

Immigrants' digital exclusion from welfare services

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Abstract

The amount of digital social and healthcare services has increased in Europe in the last decade, and especially the COVID-19 pandemic has affected the digitalization of these services. Previous literature has shown how people with an immigrant background are at risk of being excluded from digital welfare services.

The aim of this thesis was to find out what the causes of digital exclusion of immigrants in the welfare services in Europe are, what kind of effects this has on the immigrant clients, and also to give suggestions on how digital welfare services could be improved to provide immigrants with accessibility to the service. In this thesis, welfare services were referred to as both social and healthcare services, and at both public, private and third-sector levels.

The research questions were:

1. What are the causes of the digital exclusion of immigrants in digital welfare services?
2. What are the effects of the digital exclusion on immigrants using digital welfare services?
3. How can digital welfare services be improved to provide immigrants with accessibility to the services?

A systematic literature review was conducted to answer these research questions. The literature search was done in four different databases (Web of Science, Springer Link, Ebsco, and Tritonia Finna's Article search) and literature was also searched manually. In total 13 articles were chosen for the review. The analysis was carried out with a narrative synthesis since the chosen articles include both qualitative and quantitative data.

The results show how skills and knowledge, an individual's characteristics, motivation and attitudes, as well as access to ICT are the causes of the digital exclusion of immigrants in digital welfare services. The effects of digital exclusion on immigrants using digital welfare services include exclusion from the services, turning to outside help, decreased well-being, as well as time consumption and costs. The improvements for digital welfare services to provide immigrants with accessibility to the service include service design, digital support, providing multi-channel services, pre-planning the services, and motivating the users.

Language: English

Key Words: digitalization of the welfare services, digital social and healthcare services, digital exclusion, immigrants

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Tiivistelmä

Sähköisten sosiaali- ja terveyspalveluiden määrä on kasvanut Euroopassa viimeisen vuosikymmenen aikana. Erityisesti koronaviruspandemia (COVID-19) on vaikuttanut näiden palveluiden digitalisaatioon. Aikaisemmat tutkimukset ovat osoittaneet, kuinka maahanmuuttajataustaisilla henkilöillä on riski jäädä näiden sähköisten palveluiden ulkopuolelle.

Opinnäytetyön tavoite oli tutkia, mitkä ovat syyt maahanmuuttajien digitaaliselle kuilulle hyvinvointipalveluissa Euroopassa, mitä vaikutuksia palveluiden ulkopuolelle jäämisellä on maahanmuuttaja-asiakkaille, sekä antaa parannusehdotuksia sähköisille hyvinvointipalveluille, jotta ne olisivat saavutettavampia maahanmuuttaja-asiakkaille. Tässä opinnäytetyössä hyvinvointipalveluilla tarkoitetaan sosiaali- ja terveyspalveluita julkisella, yksityisellä ja kolmannella sektorilla.

Tutkimuskysymykset olivat:

1. Mitkä ovat syyt maahanmuuttajien kokemalle digitaaliselle kuilulle sähköisissä hyvinvointipalveluissa?
2. Mitä vaikutuksia sähköisten hyvinvointipalveluiden digitaalinen kuilu aiheuttaa maahanmuuttajille?
3. Miten sähköisiä hyvinvointipalveluita voidaan kehittää, jotta ne olisivat maahanmuuttajille saavutettavampia?

Tutkimuskysymyksiin vastattiin tekemällä systemaattinen kirjallisuuskatsaus. Aineisto kerättiin neljästä eri tietokannasta (Web of Science, Springer Link, Ebsco, and Tritonia Finnan artikkelihaku) ja aineistoa etsittiin myös manuaalisesti. Yhteensä 13 artikkelia valittiin aineistoon. Aineisto sisälsi sekä laadullista että määrällistä tutkimusta, joten aineisto analysoitiin narratiivisella synteisillä.

Tutkimustulokset näyttävät, kuinka taidot ja tiedot, yksilön ominaisuudet, motivaatio ja asenteet sekä tietotekniikan saatavuus ovat syitä maahanmuuttajien digitaaliseen kuiluun sähköisissä hyvinvointipalveluissa. Digitaalinen kuilu voi johtaa palveluista syrjäytymiseen, ulkopuolisen avun käyttämiseen, hyvinvoinnin vähenemiseen, sekä aiheuttaa kustannuksia. Palveluita voidaan kehittää saavutettavammaksi palveluiden etukäteissunnittelulla, tarjoamalla monikanavaisia palveluita ja digitaalista tukea, palvelumuotoilulla, sekä käyttäjien motivoinnilla.

