Abstract. Purpose: This preliminary study focuses on information practices of French-speaking immigrants to Israel with three goals in mind: a) understanding their information needs; b) mapping information sources used before and after immigration to cope with these needs, and c) analyzing the information practices related to immigrant’s wellbeing. The Israeli law allows immigration and citizenship for any person of Jewish ascendant, and Israel is the fifth country in OECD by immigrants share in its population. Immigration is not only mobility but also a significant transition in life, impacting on immigrant’s wellbeing, levels of income, health, and housing conditions. Efficient information practice plays an essential role in coping with these issues.

Methodology: French questionnaires were published on Facebook and LinkedIn groups dealing with immigration to Israel in August and September 2020. Seventy-one responses were collected.

Findings. This preliminary study revealed a shift in Jewish immigrants’ information sources to Israel, from familial and organizational to digital information sources. A second finding is a factor analysis of the main topics researched by immigrants, developed in three components: Integration, Short-term settlement, and long-term settlement. The last finding shows how these components are correlated to information sources used after immigration.

Originality. Original aspects of this preliminary study are exploring information sources before and after immigration and their correlation to immigrants’ information needs. These findings may also pave the way to include information practices in immigration policy and government agencies’ work.

Keywords: Information practice · Information sources · Information needs · Immigrants · Immigration policy

1 Introduction

The world is usually represented nowadays as a “global village” due to increased population mobility and digital connections. International migration is usually defined as “the movement of persons away from their place of usual residence and across an international border “ to another country [1]. Faist [2] affirms that the term “migrant refers to
a person who moves from one country to another, intending to take up residence there for a relevant period.” OECD reports that more than 120 million people live in other countries than their land of birth [3]. In Israel, 22% of the population was born abroad, making it the fifth OECD country by immigrants share [4].

Immigration is not only mobility but also a significant transition in life, impacting on immigrant’s wellbeing, income, healthcare, or housing conditions. Efficient information practice plays an essential role in coping with these issues. Information practice is a concept encompassing information needs, information use, and information sharing [5]. In a study about immigration to Canada, Caidi [6] applies this concept to immigrants to study how they apply their information needs to information sources [6].

In this exploratory research, information practices of French-speaking immigrants to Israel are studied with three goals in mind: a) mapping information sources used before and after immigration, b) understanding their information needs, and c) analyzing the correlation between information sources and information needs.

2 Related Work

2.1 Immigration and Information Practices

Alyiah is the Hebrew term for Jewish immigration to Israel. This unique case of immigration from all Jewish communities worldwide is mainly based on religious and traditional motives [7]. Since 1950 with the Law of Return, the Israeli policy grants immediate citizenship to any Jewish immigrant. After their arrival, new immigrants start their integration under two models: Direct absorption: where the new immigrants learn Hebrew and help to find housing and employment; or Community absorption, where the new immigrants are oriented to a community center delivering their immediate needs until their full integration [8].

Jewish immigrants to Israel are a particular group who decided to voluntarily leave their country to a place they consider their homeland, sometimes at the price of a financial and social loss [9]. However, even if immigration is not forced, it is still a significant disruption in an immigrant’s life, a highly exhausting experience usually related to emotional disturbance [10]. This state of mind is usually caused by the lack of basic needs, like work, social life, and housing [10] and the lack of information about these needs.

Julien [11] affirms that information practice was a common term for information search behavior and information literacy, especially among researchers in the social construction stream of social sciences (social constructionism). In Talja & Lloyd’s view [12], knowledge and information in information practice are place-based, meaning that the place where the practice occurs directly impacts its performance.

The study of the relationship between immigration and information practices started only twenty years ago with studies related to different countries and types of immigrants [9, 13, 14]. The literature usually shows how information practices are impacted by immigration [15] and that the participants in most studies are usually extreme cases, like refugees and other forced migration. Research about migration between developed countries is limited [15].
In a study focusing on immigration to Canada, Caidi [6] investigated information practices of immigrants in their everyday lives, drawing on the notion of everyday life information seeking (or ELIS) developed by Savolainen [5]. Caidi [6] developed four concepts related to immigrant’s needs:

1. Integration: the acculturation and assimilation process of the newcomer.
2. Inclusion: making informed decisions about economic, social, and political issues.
3. Transnationalism: keeping ties with the home country through social networks, languages, and customs.
4. Settlement: adjustment to practical issues in the new country, like housing, banking, schools, healthcare, and language skills.

Caidi [6] uses the concept of information practices, which includes needs, use, and sharing of information [5] to explain how immigrants to Canada use their information sources to cope with information needs.

