that to get information, one of the first things they would do is: *'I will ask for some friends that have lived in Thailand. I will ask for advice. I know couple of [from the same country] friends that have lived in Thailand or I know some Thai people as well.'*

Migration transition information sources

Once migrants have a general sense of what information they need and the available information sources, migrants can start seeking out information. The bundles of information sources reported by participants fell into two categories: more *official information sources* and *experiential information sources*. These information types were often used in conjunction with one another to provide a holistic understanding.

Official information sources

Official information sources included government websites, university websites, Google maps to navigate physical environment, finding local websites for house and job searches, and sometimes even just starting with a Google search to see what came up. P6 even mentioned seeking out information on Australian Bureau of Statistics before moving to Australia.

To understand how things work [...] I was doing some [...] calculations or planning forecasting for based on what to expect. [...] Because Australia is an expensive country and it's good to have an idea like how it actually will work out. [...] I use[d] some statistics from [...] Bureau of Statistics.

Experiential information sources

The official sources were complemented with experiential information sources. Participants reported asking family and friends who were living in the country, using platforms like Reddit or Facebook Groups, blogs, and even watching YouTube videos of individuals navigating processes (for example, housing) in the new country to support information the more official information they had found.

In considering where they would find information to support a hypothetical move, P19 stated:

I usually also go to like Facebook groups or like communities [...] like [home country demonym] in Melbourne [...] and then try to see how the conversations are. And their experiences. YouTube as well like vlogs just to check.

Barriers to digital journeys

In new information environments, participants report difficulties in accessing information. These include: *contextual experience with information seeking*, *information overload*, *socio-cultural barriers*, *language barriers*, and *bureaucratic barriers*.

Contextual experience with information seeking

Contextual experience with information seeking refers to strategies around finding information in a new information environment. While participants know how to find information in one environment, they may not know how to do so in another. Our participants raised barriers like: not knowing where to look, and even what were the appropriate keywords to use. P4, when recounting their experiences accessing healthcare said:

I didn't know which where to look. I'm sure if you know where to look, it's very easy. But it's mainly been like through people like through offline things and a lot of times where I didn't know [...] especially with doctors, I tried to just avoid going to the doctor.

Information overload

Information overload refers to the negative experience of having too much information at once. A unique aspect of this raised by our participants also covers how the change in information access has contributed to this phenomenon. P13, having moved multiple times, recalled:

Relatively speaking, [...] compared to the amount of information we have access to today versus [...] 20 years ago it was completely different. So, the sources of information were narrower, there was less online information and the information that was online was concentrated in a few different sources [...]. Whereas today it's [...] prolific.

Socio-cultural barriers

Some participants also recall the nervousness of being in a new space, not understanding socio-culturally contexts, and how that impacted their experiences. P1 recounted: *'[...] I was a bit shy in the first two months because I didn't know whom I could trust.'*

Language barriers

Language refers to how not being able to speak the local language can disrupt information access. P17 recounted difficulties finding housing: *'So at the beginning, we were doing everything in English. [...] I don't think we ever got an invitation, to do an inspection. [...] We got a few, but they were very expensive.'*

Bureaucratic barriers

Bureaucratic barriers can be tremendous and exist regardless of residency or citizenship status. P15 remembered:

I think [...in] 2014, it was a time in my life where I was changing jobs and I was changing careers. [...] I found it really difficult to see what kind of support I could get from the government, although I was already an Australian citizen. [...] I couldn't find information anywhere, so it was very, very complicated and very unclear. In the end I just gave up.

Enablers of digital journeys

Participants also report factors that supported them in gathering information in new information environments: navigating the physical landscape of new country, relying on local contacts in new country, leveraging online recommender systems in new digital environments, and drawing on previous experiences of navigating information environments.

Navigating the physical landscape of new country

Navigating the physical landscape of a new country has proved useful for some of our participants. By doing so, they have been able to locate doctors and understand the environment better. P13 even highlighted how driving has shaped their experiences:

When [...] you want to find your way around [...], if you have a car and you can drive, mobility makes a huge difference in terms of your understanding of the layout of a city as well or a suburb because when you drive, you get to explore all different streets. You know how things go.

