

The Best, the Worst, and the Hardest to Find: How People, Mobiles, and Social Media Connect Migrants In(to) Europe

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Abstract

For displaced people, migrating into Europe has highly complex information needs about the journey and destination. Each new need presents problems of where to seek information, how to trust or distrust information, and financial and other costs. The outcomes of receiving poor or false information can cause bodily harm or death, loss of family, or financial ruin. We aim to make two major contributions: First, provide rich insights into digital literacy, information needs, and strategies among Syrian and Iraqi refugees who entered Europe in 2015, a topic rarely dealt with in the literature. Second, we seek to change the dominant perspective on migrants and refugees as passive victims of international events and policies by showing their capacities and skills to navigate the complex landscape of information and border regimes en route to Europe. Building on research at Za'atari refugee camp (Jordan), we surveyed 83 Arab refugees in two centers in Berlin. Analyses address refugees' temporal information worlds, focusing on the importance and difficulty in finding specific information, how migrants identify mis- and disinformation, and the roles of information and technology mediaries. Findings illustrate the digital capacities refugees employ during and after their journey to Europe; they show social support via social media and highlight the need for a radical shift in thinking about and researching migration in the digital age.

Keywords

refugees, displaced people, Syria, media use, information texture, border landscape, social connection, ICTs, digital literacy, misinformation, disinformation

Introduction

Each year, millions of people forcibly leave their homes due to disasters, climate change, persecution, or armed conflict. In 2015, the massive influx of refugees from crisis-ridden countries such as Syria, Afghanistan, and Iraq into European territory revealed fundamental political controversies among the European Union (EU) Member States and led to the collapse of the European border system. Soon the alleged “European migration crises” topped European and international newspapers. In this somewhat heated atmosphere, German chancellor Angela Merkel ordered a temporary open-door asylum policy by famously noting “Wir schaffen das” (Merkel, 2015, p. 4). Her decision to suspend EU rules on registering asylum seekers in the first EU state they entered aimed at the growing number of Syrians fleeing the conflict in their country. In reality, though, significant numbers of people from other countries took the opportunity to enter, too. In this situation, the city of Berlin, the capital of the German “refugees welcome” policy, soon became a hot spot for the European controversies over the humanitarian crisis. In Berlin, all arriving asylum seekers had to register

with one central reception facility, the Regional Office for Health and Social Affairs (LAGeSo). As one of the authors witnessed on a daily basis, exhausted and partly traumatized by war, expulsion, and months of escape, hundreds of refugees, both adults and children, queued every day for being registered. It soon became evident that the rush of refugees from Syria, the Balkan regions, Afghanistan, and Iraq overwhelmed the LAGeSo hopelessly. Being capable of issuing waiting numbers for about 300–400 people and processing around 100 applications a day, on just 1 day 1,900 refugees

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could line up to register at the LAGeSo. In the midst of the German “refugee crisis,” they made Berlin a sad synonym for official failure. Without the numerous, mostly female, volunteers and the countless helpers in secular and ecclesiastical organizations, who largely worked until exhaustion, the humanitarian and administrative crisis would have been much more intense (Bundesamt für Migration und Flüchtlinge [BAMF], 2016; Karakayali & Kleist, 2016). This clumsy handling of the influx of hundred thousands of refugees, followed by the New Year’s Eve sexual assaults attributed to asylum seekers *inter alia* in Cologne and a string of Islam-inspired terror attacks, changed the mood in the country (Stinauer, 2017). Losing rapidly support, chancellor Merkel took a tougher approach on asylum seekers in Germany (re-) installing measures to reduce their numbers, along with the help of international partners such as Turkey. The public backlash made anti-immigrant sentiments and rhetoric come to the fore, facilitating among others the fast rise of German right-wing populist party Alternative for Germany (AfD), largely unknown before.

In attempt to balance the public discussion inspired by fears of uncontrolled immigration and subsequent financial burdens with scientific evidence, we conducted research about those who arrived with a view on their abilities and agency. Trying to add a new angle of view, we focused on digital literacy and complex information needs migrants and particular refugees face during their journey and at their destination in Europe. In the remainder of this article, we introduce the context of the research in Berlin; discuss social media, concept of digital literacy, and relevant research on refugees; and share our findings with regard to the survey methodology.