Kieli: Englanti

Avainsanat: hyvinvointipalveluiden digitalisaatio, sähköiset sosiaali- ja terveyspalvelut, digitaalinen kuilu, maahanmuuttajat

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1 Introduction

The digitalization of social and health services is a phenomenon that affects almost each of us, either as a professional or as a client of the services. Every EU country has made strategies that guide the digitalization of e-government and public services (Vainio, Viinamäki & Pitkänen, 2017, p. 3). In a welfare state like Finland, digital services are offered by the public, private, and third sectors as social and health services, services for applying for social security benefits, and working life services (Virtanen et al., 2022, p. 1). The quantity of citizens' electronic services in Finland has grown and developed significantly since the beginning of the 2010s and the COVID-19 pandemic has spurred extraordinary growth in social and healthcare electronic transactions in Finland (Kyytsönen, Aalto & Vehko, 2021, p. 15).

In 2020–2021, up to half of the Finnish population had used electronic social and healthcare services in the past year (Kyytsönen et al., 2021, p. 55). Nevertheless, the use of electronic services is hindered by numerous obstacles, and more than half of Finnish citizens face various challenges in accessing and utilizing digital services (Saikkonen, Karvonen & Kestilä, 2019, p. 335). According to research, not all citizens are able to use these services equally. People in vulnerable positions, such as some of the elderly, people undergoing mental health rehabilitation, immigrants, people who need a lot of services, marginalized young people, and the long-term unemployed are at risk of being excluded from these services. (Virtanen et al., 2022, p. 1.)

Many immigrants can encounter challenges in using digital services and they might need additional digital support (Ministry of Finance, 2019, p. 32). Social policy needs to ensure that if people with an immigrant background face digital exclusion, it does not lead to a wider exclusion from health and social welfare services and the wider society. Service providers need to identify people who are at risk of digital exclusion and secure additional non-digital pathways or socially sustainable support for using digital services. (Kouvonen et al., 2022, p. 10.) There has been extensive research about immigrant clients being at risk of being excluded from digital services. That being said, there has been less research on this subject concerning digital social and healthcare services in a European context.

Since the digitalization of health and social services is a relatively new concept and it has especially grown after the COVID-19 pandemic, I think there is a need to explore this issue further. This thesis will study immigrants' digital inequalities in the welfare services in Europe, with a focus on the Finnish perspective. With welfare services, I refer to both social and healthcare services at both public, private, and third-sector levels. The thesis will be conducted as a systematic literature review of peer-reviewed scientific articles.

The idea for this thesis rose from personal work experience. With a Bachelor's Degree in Social Services, I have worked in different settings of social services relating to immigration. My current occupation is working in the Social Insurance Institution as a benefit handler specialist who specializes in international affairs. In practice, this means that the majority of my clients have an immigrant background. Social security has been increasingly digitalized in recent years, and the studies show that those clients who are not fully functional and are not capable of electronic transactions are at risk of being left behind in this change, which can lead to underutilization of the benefits and an accumulation of problems (Blomgren & Saikkonen, 2018, pp. 2–6). I also see in my everyday work how the digitalization of services and the reduction of face-to-face services can discriminate between different client groups.

Helsper (2021, p. 7) argues that the inequalities in societies are on the increase, and to understand why inequalities remain, we need to analyze the interplay between traditional and digital inequalities. Digital exclusion and social exclusion in particular affect each other, and in order to understand digital inequality, the relationship between them must also be explored. Robinson et al. (2015, p. 577) discusses how studying digital inequality is crucial to comprehending how current inequalities lead to unequal access, usage, and benefits from new digital welfare systems. This raises several critical questions, including how to create and execute digital systems that can help reduce health disparities and promote social equity.

2 Aims, objectives and research questions

The aim of this study is to investigate the causes of the digital exclusion of immigrants in welfare services, explore the effects of this exclusion on immigrant clients, and provide recommendations on how digital welfare services can be improved to enhance

accessibility for immigrant clients. Welfare services in this context refer to healthcare and social services at public, private, and third-sector levels.

The objective of this thesis is to critically analyze the ongoing discussions in the literature on this topic in Europe. While this phenomenon is global, this research will focus on European discussions to minimize the impact of regional differences on the findings.

The research questions for this study are as follows:

1. What are the causes of the digital exclusion of immigrants in digital welfare services?
2. What are the effects of the digital exclusion on immigrants using digital welfare services?
3. How can digital welfare services be improved to provide immigrants with accessibility to the services?