Drawing on local contacts in new country

Unsurprisingly, knowing someone in the country was important for figuring out new information systems. P22 recalls counting on the legacy of the people who came before them:

I was lucky in the UK; I had good friends that moved a few months before me. There [were] lots of [home country demonym] that go there, so there's often quite an informal network. You usually know somebody who can help you navigate what's

different. So, I was sort of told how I needed to [...] register with the NHS [Note: National Health Service in the UK] and my local [General Practitioner]. I was lucky, [...] I remember having to do some searching [...] but I had friends that were able to help me.

Leveraging online recommender systems in new digital environments

In a digital age, it is also unsurprising that recommender systems shape how one finds information in new digital information environments. P2 recalls when planning a trip overseas:

Of course, the more you share things about [country they are travelling to] the more you get. So, I actually found addresses and stuff [...] like [...] places to go. [...] I don't know if I've used it at the end of the day, but I found it useful to give you a bit of idea where to stay etc.

Drawing on previous experiences of navigating information environments

Given our cohort is a group of people who have moved multiple times, they report drawing on their previous experiences as a way of understanding new information environments. When thinking about future moves and how to find housing, P12 strategizes: *'Because from my experience, like every country will have like [a site where most] houses get posted on [...]. So, I would just try to identify which are the most famous ones.'*

Discussion

We previously detail what information migrants need, what sources they use, and barriers and enablers to making digital journeys to new information environments. Now, we unpack our findings in the context of existing literature. Then, we discuss our contributions to the digital journeys framework. Finally, we propose considerations for supporting migrants' digital journeys.

Migrants' information seeking experiences

Our findings echo previous work on information migrants need in the face of a migration transition and the sources they draw upon. Our participants reported wanting to understand both the physical infrastructure, which encompasses understanding physical facilities in a country, and the sociological infrastructure which enables their participation in society (Beretta et al., 2018; Caidi et al., 2010; Oduntan & Ruthven, 2019).

However, we also identify that migrants prior to their move also consider *how* they will find information specific to the new country. This includes reflecting on contacts they have and understanding what news sources are relevant. We frame this as a need, because participants report both sources used to address information needs but also a desire to understand what information sources are available. This forwards our understanding of migrants' information needs and provides a new category of information worth adding to existing theoretical frameworks (e.g. Oduntan & Ruthven, 2019; Strauss & Shoham, 2008). Further, it showcases that while migrants do experience barriers to finding information in new information environments, they are aware of the need to find information sources relevant to the new country.

Migrants, like other non-dominant groups, prefer information that is tailored to their circumstances (Chang et al., 2020). This is not limited to information seeking prior to moving to a new country. For example, Korean migrants in the US eventually shifted to drawing on online information sources created by other Korean migrants in the US (Suh & Hsieh, 2019). On the other hand, migrants' also rely on institutional information sources to manage their move (e.g. Du, 2023). Within our study, we see these types of information sources used in conjunction with one another. This triangulation of information sources and information need is an important finding of our work. It showcases that migrants' do not preference one type of information source but strike the right balance for addressing their information need.

Understanding migrants' journeys to new information environments

The transition to a new country's information environment does not automatically occur when a migrant moves to the new country. In a new information environment, migrants face barriers. Chang and Gomes (2017) posit that both intrinsic factors—specific to the migrant—and extrinsic factors—specific to the design of information sources—impact how a migrant takes on new information sources. Our work builds on Chang and Gomes' (2017) conceptualization and importantly, highlights not just barriers but enablers to digital journeys to new information environments.

In line with existing literature, our participants encounter bureaucratic, language based and socio-cultural barriers in new information environments (Beretta et al., 2018; Caidi et al., 2010; Khoir et al., 2015). Information overload also impacts our participants' experiences in new environments (like: Ndumu, 2020). Importantly, we posit contextual experience with information seeking as a barrier. System knowledge is a key attribute of the information search process (Xie, 2009). Understanding the systems and the socio-cultural context within which these systems are embedded is important. Migrants may struggle to find information in new environments, not only because they do not speak the right language. Sometimes, they can speak the language and not know what search terms are appropriate (Oh et al., 2014; Suh & Hsieh, 2019). We frame these together as *contextual experience with information seeking* to provide a novel way of understanding these barriers and showcase how not having the *contextually correct* knowledge is a barrier.