Asylum Seekers in the City of Berlin

In 2015, Germany received an unprecedented individual first asylum applications with 476,649 applications submitted to the BAMF, the German Federal Office for Migration and Refugees; 273,815 (or 135%) more than in the previous year (BAMF, 2017). From Syria, 162,510 asylum seekers comprised 34% of all applications. Among the top 10 countries of origin, 4 are from the Balkan regions: Albania, Kosovo, Serbia, and Macedonia, evidencing that the open-door asylum policy toward Syrian refugees attracted nationals from other countries as well. However, the actual number of asylum seekers entering Germany was significantly higher, since the formal application for asylum is processed with a time delay, and some who submitted and distributed (in)to Germany moved to other EU countries. In the EASY (“Erstverteilung von Asylbegehrenden”) system, for instance, around 1.1 million accesses of asylum seekers were registered nationwide (BAMF, 2016). In Berlin, 27,247 asylum seekers, 3.8%, were settled in 2017 (BAMF, 2017) with notable impact on the city. As the Statistical Office of Berlin-Brandenburg states, the overall growth of Berlin in terms of population was driven by

the influx of foreigners—the first such instance in years. Indeed, of Berlin’s 3.67 million registered population in 2016, every third Berliner came from abroad or was German with “migration background.” In 2015/2016, Syrians (28,600) became the third largest foreign group in Berlin, after Polish (55,800) and Turkish people (97,700; Statistical Office of Berlin-Brandenburg, 2017).

Closer examination shows that the majority of asylum applications (65.7%) in 2016 were by men—higher in all age groups up to “under 65 years.” Only in the “65-year-old and older” category is the proportion of female applicants greater. Furthermore, 36.2% (261,386) of asylum seekers are under 18 years old, and almost three-quarters (73.8%), namely, 532,799 persons, are under age 30 years (BAMF, 2017). Thus, the overwhelming majority of asylum seekers in 2015–2016 are male and under 30 years of age—a trend reflected in our study.

The arrival of more than a million refugees and migrants clearly left its marks on German politics and society. All levels of administration—from local communities to regional and national authorities—faced unprecedented challenges, while the question of social equity and burden sharing rose to the fore. The political difficulties to mitigate the “European refugee crisis,” however, should not excuse forgetting the challenges and hardships for those who came to Europe. Besides the daunting challenges and emotional trauma of uncertainty and loss which displaced persons, either internally (IDPs) or internationally, face during the flight, on arrival new difficulties await. In contrast to the safe haven and imagery that displaced persons seek, they are confronted with cramped living quarters, resource scarcity, and the animosity of and violence by home and host-country citizens. This holds particularly true for children and women who are among the most disadvantaged (Marfleet, 2006). Whether within or across national boundaries, the displaced persons are forced to choose between bad and worse.

While migration and displacement are worldwide increasing, the use of information and communication technologies (ICTs) has spread and intensified. Driven by the rapid increase in cheap mobiles and services, migrants and displaced persons use mobile and Internet technologies in planning departures, managing flight, coordinating with others, and finding way to new locations. Similarly, organizations supporting displaced persons are making far more intensive use of new ICTs (Bishop & Fisher, 2015; Vernon, Deriche, & Eisenhauer, 2016). From mobiles and social media to crowdsourced mapping, the rapid acceleration of technology use is both benefiting and creating challenges for refugees and service providers alike. For internationally displaced persons, migrating into Europe is associated with highly complex information needs about the journey and the destination; each new need presenting problems of where to seek information, factors of trust, and financial and other costs and where the outcomes of receiving poor or false information can most severely cause death, loss of family, or financial ruin.

Refugees and Social Media

At the margins of mainstream migration research, literature on forced migration and media use is steadily growing, fueled mainly by three disciplines—migration studies, media and communication studies, and information science. The most prominent strands of literature address transnational migration, e-diasporas, and media landscapes and information worlds of refugees and migrants.

Regarding transnational migration, a growing body of research examines how migrants and refugees are using technologies, particularly cell phones, to connect to their countries of origin and, in some cases, help to create new relationships and connections in their countries of destinations (Horst, 2006; Horst & Taylor, 2014; Panagakos & Horst, 2006; Vertovec, 2004 and 2009, p. 54) calls the widespread use of cell phones among today's mobile populations "the social glue of migrant transnationalism." Furthermore, mobile phones play a vital role for emotional intimacy. Thomas and Lim (2010) found that the use of mobile phones among transmigrants enhance their overall well-being as they facilitate communication and intimacy with loved ones in their countries of origin as well as within their diasporic communities. As Madianou and Miller (2011) show, mobile phones enable migrated parents to keep a (more) active role in their children's lives mediating new forms of digital intimacy. Studies on transnational migration also address how mobile phones and the virtual in general stimulate a (new) sense of belonging, for constructing common experiences and social identities (Gajjala, 2004; Hedge, 2011; Parham, 2004; Wilding, 2006) as well as self-representation (Diminescu & Loveluck, 2014). Witteborn (2015) emphasizes how new technologies enable people to enhance sociality and build networks. On a more negative note, Archambault (2011) suggests that new media may disrupt intimate long-distance relationships when they are used for personal surveillance.