2.2 Problem Statement

The current research explores the information practices of Jewish immigrants to Israel. Information practices are analyzed by mapping their information needs and the information sources used before and after immigration to cope with these needs.

The shift in the information sources used by immigrants, before and after immigration, and their relationship to information needs are barely studied. These changes may have policy implications, which could impact the way information is presented to new immigrants in Israel. Therefore, this study will focus on the following research questions:

- RQ1: Was there a significant difference in the information sources used by French immigrants to Israel between and after their immigration?
- RQ2: To what extent are information sources related to the French immigrants’ information needs to Israel after their immigration?

3 Methodology

3.1 Data Collection

This survey was conducted on Facebook and LinkedIn groups related to French immigrants to Israel. An invitation was sent to 13 public Facebook and LinkedIn groups to participate in the study, and 71 immigrants who arrived in Israel in the last five years answered this survey (in French). The questionnaire was limited to five years before the immigration, as the participants had to rely on memory to answer questions about their pre-immigration information behavior. This limit also allowed the comparison between the social media platforms studied in this paper, which all existed in the last five years.
3.2 Data Analysis

Participants
Of the 71 participants, 60 (84.5%) were born in France, and 11 (16.5%) from other French-speaking countries. Fifty-seven women (80.3%) and 14 men (19.7%) answered the questionnaire. Twenty-six participants earned a professional diploma (36.6%) and 25 (35.2%) Master or Ph.D. degrees. Twenty immigrants (28.2%) arrived in Israel with a High school or college level. Most of them were married (80.2%) and with at least one child (76.1%). Their average age was 42.7 years (SD = 12.81).

At present, 12.7% of the immigrants are looking for a job after their immigration, 63.4% are employed, 7% kept their job abroad, and 16.9% are students or retired. 9.9% (n = 7) do not speak Hebrew at all, 28.2% (n = 20) report a beginner level in Hebrew, and 44 immigrants (61.9%) report a language level ranging from elementary to professional.

Measures
Three questionnaires were used to gather data: information sources, information needs, and demographics. The full survey in French is given in Appendix https://forms.gle/8WKZQtmMYXo1T9nZ7. Descriptions of the questionnaires are as follows:

- The **information sources** questionnaire was employed to measure different digital or physical information sources. It consisted of twelve statements rated on a four-point Lickert scale indicating how frequently they used this source (1 = very rarely; 4 = very frequently). The scale also included a “never” answer. This tool, specifically developed for this research, did not include a neutral answer and revealed a high level of internal consistency, as shown by a Cronbach’s α of 0.92 before immigration and 0.82 for answers after immigration.

- The **information needs** questionnaire was based on previous works [9] on north-American immigrants. Participants were asked to indicate topics for which they seek information and the frequency of information search. The questionnaire consisted of ten topics, rated on a five-point forced Lickert scale (1 = very rarely; 4 = very frequently). A Cronbach alpha was calculated and showed that the five-item scale’s internal consistency of the five-item scale was at a high level (Cronbach’s α = .85).

- The **demographics** section included the following variables: age, birthplace, education level, family situation (married or not), Hebrew language level, and employment.

4 Results

4.1 Information Sources
In the first questionnaire, participants indicated the level of use of twelve information sources before and after their immigration. A paired-samples t-test was used to determine whether the mean difference between paired observations was statistically significant before and after their immigration.

The test aimed to investigate whether each information source’s level changed after the immigration, as detailed in RQ1. The results for each information source, including means, standard deviations, and effect, are shown in Table 1.
Table 1. Means changes of information sources used before and after immigration

| Information sources          | Before immigration | After immigration | t       | Cohen’s d |
|------------------------------|--------------------|-------------------|---------|-----------|
|                              | Mean   | SD    | Mean   | SD    |         |         |
| Social networks              | 2.54   | 0.98  | 3.07   | 0.94  | -4.28***| -0.65  |
| Friends                      | 2.22   | 1.03  | 2.64   | 1.08  | -3.44** | -0.45  |
| Google                       | 2.32   | 1.07  | 2.70   | 1.09  | -2.33** | -0.32  |
| Blogs                        | 1.76   | 0.97  | 1.96   | 0.95  | -2.17** | -0.63  |
| Immigration agency           | 2.14   | 1.04  | 1.68   | 0.84  | 2.94**  | 0.57   |
| Books                        | 1.84   | 0.96  | 1.74   | 0.89  | 1.00    | 0.19   |
| Family                       | 2.31   | 1.04  | 2.39   | 0.99  | -0.84   | -0.11  |
| Professional networks        | 1.65   | 1.06  | 1.94   | 0.93  | -1.40   | -0.44  |
| WhatsApp                     | 2.50   | 1.07  | 2.92   | 0.95  | -1.49   | -0.13  |
| Synagogues                   | 1.69   | 0.78  | 2.12   | 1.01  | -1.62   | -0.33  |
| YouTube                      | 1.84   | 1.07  | 2.18   | 1.22  | -1.73   | -0.50  |
| Voluntary organizations      | 1.95   | 0.84  | 2.24   | 0.87  | -1.76   | -0.39  |