However, only examining barriers migrants' experience in a new environment emphasizes disadvantage over strengths. To support migrants, we also need to understand what enables them to overcome barriers, make digital journeys, and access information in the new information environments. Our study thus makes an essential contribution by putting forward enablers of digital journeys. Like existing work (Lingel, 2011, 2015; Oh et al., 2014), we find that navigating the physical landscape is hugely useful for migrants in new environments. They then extrapolate from their navigation of the physical landscape and identify what to search for. Like existing work, we highlight the power of host-country based social networks for information seeking (e.g. Allard, 2022; Shuva, 2022). We find that local contacts can support migrants in finding sources of information in new environments by giving them suggestions on what and/or where to look. Unsurprisingly, like extant literature (Bahl et al., 2025a), we identify that migrants draw on previous experiences to orient themselves in new information environments. This can be as simple as understanding that each country will have their popular housing websites with different names and using that logic to identify the one specific to their new country.

Interestingly, we find that online recommender systems support migrants in unfamiliar environments. Participants that reported relying on recommender systems embedded into online platforms did not use them just for the move to a new country but for general travel to a new country. The information we consume online is shaped by AI-integrated online recommender systems (Riemer & Peter, 2021). These consequently shape core functionalities of online platforms, including search and browse (Lewis & Moorkens, 2020). In fact, they can be so powerful, that a TikTok user described the recommender system as '*knowing me better than I know myself*' (Lee et al., 2022). So, it is crucial to understand how recommender systems can support information access. Our participants report relying on these systems to find relevant content for a new location. This reflects an understanding of how recommender systems function and how migrants can harness this functionality to address their information needs. Of course, recommender systems are a double-edged sword. They are often designed to promote content that gets engagement, which can result in divisive content that may not be relevant or accurate being promoted (McKay et al., 2020b). The focus of this paper is on understanding migrants' search processes, rather than how they determine credibility and usefulness of found information. However, by acknowledging that migrants are aware of the role online recommender systems play

within search processes and understanding that migrants use such systems to support themselves in new environments, we open opportunities for future work in this space.

While individually these enablers are not groundbreaking, by bringing them together we understand migrants' information experiences through a new lens. In the following sub-section, we discuss implications for supporting migrants in new environments

Supporting migrants' information journeys

Role of libraries

Libraries have long been positioned as being able to support migrants in their acculturation process by familiarizing migrants with the socio-cultural context of the new country (Bertelli, 1976). They have done this by supporting migrants informational needs, thus helping them develop confidence in new environments (Grossman et al., 2022).

Libraries can continue building on this expertise and help skill migrants in navigating information environments in a new country. Particularly, libraries can help bridge the gaps migrants have in system knowledge—around socio-cultural information contexts. This can then empower migrants to find information sources that meet their unique information needs.

Design for serendipity

Serendipitous design is sometimes considered the antithesis of a search paradigm with directed information seeking and precise results (McKay et al., 2020a). Instead, it seeks to promote chance encounters with information and prompt creative problem solving. Unexpectedly encountering information can be useful for exposing people to new knowledge, and push them in new directions that they may not have otherwise considered (Makri et al., 2014). This may seem contradictory to designing for a cohort trying to find information; however, we propose that serendipitous design can support migrants' acclimatization to new digital environments.

Existing literature and our findings affirm that roaming physical landscapes helps migrants' acclimatize to new spaces (Lingel, 2011; Oh et al., 2014). We also find that migrants can lack a degree of system knowledge in new information environments. Thus, promoting serendipity, or chance encounters, in the design of our information systems can hold merit and support migrants by exposing them to new information sources.

Digital environments can be designed to support people to examine information sources that relate to their need, but may not be something they typically visit (Makri & Blandford, 2012). Our findings indicate that finding appropriate sources of information is something migrants describe as a need during their migration transition. Serendipitous design, in the form of location-based recommendations, can nudge migrants in the direction of host-country information environments

Design can even support migrants on drawing on their previous life experiences by allowing individuals to capture, store and revisit information (Makri et al., 2014). This can include recommendations based on what they user has already come across. In the context of those navigating a new information environment, recommendation systems that are location-based can allow migrants to find information on how to continue old hobbies and habits in a new country.

However, the ultimate goal of serendipitous design should not be for recommender systems to precisely predict and relate information with users' interests and knowledge (McKay et al., 2020a). This is somewhat paradoxical to the nature of serendipity as it artificially manufactures the perfect chance encounter. Of course, in an online information environment, there will be some manufacturing, however, designers can also empower users. For example, design could allow the user to have time to consider and relate information encountered (McKay et al. 2020a). For a migrant, this allows for time to consider the relevance of the encountered information for their context.