In the context of e-diasporas Diminescu (2008, 2012) argued that migrants cannot be seen as "double absent" (Sayad, 2004) but must be conceptualized as multiple connected. According to Diminescu and Loveluck (2014), the ubiquitous presence of digital technologies affects all aspects of a migrant's experience both pre-entry and post-arrival. Before entering a new country, the migration journey often starts by going "through the screen," that is, crossing an informational frontier made up of databases and identification systems such as the Schengen Information System (SIS) to gather information on the desired destination. After arrival, migrants face the early necessity of acquiring a SIM card or mobile phone and gain access to a computer, to find work and stay connected with family and friends. These multiple forms of presence leave traces in the analog and virtual world that provide a rich ground for understanding migration trajectories and migrant networks if combined together (Diminescu and Loveluck, 2014). In addition, Georgiou (2005, 2013) and Hepp, Bozdog, and Suna (2011) show how

diasporic minority groups use media in complex ways that feedback how they communicate interest, make claims, and mobilize identities. With an emphasis on youth digital diasporas, Leurs and Ponzanesi (2011) develop this argument further. They stress that established dimensions to locate a migrant's feeling of belonging such as countries of origin/country of destination or local/transnational no longer hold in the hypertextual world of esthetics. In the digital diasporas they inhabit, migrant youth show mutual recognition and express individuality by combining national or "ethnic" affiliations with other, largely transnational, youth subcultures producing a blend of cultural belonging and hybridized connections that is far more articulate and complex as current theory allows (Leurs & Ponzanesi, 2011). Similar findings were reported by Fisher, Yefimova, and Bishop (2016), who worked with immigrant and refugee youth from Latin America, Myanmar, and East Africa in understanding the roles youth play as information guides on behalf of families, friends, and within communities and social institutions. Their work shows that refugee youth are early adopters of technology and serve as linguistic, geographic, and cultural wayfarers on behalf of others; however, youth are often overburdened with load of unpaid helper including in social institutions such as schools and do not share parents views of home culture.

Providing new evidence, Gillespie et al. (2016) and Wall, Campbell, and Janbek (2017) take a more critical stance on new media. They confirm that new technologies play a crucial role in the planning and navigating the dangers of a migration journey as well as in a migrant's protection and empowerment after arrival. Yet they warn that particularly the smartphone is a double-edged sword: As a resource, migrants benefit for making translations, accessing vital services (such as legal advice, medical help, and shelter), and keeping in touch with families and friends. But the digital traces that migrants leave make them vulnerable to surveillance by state and nonstate actors and to intimidation by extremist groups (Gillespie et al., 2016). Coining the term "information precarity," Wall et al. (2015) found that refugees experience information precarity in five forms: in terms of (a) the technological and social access to information; (b) the prevalence of irrelevant, sometimes dangerous information; (c) the lack of their own image control; (d) surveillance by the state; and (e) disrupted social support.

Crucial to our research and understanding is the concept of digital literacy as social practice. Although the term "digital literacy" had been applied before, its introduction is often attributed to Gilster (1997). Pointing out the differences between digital information media and conventional print media, he conceptualizes digital literacy as the development of competences in four areas, that is, assembling knowledge, evaluating information content, searching the Internet, and navigating hypertext (Gilster, 1997). As Lankshear and Knobel (2006) emphasize, the most commonly used definitions of digital literacy tend to (a) confine digital literacy

almost exclusively to roles concerned with information; (b) taper off interaction with information to assessing its truth (or validity), credibility, reliability, and so on, as a defense against being manipulated; and (c) theorize it as a “thing” or master competence to possess, lack, need, and acquire. In this vein, digitally literate people are often seen as functioning better in the knowledge-driven economy, while digital illiterate people are perceived as vulnerable and passive (Lankshear & Knobel, 2006). In light of this criticism, concepts such as media literacy and information literacy (Koltay, 2011) or, more recently, multicultural literacy and emerging technology literacy (Cordes, 2009) soon proliferated. But while the first two are rather applied to describing consumption and not always production of digital content (Livingstone, 2004), the latter appear as subcategories of what is identified as a key ability in the digital age. Yet in our study, we apply a slightly different approach and follow Street (1984) in conceiving literacy as “social practices and conceptions of reading and writing.” Widening the notion of digital literacy, we assume that many cultural ways of reading and writing exist and that individuals move in and out multiple ways of reading and writing. In this sense, they become both consumers and producers of digital content as well as active agents in digital practices of online searching and communicating. In practice, this is demonstrated by the differences in how people read and write on a (public) Facebook page or in a person-to-person WhatsApp communication as well as in their strategies and social practices to identify and handle misleading or wrong information.