A systematic literature review is conducted for finding out how previous research can enrich the understanding of immigrants' digital exclusion from welfare service. The analysis will be carried out with a narrative synthesis.

3 Background

This thesis investigates the digital exclusion of immigrants from social and healthcare services in Europe. The theoretical foundation of the study is based on academic and other publications related to digital services, particularly in the fields of health and social services. The thesis focuses on the exclusion of immigrants from accessing digital health and social services effectively. The term "social exclusion" is crucial in constructing the framework for the study. Subsequent chapters will explore topics such as immigration in Europe, the digitalization of welfare services, legislation that defines and governs digital services, and examine immigrants as clients in digital welfare services. Finally, the link between the digital divide and social exclusion will be discussed.

3.1 Immigrant population and immigration in Europe

International Organization of Migration, later IOM, (2019, p. 103) defines the term “immigrant” (from the perspective of the country of arrival) as a person who moves to a country other than their nationality or usual residence, making the destination country their new usual residence. According to IOM (2019, pp. 132–133), “migrant” is an umbrella term that has not been defined under international law. A migrant is a person who moves from their place of residence, whether within a country or across international borders, temporarily or permanently and for many possible reasons. This umbrella term includes various kinds of migrants, for example asylum seekers, displaced persons, documented and undocumented migrants, environmental migrants, expatriates, internal migrants, international students, seasonal migrant workers, separated children, short-term migrants, smuggled migrants, victims of trafficking and unaccompanied children.

After World War II, Europe underwent a transformation from an emigration- to an immigration region, and this shift has affected every aspect of social, political, and economic life in the countries that receive migrants, as well as Europe as a whole. Immigration has impacted Europe's demography, labor market, welfare, politics, and social and ethnic relations. The main factors that have influenced Europe with regards to immigration are increased international mobility and a change in the migration balance from negative to positive, meaning that Europe has received more migrants than those who migrated from Europe. The transition to receiving migrants did not occur at the same time in all European countries. (Kaczmarczyk, Lesińska & Okólski, 2015, pp. 25–26.)

Europe underwent changes during 2015 and 2016 when the number of asylum seekers increased notably, with over 2.5 million asylum applications received by Europe. Even though the majority of refugees stayed in countries of the Global South, the increased number of asylum seekers in Europe sparked tension on the continent. These events significantly altered how territories, sovereignty, and individual rights were perceived. Despite the large number of people affected, this represented a significant departure from previous patterns or ways of understanding these concepts, and these discussions are still ongoing. (Piguet, 2020, pp. 1577–1578.)

On January 1st, 2021, there were 23.7 million people who were citizens of non-EU countries residing in EU Member States, which accounted for 5.3% of the EU population. Additionally, there were 13.7 million people living in an EU Member State with citizenship of another EU Member State. (Eurostat, 2023.) Immigrants come from various parts of the world to settle in Europe and, also, to move between European countries. The countries of origin of immigrants vary depending on the European country, for example, in Finland, the largest foreign national groups were from Estonia, Russia, Iraq, China, India, Thailand, and Sweden in 2021 (Statistics Finland, n.d.).

Many studies emphasize that the immigrant population is heterogeneous. While some studies have shown that certain immigrant groups may have health differences when compared to the general population, other studies have found that when all immigrants with diverse backgrounds are examined as a whole, these differences disappear. (Rask, 2017, p. 256). Rask argues that it is important to recognize that moving to a new country is just one aspect of a person's identity and experience. Some people who have moved to a new country may not consider themselves immigrants, as they may not have faced the same challenges or barriers as others who identify as immigrants. Therefore, rather than seeing immigration status as the defining characteristic of someone who has moved to a new country, it's more accurate and respectful to view it as just one part of their overall identity. One option that increases inclusiveness is to refer to someone who has moved to the country as a person with a foreign background. This acknowledges the fact that the person has moved to a new country but also allows for self-definition and the option of becoming, for example, Finnish. (Rask, 2017, pp. 256–257.) That being said, for clarity, this thesis will refer to people with a foreign background as immigrants.

This thesis examines digital exclusion of immigrants, specifically first- and second-generation migrants, who are individuals that have moved to a country different from their country of origin or habitual residence, or whose parents have. As this is a literature review, the definition of immigration can vary depending on the literature used. The literature that is going to be utilized studies the subject of migration in a European context, which is the common thread throughout the literature.