As we illustrate here, the digital journey enablers can be supported from a design perspective. Having good design, that supports those new to information environments, holds merit for those user groups and can encourage their acculturation.

Conclusion

In an increasingly global world, people are constantly on the move. There is also an abundance of information dispersed across environments shaped by different socio-cultural values. For those that move, the shift to new country information environments is not immediate and rife with barriers. Not having access to timely and relevant information can impact migrants' long-term settlement in their new country. Consequently, we need to understand how migrants transition to new information sources.

This work makes several novel theoretical contributions to our understanding of migrants' information behaviors. We contribute to frameworks that map out migrants' information needs (e.g. Oduntan & Ruthven, 2019; Strauss & Shoham, 2008) and add *Information sources in new country* as a category of information needs. We define *Contextual Experience with Information Seeking* as a barrier to information seeking. Most importantly, we extend Chang and Gomes' (2017) work and reveal factors that enable migrants' moves to new information environments. We find that *navigating physical landscapes, drawing on local contacts, leveraging online recommender systems, and drawing on previous experiences of navigating information environments* supports migrants in navigating new information environments. Our work also makes practical contributions by suggesting how serendipitous design can have a multiplying effect to these enablers.

Like any piece of research, our is not without limitations. We speak to people who are based in Australia. Different countries have different profiles of migrants, so results are not generalizable to all migrants. However, the aim of qualitative work is not to generalize but rather to provide depth of understanding of experiences (Creswell & Creswell, 2023). Our data collection process also emphasizes self-reflection. Often people's reported behaviors are different than their actual behaviors (Radecki & Jaccard, 1995). However, understanding people's perceptions is valuable and important. An individual's perception of a situation ultimately impacts their decision-making processes and information experiences (Chang & Gomes, 2017; Taylor & Todd, 1995). By completing this work, we provide a good starting point to understanding how to continuously support migrants across all stages of the migration transition.

Future research can empirically examine the role serendipitous design can play in promoting digital journeys. Research can also examine the role of algorithms in the search process of those experiencing a transition. This body of future research can then provide a holistic understanding of how to design digital information environments that support migrants.

Acknowledgements

The first author is a recipient of the Melbourne Research Scholarship. The authors extend their gratitude to research participants for their enthusiastic participation. The authors also extend their thanks to the Melbourne Social Equity Institute at the University of Melbourne for their continued support of this work.

About the authors

Rashika Bahl is a PhD Candidate in School of Computing and Information Systems, University of Melbourne. Rashika's thesis examines migrants' information behaviours. Rashika can be contacted at rashikabahl@gmail.com.

Shanton Chang is a Professor in School of Computing and Information Systems, University of Melbourne. His research interests include information behaviours in health and education contexts. Shanton can be contacted at shanton.chang@unimelb.edu.au.

Dana McKay is an Associate Professor in School of Computing Technologies, RMIT University. Her research interests include how people encounter and abuse information. Dana can be contacted at dana.mckay@rmit.edu.au.

George Buchanan is a Professor in School of Computing Technologies, RMIT University. His research interests include understanding how people control complex information work in health settings. George can be contacted at george.buchanan@rmit.edu.au.

Marc Cheong is a senior lecturer in School of Computing and Information Systems, University of Melbourne, and Deputy Director at the Centre for AI and Digital Ethics. His research interests include the intersection of information systems and philosophy. Marc can be contacted at marc.cheong@unimelb.edu.au.