Methodology: Research Setting

The city of Berlin, where the massive influx of refugees in 2015 and 2016 caused administrative turbulences, committed support, and the rise of (new?) anti-immigrant sentiment, provided an exceptional location for this study. Even after the number of arrivals dropped significantly, due to the highly disputed refugee pact between the EU and Turkey, some 9,000 refugees are living in city gyms, the hangars at the Tempelhof Airport or elsewhere in an absolute emergency accommodation (Beikler & Vogt, 2015; Kopietz, 2016; ZEIT Online, 2016). At the time of our research, there were two reception centers at Storkower Street, officially belonging to the district of Pankow, where the authors recruited their interview partners through personal appearance and snowballing. Visiting the two reception centers for weeks during working time and holidays, the trained Arabic-speaking interviewers approached the inhabitants on the facilities and asked about their willingness to participate in the study. To raise the number of female interviewees, the female interviewers turned to conducting the interview not in the open but in the somewhat protected environment of the refugees’ private space. The sample, however, might be skewed toward less mobile refugees (mothers, fathers, and elder people) who remained in the camp as those more active

were searching the city for (irregular) work and an apartment. Typical for Berlin, the accommodations at Storkower Street were situated in a converted former office building, consisting of a collective living facility for refugees who passed the first admission procedure and were living there for several months but also for years as well as an emergency shelter for the initial reception of refugees. Both facilities accommodate roughly 500 people, of whom around 150 are children and young people. In the first structure, the refugees live in two- to three-bedded rooms and have common sanitary facilities, a kitchen as well as a common room, and dining room on each floor. The facility has a play room for children, while a playground is planned in the outdoor areas. Refugee children for whom schooling is compulsory attend the nearest available school. If children are unfamiliar with the German language, they were first taught in special welcome classes by teachers provided by the Berlin Senate Department for Education, Youth and Science. In addition to the center manager, four social workers, one administrative employee, one caretaker, and child care worker worked there. Security guards were available 24 hr a day, and every person aiming to enter the facility was requested to identify themselves and register as visitor. Until today, the two facilities are managed by the Protestant Youth and Welfare Office (EJF) supported by a large circle of volunteer workers from the citizens’ initiative “Pankow helps.” A third reception center was opened in directly proximity in 2016 by a private owner. In an attempt not to make the inhabitants an easy target for rising anti-immigrant sentiment in Germany, further sociodemographic details on the accommodated refugees was deliberately withheld.

Researching Crisis-torn Refugees—Privacy Rights and Ethics

Interviewing recently arrived refugee adults and children, specifically in refugee accommodation centers, requires special sensitivity and preparation (Borkert & De Tona, 2006). As Fontes (2009) observes, biases, cultural differences, and linguistic misunderstandings have the potential to exert a powerful influence in interviews with migrants—even when interviewers have best intent. Guidelines and recommendations for interviewing migrants and refugees both adults and children, commonly categorized as “vulnerable groups,” are not missing. Besides, there are good publications with regard to studying social behavior online as well as legal provisions on processing personal data in Germany and Europe.¹ As ethical decision making is a deliberative process, the authors consulted different people and sources during the research process: regional experts and experienced interpreters, fellow researchers, and people participating in and familiar with the context under study as well as ethic guidelines and publications in migration and refugee studies as well as Internet and information research. Although principles vary by disciplines, some shared basic principles of research

ethics and ethical treatment of interview partners can be identified that formed the basis of our methodological approach. These core principles are based on the fundamental rights of human dignity, autonomy, protection, safety, respect for human beings and particularly children, justice, and the general public interest.² We agree with Markham and Buchanan (2012): that the greater the vulnerability of the interviewee and the community he or she belongs to, the greater the obligation of the researcher to protect the interlocutor and involved community. To balance harms and benefits, we abandoned interview questions which potentially could have inflicted the interviewee and exert an influence on his or her asylum request. In consequence, detailed questions on migration routes to Germany or country of origin context questions were not included.³ Equally, information on specific websites of interest (URLs) was neither archived nor subjected to analysis. As adolescents and adults were interviewed whose first language is not German, the authors arranged for qualified foreign language interpreter ahead of time (Fontes, 2009). We deliberately involved Arabic-speaking interpreters (two women and one man), who visited the refugee accommodations in their context of volunteer and/or professional work. The interpreters were thus known to the refugees inhabiting the facilities as well as to the center managers, which helped create an atmosphere of mutual trust and confidence. As humans, adults are influenced by how they feel physically, and the data collection assistants were briefed not to interview refugees who were overly tired, hungry, or unwell. A culturally acceptable snack was made available, and it was made sure that the interviewees were comfortable with the room settings. In this context, some female interviewees preferred to be interviewed in the bedrooms inhabited by the family in contrast to shared facilities. According to Fontes (2009), rumors, jealousy, privacy, and reputation are often crucial issues in close-knit (ethnic) communities, while the concept of “confidentiality” may not exist in every language. Using simple language, the interviewers explained to the interviewees where their information would be shared and with whom. Considering that interviews which are held in a warm and friendly way are more likely to produce valid information (Davis & Bottoms, 2002), the data collection assistants were asked to approach and assist refugees in a warm, relaxed, supportive, and non-judgmental manner.