Participants used information sources at a higher level after immigration (M = 2.35, SD = 0.72) instead of information sources used before immigration (M = 2.11, SD = 0.65). The level of information sources used show a significant mean increase of 11.4% (t(69) = −3.13, p = .003, d = −0.37).

Five information sources showed significant changes after immigration and are described here as digital and human information sources. Seven information sources showed no significant changes after immigration.

**Digital information Sources.** Social networks, like Facebook, became a critical source of information after immigration (M = 3.07, SD = 0.94) while they were less used before immigration (M = 2.54, SD = 0.98). Using social networks show a significant mean increase of 20%, (t(42) = −4.28, p < .001, d = −0.65).

Using the Google search engine to find information in Israel increased after immigration by 17%, from (M = 2.32, SD = 1.07) before immigration to (M = 2.70, SD = 1.09) after moving to Israel. The change was significant (t(49) = −2.33, p = .024, d = −0.32).

Blogs featured a modest increase from immigration (M = 1.96, SD = 0.97) compared to their use before immigration (M = 1.76, SD = 0.97). The change of 11% was significant (t(11) = −2.17, p = .05, d = −0.63).

**Human Information Sources.** Friends are a well-known important information source. Using these sources increased after immigration. Friends as information source
increased by 19% ($t(57) = -3.44, p = .001, d = -0.45$). Interestingly, a significant Pearson moderate negative correlation was found between friends as information source and age ($r(66) = -.28^*\)).

The immigration agency (known as the Jewish Agency) is an organization with the mission to reinforce the bonds between Jews and Israel and plays a significant role in the immigration process\(^1\). Participants indicated that the use of the Jewish Agency personnel as an information source decreased by 21% after the immigration ($t(26) = 2.94, p = .007, d = 0.57\). This finding may be explained by this specific government agency’s orientation to help people before their immigration and leave their absorption process to other government agencies [9].

**Other Information Sources.** Seven information sources showed low levels of use and no significant change before and after immigration: YouTube, WhatsApp, and professional networks like LinkedIn, synagogues, family, voluntary organizations, and books.

### 4.2 Information Needs

The second questionnaire was related to information needs and their level of importance when searching for information. A principal component analysis (PCA) was run on this questionnaire on how frequently French-speaking immigrants researched these ten topics.

PCA revealed three components that had eigenvalues higher than one, which explained 28.8%, 52.6%, and 68.8% of the total variance.

The three components explained 68.8% of the total variance. The varimax orthogonal rotation was employed to aid interpretability. The data interpretation was consistent with the information needs the questionnaire was designed to measure with strong loadings of basic needs items, Short-term settlement needs, and Long-term settlement needs. Component loadings and communalities of the rotated solution are presented in Table 2.

The first construct, “Integration,” consisted of five topics related to the information researched right after immigration. Education and diploma recognition; employment; integration rights of the new immigrants (like tax exemption and allowance); learning Hebrew and recognizing foreign driver’s license by Israeli authorities. The scale had an adequate internal consistency level, as determined by a Cronbach’s alpha of 0.74.

The second construct, “Short-term settlement,” consisted of two questions related to the information researched when preparing children for school or when new immigrants look for healthcare. This scale had a high internal consistency level, as determined by a Cronbach’s alpha of 0.88.

The last construct, “Long-term settlement,” consisted of three questions related to the information researched when new immigrants deal with banking and legal issues, usually for a house mortgage or rent. This scale had an adequate internal consistency level, as determined by a Cronbach’s alpha of 0.76.