References

- Allard, D. (2022). 'So many things were new to us': Identifying the settlement information practices of newcomers to Canada across the settlement process. *Journal of Documentation*, 78(2), 334–360. Arts Premium Collection; ProQuest Central; Sociological Abstracts. <https://doi.org/10.1108/JD-02-2021-0024>
- Australian Bureau of Statistics. (2024, June). Australia's population by country of birth, Jun 2024 | Australian Bureau of Statistics. <https://www.abs.gov.au/statistics/people/population/australias-population-country-birth/latest-release>
- Bahl, R., Chang, S., McKay, D., & Buchanan, G. (2022). Transnational Misinformation Experiences Amongst Migrants. *ACIS Proceedings*, 62, 62. <https://aisel.aisnet.org/acis2022/62/>
- Bahl, R., Chang, S., McKay, D., Buchanan, G., & Cheong, M. (2025). A Whole New World: Migrant Journeys Through Digital Information Landscapes. *ACM SIGIR Conference on Human Information Interaction and Retrieval (CHIIR '25)*, 247–262. <https://doi.org/10.1145/3698204.3716460>
- Bahl, R., Han, B., McKay, D., & Chang, S. (2025). Before the beginning: International students' negotiation of moving to Australia through Reddit or Xiaohongshu. *Transitions: Journal of Transient Migration*. https://doi.org/10.1386/tjtm_00074_1
- Benson-Rea, M., & Rawlinson, S. (2003). Highly Skilled and Business Migrants: Information Processes and Settlement Outcomes. *International Migration*, 41(2), 59–79. <https://doi.org/10.1111/1468-2435.00235>
- Beretta, P., Sayyad Abdi, E., & Bruce, C. (2018). Immigrants' information experiences: An informed social inclusion framework. *Journal of the Australian Library and Information Association*, 67(4), 373–393. <https://doi.org/10.1080/24750158.2018.1531677>

- Bertelli, L. (1976). Migrants and libraries: Breaking the cultural barrier. *The Australian Library Journal*, 25(3), 104.
- Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners*. SAGE Publications.
- Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. SAGE.
- Burns, S., & Schubotz, D. (2009). Demonstrating the Merits of the Peer Research Process: A Northern Ireland Case Study. *Field Methods*, 21(3), 309–326.
<https://doi.org/10.1177/1525822X09333514>
- Caidi, N., Allard, D., & Quirke, L. (2010). Information practices of immigrants. *Annual Review of Information Science and Technology*, 44(1), 491–531.
<https://doi.org/10.1002/aris.2010.1440440118>
- Chang, S., & Gomes, C. (2017). Digital journeys: A perspective on understanding the digital experiences of international students. *Journal of International Students*, 7(2), 347–366.
<https://doi.org/10.32674/jis.v7i2.385>
- Chang, S., Gomes, C., & McKay, D. (2020). The Digital Information Ecology of International Students: Understanding the Complexity of Communication. In S. Chang & C. Gomes (Eds.), *Digital Experiences of International Students: Challenging Assumptions and Rethinking Engagement* (pp. 3–24). Routledge. <https://doi.org/10.4324/9780429276088>
- Cote, J. E., & Levine, C. G. (2002). *Identity, Formation, Agency, and Culture: A Social Psychological Synthesis*. Psychology Press. <https://doi.org/10.4324/9781410612199>
- Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (Sixth edition). SAGE.
- Cyr, D., & Trevor-Smith, H. (2004). Localization of Web design: An empirical comparison of German, Japanese, and United States Web site characteristics. *Journal of the American Society for Information Science and Technology*, 55(13), 1199–1208.
<https://doi.org/10.1002/asi.20075>
- Dekker, R., & Engbersen, G. (2014). How social media transform migrant networks and facilitate migration. *Global Networks*, 14(4), 401–418. <https://doi.org/10.1111/glob.12040>
- Du, J. T. (2023). Understanding the information journeys of late-life migrants to inform support design: Information seeking driven by a major life transition. *Information Processing & Management*, 60(2), 103172. <https://doi.org/10.1016/j.ipm.2022.103172>
- Duncker, E. (2002). Cross-cultural usability of the library metaphor. *Proceedings of the 2nd ACM/IEEE-CS Joint Conference on Digital Libraries*, 223–230.
<https://doi.org/10.1145/544220.544269>
- Foreign born. (2025). In Wikipedia.
https://en.wikipedia.org/w/index.php?title=Foreign_born&oldid=1303860238
- Gomes, C. (2021). Transience as method: A conceptual lens to understanding evolving trends in migration, mobility, and diversity in the transnational space. *Migration Studies*, 9(3), 649–676. <https://doi.org/10.1093/migration/mnz027>
- Goyal, N., Miner, W., & Nawathe, N. (2012). Cultural differences across governmental website design. *Proceedings of the 4th International Conference on Intercultural Collaboration*, 149–152. <https://doi.org/10.1145/2160881.2160907>