Analysis

Aiming to use statistics to generalize findings, we developed a questionnaire in English combining migration research with information studies and building on past experiences in research carried out in the Za’atari refugee camp in Jordan (Fisher, 2018; Fisher, Yefimova, & Yafi, 2016).

The questionnaire was pretested, revised, and again pretested before the actual data collection began. A total of three qualified foreign language interpreters and three

Arabic-speaking refugees⁴ who volunteered for the study were trained to assist with the compilation of the questionnaire and collected data. Using informal interpreters such as family members and friends was avoided to increase the accuracy, confidentiality, and impartiality in interpretation.

The assisted survey used a random sampling approach to gather data with 83 individuals. The completed questionnaires were collected and then transferred to an (English) online survey by a bilingual researcher. The questionnaire comprised 30 questions, 24 closed-ended questions, and 6 open-ended questions for which six indices were constructed to guide analysis:

- Information needs;
- Information seeking and role of ICTs;
- Identifying mis- and disinformation;
- Role of information mediaries;
- Social and economic inclusion factors of migrants in host communities.

Data were analyzed using nonparametric statistics disaggregating by age and gender and content analysis.

In terms of positionality, the co-authors bring different disciplinary strengths and insights to the study. German sociologist Maren Borkert has vast international experiences in interdisciplinary and transdisciplinary research and communication. She works at the intersection of business studies, innovation, and computation and aims at introducing digital methods to the study of migration, inclusion, and entrepreneurship. Karen Fisher is an information scientist specializing in info-sociological aspects of people and information. Engaged at UNHCR Za’atari Syrian refugee camp by the Jordan/Syrian border since 2015, her field experience of displaced people by conflict zones builds on years working with displaced migrants in the United States. Eiad Yafi is a computer scientist having vast experience in information and communication technologies for development (ICT4D) with a focus on ICTs for sustainable education and immigrants. From Homs, Syria, his family are members of the Syrian refugee community and e-diaspora.

Findings

Demographic data included nationality, age, gender, civic status, and country of stay. Of the 83 participants, 87% were males and 13% female; all were between 15 and 54 years old with 35% being youth (age: 15–24 years). For respondents under 18 years of age, interviewers made sure to obtain parental or guardian permission before conducting the interview. Approximately 44% were married with 53% single, 1% divorced, and 1% widowed. The majority were from Syria (77%), 15% Palestinian and Syrian Palestinian, 5 participants from Iraq, and 1 from Egypt. The participants were well educated: 50% completed their education before fleeing their country. Regarding highest level of enrolled education, 23% were enrolled in a university program or above, 46% in

an intermediate or middle school, while 10% were in a secondary/high school, and 10% in a trade school/college. Considering Syria's location at the eastern end of the Mediterranean Sea, the majority of Syrian migrants fled to neighboring Turkey and Lebanon before able to enter Europe. In our sample, 80% traveled by sea and land with 8% by air. Historically, migrants move in groups to reduce the risks of the journey. When asked, 24% traveled with friends, 20% with spouses and/or children, and 30% with other relatives. Yet, almost one-third (31%) traveled alone.

Information Needs

The information needs strand focused on refugees' needs, their information seeking, and the importance of information before and during migration. From the survey's 14 choices plus "other category," the most critical information needs were "well-being of family in home country" (81%), "news about my country of origin" (77%), learning a new language (71%), and learning the culture of destination country (61%). Learning how to use communication technologies was reported critically important by 42%. At the other spectrum—information not important at all, participants listed "communicating with smugglers while travelling" and "identifying worst European country."

To further understand refugees' information needs, we asked about migration consideration factors. The current influx of migrants to Europe provides new insights. The most critically important were "political stability in a chosen country" (78%) and "strong economy in the chosen country" (77%). While 73% respondents indicated "easiness of the asylum procedure" as an important issue; the least important topics were "health care system" (50%), having a social support system (50%), "aid provided in host country" (41%), and "weather/climate" (25%).

Information Seeking and ICTs

With the help of ICTs and social media networks, the participants seemed to have little difficulty in finding needed information, especially about route maps, identifying essentials to bring, exchanging money, and so on. For example, 58%, and respectively, said that it was "very easy to find" out the economy strength and political stability in Germany, while 49% stated that "best and worst European countries to migrate" along with "How to use communication technology" (32%). Challenging information topics included "health care system" (27%), "vocational and university education for adults" (24%), and "friendliness of local people" (21%).