\(^1\) https://www.jewishagency.org/.
Table 2. Information needs of French-speaking immigrants

| Information needs       | Integration | Short term settlement | Long term settlement | Mean | SD  | N  |
|-------------------------|-------------|-----------------------|----------------------|------|-----|----|
| 1. Education recognition | .80         |                       | 2.32                 | .99  | 56  |
| 2. Employment           | .72         |                       | 2.67                 | 1.08 | 59  |
| 3. Immigrant’s rights   | .71         |                       | 2.79                 | .88  | 69  |
| 4. Learning Hebrew      | .65         |                       | 2.88                 | .96  | 59  |
| 5. Driving license      | .48         |                       | 2.09                 | .94  | 59  |
| 6. Healthcare           |             | .89                   | 2.61                 | .90  | 70  |
| 7. Schools              |             | .81                   | 2.62                 | .93  | 51  |
| 8. Legal issues         |             |                       | 2.72                 | 1.01 | 62  |
| 9. Banking              |             | .46                   | 2.80                 | .88  | 66  |
| 10. Housing             |             | .90                   | 2.22                 | 1.05 | 61  |

4.3 The Relation Between Information Needs and Information Sources

The second research question dealt with the correlation between information sources and the information needs of the French-speaking immigrants to Israel after their immigration. Pearson’s test was run to assess the relationship between information sources and information needs variables. Table 3 shows Pearson correlations for information sources and needs variables.

Table 3. Pearson correlation of information needs and sources variables

| Information sources     | Integration | Short-term settlement | Long-term settlement |
|-------------------------|-------------|-----------------------|----------------------|
| Social networks         | .57***      | .38**                 | .49***               |
| WhatsApp                | .27         | .41**                 | .33*                 |
| Google search engine    | .29         | .14                   | .30*                 |
| Family                  | .33*        | .27                   | .45**                |
| Friends                 | .32*        | .15                   | .26                  |

*Note.* ***p < .001, **p < .05, *p < .01. Only information sources with statistically significant correlations are reported.

Digital Information Sources. Social networks were found as the only information source highly correlated to all information needs. Statistically significant and positive correlations were found between Social networks and integration (r(34) = .57, p < .001), Short-term settlement r((44) = .39, p = .01), and Long-term settlement (r(43) = .49, p = .001) information needs.
The WhatsApp communication service is an information source correlated to Short-term settlement and Long-term settlement information needs. Statistically significant and positive correlations were found between WhatsApp and Short-term settlement ($r(42) = .41, p = .007$), and Long-term settlement information needs ($r(41) = .33, p = .038$).

Surprisingly, the Google search engine was moderately correlated to Long-term settlement information needs only ($r(45) = .30, p = .048$).

**Human Information Sources.** A statistically significant, moderate positive correlation was found between family as an information source with integration ($r(37) = .33, p = .046$) and Long-term settlement ($r(45) = .45, p = .002$) information needs. Friends as information source were found to be moderately correlated to integration information needs ($r(40) = .32, p = .045$).

No statistically significant correlation was found between other information sources and information needs variables.

5 Discussion and Preliminary Conclusions

This exploratory research dealt with information practices of French-speaking immigrants to Israel, aiming to map information sources used before and after immigration, understand their information needs, and analyze the correlation between information sources and information needs.

The first part of the results indicates a significant change in information sources after immigration, with a significant increase in digital and human information sources. On the other hand, the use of government agencies decreased after immigration.

The second part of the results shows three groups of information needs after immigration: information needs related to integration, short-term settlement, and long-term settlement. It should be noted that the immigrant settlement concept described by Caidi [6] split into short and long-term settlements.

The last part of the findings shows a significant correlation between information needs groups and digital and human information sources. Findings also show that some information sources are more adapted to specific information needs.

These findings may lead to two conclusions.

Information sources of immigrants changes after immigration and move to social networks. These findings need to be addressed by governmental agencies. New immigrants rely heavily on social networks to cope with their information needs rather than immigration agency information. This situation is challenging as information in social networks may be fake, and the level of language knowledge is low.

The second conclusion is that there may be a hierarchy of information needs based on the concepts described by Caidi [6] and information needs described by Shoham and Strauss [9], with information sources used to respond to information needs at different points of the immigration timeline. This mapping is critical for governmental agencies, as their mission is to help the new immigrant in his first years in Israel. The three groups of information needs reflect the new immigrant’s complex pathway in need of this help. No components related to the other concepts developed by Caidi [6] were found, especially inclusion and transnationalism, and this should be studied in further research.
The fact that information sources respond to information needs is not new and well discussed in the literature [15]. However, this study is one of the first to address information needs and sources correlation after immigration between two developed countries – France and Israel. This point is essential as economic immigration between underdeveloped and developed countries may lead to different results, mainly because of the internet and social network access gaps.

This study is limited by its sample size and the focus on French-speaking immigrants to Israel. A second limitation is that this survey was conducted during the Covid-19 crisis, which might imply confounding variables and the need for a second survey at the end of this crisis. Further research in this field will compare immigrants’ information practices by birthplace, language, motivations, and wellbeing.

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