- Grossman, S., Agosto, D. E., Winston, M., Epstein, R. N. E., Cannuscio, C. C., Martinez-Donate, A., & Klassen, A. C. (2022). How Public Libraries Help Immigrants Adjust to Life in a New Country: A Review of the Literature. *Health Promotion Practice*, 23(5), 804–816. <https://doi.org/10.1177/15248399211001064>
- Huang, L.-M., & Bilal, D. (2017). 'Not what I thought!' information seeking behaviors of international students during the application for graduate study in the USA. *Proceedings of the Association for Information Science and Technology*, 54(1), 709–711. <https://doi.org/10.1002/pra2.2017.14505401125>
- Khoir, S., Du, J. T., & Koronios, A. (2015). Linking Everyday Information Behaviour and Asian Immigrant Settlement Processes: Towards a Conceptual Framework. *Australian Academic & Research Libraries*, 46(2), 86–100. <https://doi.org/10.1080/00048623.2015.1024303>
- Lee, A. Y., Mieczkowski, H., Ellison, N. B., & Hancock, J. T. (2022). The Algorithmic Crystal: Conceptualizing the Self through Algorithmic Personalization on TikTok. *Proc. ACM Hum.-Comput. Interact.*, 6(CSCW2), 543:1-543:22. <https://doi.org/10.1145/3555601>
- Lewis, D., & Moorkens, J. (2020). A Rights-Based Approach to Trustworthy AI in Social Media. *Social Media + Society*, 6(3), 2056305120954672. <https://doi.org/10.1177/2056305120954672>
- Li, Y., Karreman, J., & Jong, M. de. (2022). Cultural Differences in Web Design on Chinese and Western Websites: A Literature Review. 2022 IEEE International Professional Communication Conference (ProComm), 105–111. <https://doi.org/10.1109/ProComm53155.2022.00023>
- Lingel, J. (2011). Information Tactics of Immigrants in Urban Environments. *Information Research*, 16(600). <https://repository.upenn.edu/handle/20.500.14332/2273>
- Lingel, J. (2015). Information practices of urban newcomers: An analysis of habits and wandering. *Journal of the Association for Information Science and Technology*, 66(6), 1239–1251. ProQuest Central.
- Lloyd, A. (2017). Researching fractured (information) landscapes. *Journal of Documentation*, 73(1), 35–47. Arts Premium Collection; ProQuest Central. <https://doi.org/10.1108/JD-03-2016-0032>
- Makri, S., & Blandford, A. (2012). Coming across information serendipitously – Part 1. *Journal of Documentation*, 68(5), 684–705. <https://doi.org/10.1108/00220411211256030>
- Makri, S., Blandford, A., Woods, M., Sharples, S., & Maxwell, D. (2014). “Making my own luck”: Serendipity strategies and how to support them in digital information environments. *Journal of the Association for Information Science and Technology*, 65(11), 2179–2194. <https://doi.org/10.1002/asi.23200>
- Mason, M. (2010). Sample Size and Saturation in PhD Studies Using Qualitative Interviews. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 11(3), Article 3. <https://doi.org/10.17169/fqs-11.3.1428>
- McKay, D., Makri, S., Chang, S., & Buchanan, G. (2020). On Birthing Dancing Stars: The Need for Bounded Chaos in Information Interaction. *Proceedings of the 2020 Conference on Human Information Interaction and Retrieval*, 292–302. <https://doi.org/10.1145/3343413.3377983>