Digging further, disaggregating the results by gender and age group, shows gender was not a significant factor to determine the use of the ICTs to seek for help or information with 36% females and 32% males confirming not using the mobile phone seeking for help or information. However,

disaggregating the results by age shows almost all older participants (age: 45–54 years) used their mobile and technologies to seek help or information during their trip—contrasted with 36% of the 15–24 years age group. While older people may have more familial responsibility to stay in touch and seek/share information with family; younger respondents, mostly males, may not have had funds to cover calls.

Regarding ICTs for obtaining needed and serendipitous information, 67% respondents used their mobile to call people asking for help or information during their trip to Europe. Most participants (88%) used their own SIM cards for accessing the Internet/Wi-Fi since they left their country, while 37% used Internet cafe or public places, followed by bus/train stations (18%) for getting connections. However, only 39% used their mobile to access social media such as Facebook en route to Europe. This is significant, showing that the heavy use of social media was prior to deciding and arranging for the trip. This relatively small percentage supports others' findings that "Conversations with other travelers" is an important information source and that the smaller portion of the refugees with continuous access to information via social media were information mediators (Figure 1).

Identifying Mis- and Disinformation

Despite mobile use, social media, and other people as information sources, respondents did not receive accurate information all the time. In total, 51% stated that information was "sometimes correct—a couple of sources were ok," while 25% received information that was "mostly correct a lot of valuable, accurate information," and 23% receiving "rarely correct" information. When asked how they knew when to distrust information, 24% replied "learning by experience," suggesting refugees became aware of when to distrust information only when faced different reality. The importance of other people in judging information was raised by 14% who knew to distrust information from friends and people who arrived earlier.

Information Mediarities

Many actors played a significant role in helping refugees to search for information using the Internet and mobile phones. "Friends" (49%) topped the list, followed by "other refugees" (23%). Considering that the majority of migrants reached Europe via sea and land, smugglers surprisingly were not important actors—only 6% reported "smugglers" as providing help with searching for information (Figure 2).

Open response data about infomediaries were analyzed for person who helped and type or nature of help, which were grouped into eight categories: travel/directions; information unrelated to travel; money/material goods; refugees, child and health care; language and education; technology; and,

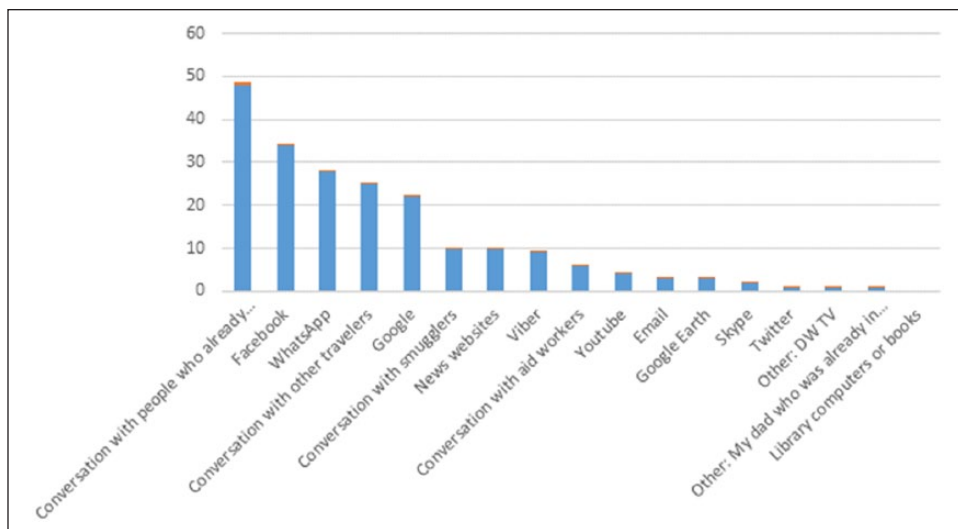


Figure 1. Sources for learning the best route to travel.

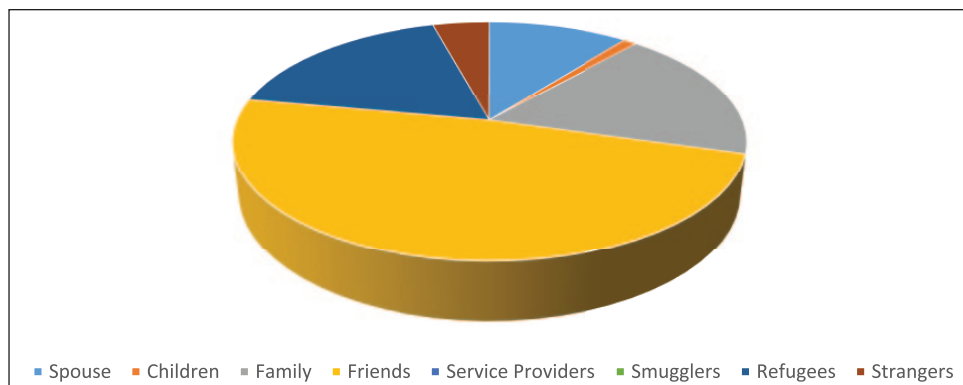


Figure 2. Actors playing significant role in helping refugees with information and technology.