3.2 Digitalization of welfare services

The concept of electronic services covers different types of services, where transactions can be done independently, with a professional, or something in between. In addition to a computer, phone or tablet, electronic services can also be other technological solutions, such as the use of activity bracelets. Electronic contact methods can be, for example, e-mail, chat and video connection. (Vehko et al., 2022, p. 252.)

Many governments are advocating their administrations to offer public services entirely through digital channels to decrease costs, which forces service users to learn how to use digital services. In a European context for example Denmark and the Netherlands are implementing strategies for service delivery that forces users to access services through digital channels. (Tangi, Benedetti, Gastaldi, Noci & Russo, 2021, p. 1.) Public services are in transition all over Europe, and electronic services and digitalization, in particular, have a key role when European states strive to meet the needs of change. Every EU country has made strategies that guide the digitalization of e-government and public services. However, the strategies have been drawn up with an administrative focus, with the aim of developing current services, processes and structures and adapting them to electronic and digital service environments. The service users do not appear in the strategy documents as the starting point of the processes. (Vainio et al., 2017, p. 3.)

Also, Finland had the goal to offer citizens accessible and high-quality digital services as a primary form of service by the year 2022 (Valtiovarainministeriö, n.d.). Although the policy has not been formulated particularly from a social and healthcare point of view, it can be considered a goal in the welfare settings as well. (Kyytsönen et al., 2021, p. 15.) The amount of citizens' electronic services in Finland has grown and developed significantly since the beginning of the 2010s. The COVID-19 pandemic spurred an extraordinary growth in electronic transactions within the Finnish social and healthcare system. In 2020, remote transactions in social- and health services increased by eight percentage points from the previous year, and remote transactions accounted for almost a third of all transactions. This is due to restrictions caused by the pandemic, as well as the fact that service providers added electronic transaction possibilities, and that organizations built completely new remote communication channels and services during the pandemic. It is likely that the important role of electronic services in the social and

health sector will continue even after the pandemic. (Kyytsönen et al., 2021, p. 15; Vehko et al., 2022, p. 253.)

There is a great deal of electronic social and healthcare services for various needs in Finland, including for example public sector services like OmaKanta, Omaolo, Terveyskylä, OmaKela and Maisa, as well as private sector services like OmaMehiläinen, Oma Terveys (Terveystalo) and third-sector services like Mieli Ry's Sekasin chat service. In a recent study done in 2020–2021, up to half of the Finnish population had used electronic social and healthcare services in the past year. (Kyytsönen et al., 2021, pp. 20–23 & 53–55.) Another study found out that in 2017, two out of three Finns had used at least some social and healthcare online service (Saikkonen et al., 2019, p. 334). Nonetheless, digital environments appear to have become an essential part of modern social and healthcare services (Kyytsönen et al., 2021, pp. 20–23 & 53–55).

In Finland, the provision of digital social services has not developed as quickly as digital health services. When digital social services are developed, the accessibility of the services should be secured, since many social services clients find it difficult to use electronic services. (Hyppönen & Ilmarinen, 2019, p. 288.) Social services have special features that need to be addressed when developing digital services, and these features can make the process challenging. These features include the large differences in the size of both public and private organizations, the large number of small companies in the private sector, as well as the versatility of the service selection and in the amount of resources required for the development of information management. (Kuusisto-Niemi, Ryhänen & Hyppönen, 2018, p. 96.)

Digital well-being services are justified, for example, by the fact that they have the potential to reduce the lack of accessibility of face-to-face services (Blix & Jeansson, 2020, p. 27). In the best case-scenario, digital social and health services can promote the health and well-being of the population, secure equal services for everyone and implement them cost-effectively and effectively (Virtanen et al., 2022, p. 2). Digital services can also save time for both clients, patients and the service providers, they reduce risk of spreading infections and increase working time flexibility. They also shorten queues and waiting times, as digital transactions reduce physical transactions. Digital solutions have an opportunity to provide more care at home or remotely thus reducing costs of physical

care, and it offers an opportunity to improve access regardless of location thus offering more equal services to sparsely populated areas as well. (Blix & Jeansson, 2020, pp. 27–28.) Digital welfare services also have the possibility to improve quality of life (Laya & Markendahl, 2020, p. 127). They also support people in managing their own lives, service needs assessment and timely application for services. The goal is that by using digital services, citizens will be able to participate in the care process and strengthen their own role in self-care and remote care, regardless of time and place. (Hyppönen & Ilmarinen, 2019, p. 280.)