- McKay, D., Makri, S., Gutierrez-Lopez, M., MacFarlane, A., Missaoui, S., Porlezza, C., & Cooper, G. (2020). We are the Change that we Seek. *Proceedings of the 2020 Conference on Human Information Interaction and Retrieval*, 173–182. <https://doi.org/10.1145/3343413.3377975>
- Ndumu, A. (2020). Toward a new understanding of immigrant information behavior: A survey study on information access and information overload among US Black diasporic immigrants. *Journal of Documentation*, 76(4), 869–891. <https://doi.org/10.1108/JD-04-2019-0066>
- Oduntan, O., & Ruthven, I. (2019). The Information Needs Matrix: A navigational guide for refugee integration. *Information Processing & Management*, 56(3), 791–808. <https://doi.org/10.1016/j.ipm.2018.12.001>
- Oh, C. Y., Butler, B. S., & Lee, M. (2014). Information behavior of international students settling in an unfamiliar geo-spatial environment. *Proceedings of the American Society for Information Science and Technology*, 51(1), 1–11. <https://doi.org/10.1002/meet.2014.14505101068>
- Parker, C., Scott, S., & Geddes, A. (2020). Snowball Sampling. In *SAGE Research Methods Foundations*. SAGE Publications Ltd. <https://doi.org/10.4135/9781526421036831710>
- Radecki, C. M., & Jaccard, J. (1995). Perceptions of Knowledge, Actual Knowledge, and Information Search Behavior. *Journal of Experimental Social Psychology*, 31(2), 107–138. <https://doi.org/10.1006/jesp.1995.1006>
- Riemer, K., & Peter, S. (2021). Algorithmic audiencing: Why we need to rethink free speech on social media. *Journal of Information Technology*, 36(4), 409–426. <https://doi.org/10.1177/02683962211013358>
- Ruthven, I. (2022). An information behavior theory of transitions. *Journal of the Association for Information Science and Technology*, 73(4), 579–593. <https://doi.org/10.1002/asi.24588>
- Shuva, N. Z. (2022). 'I actually got my first job through my ex-colleague': Employment-related information seeking behavior of Bangladeshi immigrants in Canada. *Journal of Librarianship and Information Science*, 54(1), 34–53. <https://doi.org/10.1177/0961000621992806>
- Shuva, N. Z. (2023). 'They act like we are going to heaven': Pre-arrival information experiences, information crafting and settlement of immigrants in Canada. *Journal of Documentation*, 79(7), 1–24. Arts Premium Collection; ProQuest Central. <https://doi.org/10.1108/JD-05-2023-0082>
- Strauss, S. K., & Shoham, S. (2008). Immigrants' information needs: Their role in the absorption process. *Information Research*, 13(4). <https://research.nualart.cat/texty/13-4/paper359.html>
- Suh, M., & Hsieh, G. (2019). The 'Had Mores': Exploring Korean immigrants' information behavior and ICT usage when settling in the United States. *Journal of the Association for Information Science and Technology*, 70(1), 38–48. ProQuest Central. <https://doi.org/10.1002/asi.24078>
- Syn, S. Y., & Oh, S. (2015). Why do social network site users share information on Facebook and Twitter? *Journal of Information Science*, 41(5), 553–569. <https://doi.org/10.1177/0165551515585717>

- Tajfel, H., Turner, J. C., Austin, W. G., & Worchel, S. (1979). An integrative theory of intergroup conflict. *Organizational Identity: A Reader*, 56(65), 9780203505984-16.
- Taylor, S., & Todd, P. (1995). Decomposition and crossover effects in the theory of planned behavior: A study of consumer adoption intentions. *International Journal of Research in Marketing*, 12(2), 137-155. [https://doi.org/10.1016/0167-8116\(94\)00019-K](https://doi.org/10.1016/0167-8116(94)00019-K)
- Underhill, E., Huang, S., Yi, S., & Rimmer, M. (2019). Using social media to improve temporary migrant workers' access to information about their employment rights. *Journal of Australian Political Economy*, 84, 147-174.
- UNESCO. (2023, April 27). Migration and inclusive societies. <https://www.unesco.org/en/no-racism-no-discrimination/migration>
- Wilson, T. D. (1981). On User Studies and Information Needs. *Journal of Documentation*, 37(1), 3-15. <https://doi.org/10.1108/eb026702>
- Wilson, T. D. (1997). Information behaviour: An interdisciplinary perspective. *Information Processing & Management*, 33(4), 551-572. [https://doi.org/10.1016/S0306-4573\(97\)00028-9](https://doi.org/10.1016/S0306-4573(97)00028-9)
- Xie, I. (2009). Information Searching and Search Models. In M. J. Bates & M. N. Maack (Eds.), *Encyclopedia of Library and Information Sciences*, Third Edition (0 ed., pp. 2592-2604). CRC Press. <https://doi.org/10.1081/E-ELIS3-120043745>
- Zhu, H., & Huberman, B. A. (2014). To Switch or Not To Switch: Understanding Social Influence in Online Choices. *American Behavioral Scientist*, 58(10), 1329-1344. <https://doi.org/10.1177/0002764214527089>

© [CC-BY-NC 4.0](#) The Author(s). For more information, see our [Open Access Policy](#).