finally, employment and membership. Since all migrants were concerned about arriving safely to their destination, it was expected that travel/directions was most prevalent. Examples include the following:

- “Someone showed us the way to the United Nations office for the support of refugees in the capital of Hungary” (34-year, male, Syrian, university degree holder);
- “A Turkish taxi driver picked us up 70km before the Austrian border and dropped us off in Vienna and saved us from having to do the finger prints in Hungary” (26-year, male, Syrian, university degree holder);
- “My uncle took me from Munich to Berlin” (23-year, male, Iraqi, intermediate school/middle school certificate holder);
- “Someone helped me to find the way to the station” (21-year, male, Syrian, secondary school certificate holder).

Regarding monetary and goods materials: As Middle Eastern societies are rather conservative with strong family relations, it was consistent that infomediary help included family member, both close and far:

- “My husband’s brother helped me with money” (36-year, female, Syrian, intermediate school/middle school certificate holder);
- “My cousin helped me with money” (23-year, male, Syrian, university degree holder);
- “My brother gave me money” (24-year, male, Syrian, intermediate school/middle school certificate holder).

The helpfulness and sympathizing of strangers, mainly Europeans, affected by social media show that casing the difficulties faced by migrants was demonstrated through informational and instrumental assistance, such as food, family, a car lift, shelter, children care, and so on. These results support the Thomson

Reuters Foundation study in September 2016, which found that more than three-quarters of Europeans sympathize with Syrian refugees coming to their countries, challenging reports of growing anti-immigration sentiment across the continent. Examples of European help include the following:

- “The smuggler didn’t take money for the transport of my children” (42-year, male, Syrian, intermediate school/middle school certificate holder);
- “In Greece, a Lebanese woman took care of my children”;
- “Someone gave me money after my money got stolen” (30-year, male, Palestinian, intermediate school/middle school certificate holder);
- “An Austrian family invited us to their home, fed us, gave us money and rented a car for us to get to Germany” (41-year, male, Syrian, intermediate school/middle school certificate holder);
- “A woman helped me in Berlin to find my way back to the refugee camp and she also bought me a ticket for the public transport” (31-year, male, Syrian, intermediate school/middle school certificate holder).

“Help not related to travel” included advices to follow groups and not individuals, the necessity to communicate with people who arrived Germany earlier, not to trust smugglers, and information on asylum process in Germany and Austria, how to find a pediatrician, “warning from the police and from the places where the police usually are” (32-year, male, Syrian, secondary school certificate holder) and “My uncle registered me in a football club” (19-year, male Syrian).

Given the plethora of Facebook pages and other messaging applications as sources of information to migrants seeking a safer place, we asked whether the refugees themselves were contributing to sharing information with others, on which platform, such as Facebook, WhatsApp, Viber, and so on, and what data were being shared, such as posts, texts, voice messages, maps, video file, and so on. Analysis showed that respondents were not spending large times sharing information while traveling, especially as Facebook was inaccessible at times. Only 18% posted daily on Facebook and 12% posted to Facebook groups pages. However, text messaging was popular, due to the ease of using WhatsApp and Viber: 42% sent text messages via chat applications when traveling, while 39% sent voice messages via same applications. Sending maps or video files was not significant, due to poor connectivity and other factors. This low sharing behavior was boosted on arrival in Europe: daily texting and voice messaging remained highest at 42% and 39%; sending maps and video files daily via social media also increased, suggesting refugees had good connectivity in Germany.

Discussion: The Need for a Radical New Approach to Understanding Migration

Our research confirms the relevance of smartphones and Internet-based communication tools such as WhatsApp and Facebook for migration but highlights the intrinsic value of other people. This finding is consistent with the UNHCR Connecting Refugees report (Vernon et al., 2016) and International Rescue Committee (IRC), which assessed the importance of mobiles to Arab refugees in 2015 (Handelsblatt, 2015). Our research shows that social media enables contact with families and friends, while creating and maintaining social networks between those on the move and people who migrated prior, shedding a fresh light on the question of disrupted social support in situations of dislocation and refuge (Wall et al., 2017; see also Dekker, Engbersen, Klaver, & Vonk, in this special section). Our findings support Gillespie et al. (2016) and Wall et al. (2017) that refugees who fled to the EU, in 2015–2016, particularly from Syria and Iraq, are largely well educated and digitally literate. They are frequently concerned about staying connected, finding access to Wi-Fi and phone charging but most of all to stay safe online and off-line. Misinformation is widespread, and it is difficult to know which information to trust (Gillespie et al., 2016). Indeed, people enjoy sharing information, even when they do not believe it (Karlova & Fisher, 2013). In consequence, misinformation and disinformation, defined as inaccurate information and deceptive information, respectively, have to be considered as varieties of human information behavior. Both are by default diffused through social networks. Social media such as Facebook and WhatsApp has made their diffusion easier and faster. As our research shows migrants and particularly refugees for whom false information can potentially lead to severe harm and even death are very well aware of default and misleading information circulating in social media. Nevertheless, refugees described being both consumers and producers of social media content. With 95% of them using their smartphone during their journey to Europe, they demonstrate an advanced degree of digital connectivity and literacy. This holds true also after they arrived in Europe and Germany: 89% and 84% of refugees shared information on their journey via WhatsApp, Viber, and so on as a text or voice message with 42% and 39% doing so daily.

Our findings highlight, on one hand, the relevance of transnational digital networks among refugees and migrants as well as their impact on migration movements. The overwhelming majority (85.5%) of the refugees, in fact, learned their best route to Europe via Facebook, WhatsApp, or Viber. Literally, no one accessed book or library computers for this purpose. With strong digital literacy, our findings show, on the other hand, that migrants are digital agents of change who themselves post and share information in social media and digital social networks. As both consumer and producer of digital migration knowledge, they, furthermore, demonstrate an elaborate degree of awareness with regard

to information quality, mis- and disinformation. Besides digital connectivity and social media literacy, it is the social ties to persons who successfully migrated that our respondents considered most trustworthy in terms of accurateness, completeness, and trueness of information. The latter points toward a certain rationality in matters of flight that seem to contradict the common idea of fleeing as a helter-skelter reaction to a situation of stress in which someone leaves everything behind and starts to run. For the persons interviewed, at least, fleeing rather seems to manifest itself as an (pro)active process of decision making in which complex information needs and information gains through social media play a vital role.

Finally, we wish to highlight three implications of our main findings summarized above: This regards, first and foremost, the common misconception that all refugees are passive victims fleeing misery with nothing but their lives. Our research shows instead that the newly arrived refugees in Germany actively escaped using a wide range of resources and skills available to them (including ICT, family ties, creative solution seeking, and the rational assessment of information quality, for instance). To our understanding, this false image of refugees in Germany needs to be revoked. Second, our analysis of the digital connectivity, information behavior, and interaction needs among refugees during and after their journey to Europe calls for the establishment of a digital scholarship in migration studies capable of exploring the digital traces that migrants leave behind with digital (=computational) tools, while contributing to the development of own methodological approaches and theoretical perspectives based on achievements of the social sciences in the analog era. Third, for future research, we recommend focus on understanding the most effective ways of facilitating integration that reflect refugees' cultural and communication stances, specifically regarding people, place, and time. Fisher (2018), for example, reports on distinct design and field research insights of Syrians displaced in the Middle East that are relevant to co-designing integration services, systems, and policies in Germany and EU. Examples include understanding the roles of young Arabs (male and female) in serving as infomediaries in sub-communities; how libraries and other cultural agencies may be engaged in integration, especially given our study's finding that refugees did not use books and libraries while en route to Germany; and facilitating refugees' needs and access to information about education, health care, civics, and other hard-to-find topics. Relatedly, activities that bring mainstream society together with refugees such that established residents can understand the culture, experiences, and concerns of refugees are also needed for future work.

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Notes

1. For the latter especially the data protection directive (Directive 95/46/EC) and the General Data Protection Regulation (GDPR 2016/679) of the European Union (EU) which enters into force on 25 May 2018 proved to be informative.
2. These principles are codified in policies and documents such as the UN Declaration of Human Rights, the Helsinki Declaration, and the Belmont Report or the European Textbook on Ethics in Research.
3. According to the Dublin Regulation (Regulation No. 604/2013 and predecessors), an EU law, a refugee's asylum request must be processed in the EU Member State through which the applicant first enters the EU. Thus, asylum applicants tend to be careful when talking about their stories of flight as details might be used against them during the asylum process. In an attempt to relieve pressure on Hungary and Greece, in 2015, Berlin stopped returning Syrian asylum seekers to their first port of entry in the EU. Yet information on migration journeys and flight routes remains sensitive as non-Syrian nationals tried to benefit from the exemption and enter the EU pretending to be Syrian nationals. Together with the EURODAC Regulation which establishes a Europe-wide fingerprint database for unauthorized entrants to the EU, the Dublin Regulation is the cornerstone of the Dublin System.
4. A total of two studied at TU Berlin and one inhabited the same refugee accommodation facility and considered trustworthy by the engaged foreign language interpreters.

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