However, the existing problems in the current service system cannot be completely solved by digitalization. In fact, the digitalization of services can also bring new problems. (Saikkonen et al., 2019, p. 342.) Challenges experienced in current social and healthcare digital services can weaken commitment to the service or treatment and exclude some client groups from the services entirely. They can further strengthen digital and social exclusion and thus deepen the inequality of the population. (Virtanen et al., 2022, p. 2.)

According to research done in Sweden, digital health services are mostly used by metropolitan residents, even though the aspiration has been that digitization will especially benefit those living in sparsely populated areas. For example the elderly, people with chronic diseases and rural residents are yet to be found to use digital health services. Digital health services also have risks that must be taken into account. Digital forms of treatment can destabilize the public economy, because the regulation of healthcare can weaken. In addition, digital services can be a risk to healthcare as a whole, as telemedicine professionals can disrupt the continuity of care for those with multiple or complex needs. These issues are something that should be addressed in the future. (Blix & Jeansson, 2020, pp. 27–28.)

In social services, the negative effects of the digitalization of services have been seen, for example, when the process of applying for social security has increasingly moved online in Finland. The digitalization of social security has benefitted those who were able to adapt and knew how to use the services, and who had the necessary tools for electronic use. On the other hand, for those clients who are not fully functional and are not capable of electronic transactions, switching the benefit search online can lead to underutilization of benefits and an accumulation of problems. (Blomgren & Saikkonen, 2018, pp. 2–6.)

In Finnish healthcare, Valvira (National Supervisory Authority for Welfare and Health) instructs professionals to individually assess a client's suitability for digital services. However, there is no corresponding recommendation for the social services. This causes inconsistencies in directions to services, whereby not all eligible clients are directed to use digital services and, on the other hand, digital services can be offered to clients who have barriers to their use. The individual professionals have a demanding responsibility to assess what kind of situations digital services are best suited to. (Virtanen et al., 2022, p. 2.)

The Finnish DigiIN-project aims to achieve a more socially inclusive digital society. The DigiIN-project has found out that the welfare state has failed to implement digital services that would take into account the needs of the most vulnerable clients. The project claims that if the services are not developed to their potential, the goals of digitalization are not realized and, in fact, digitalization will strengthen the inequality of the population and increase the risk of marginalization. The project offers recommendations on how to make digital services more inclusive, providing ideas on what actions could be taken to achieve this goal. These suggestions include for example how service providers should provide real-time support and instructions for using the services, services should be developed to be more understandable, and also face-to-face services should be provided to those for whom digital services are not an option. (Virtanen et al., 2022, pp. 1–6.)

3.2.1 Legislation defining and guiding electronic services

There are various different European Union laws and directives and additionally Finland's own legislation that defines and controls how to organize digital services in Europe and Finland. Below are listed the most important ones that guide organizations in developing digital services on European and Finnish levels.

The Charter of Fundamental Rights of the European Union provides guidance for its member states' national laws. It brings together all individual rights, citizenship rights, and political, economic, and social rights belonging to EU citizens and residents. The fundamental rights ensure an individual's inviolable dignity and right to freedom. Additionally, the Charter guarantees various rights, such as personal data protection,

freedom of information, equality before the law, the prohibition of discrimination, and good administration. (Charter of Fundamental Rights of the European Union, 2012.)

The European Union's Universal Service Directive 2002/22/EC is a directive of the European Union that aims to ensure that every EU citizen has access to basic electronic communication services, regardless of their geographical location or personal circumstances. The USD has regulations about, for example, broadband internet access, accessible electronic communication services for people with disabilities and consumer protection. (Universal Service Directive, 2002.) The USD sets out minimum requirements for the provision of certain electronic communication services, which helps to promote digital inclusion.

The European Union also created a regulation 2015/2120 that takes into account the technical implementation of the websites and aims to ensure that all citizens have access to high-quality, affordable broadband services. It regulates, for example, neutrality, affordable roaming charges, access to high-speed networks, clear and transparent information to service users about the services and adequate measures for protecting personal data. (Regulation 2015/2120 of the European Parliament and of the Council, 2015.)

The European Union's regulation 2016/679 that is commonly known as the General Data Protection Regulation (GDPR) establishes the rules for the protection of personal data of EU citizens. The key provisions take into account territorial scope, consent for individuals' personal data process, data subject rights, accountability and governance, the need for data protection officers and the need for notification authorities and individuals of any data breaches. (Regulation 2016/679 of the European Parliament and of the Council, 2016.)

Besides the laws and regulations of the European Union, Finland has its own legislation that governs digital services. The Constitution of Finland (*Suomen Perustuslaki*) provides a framework for the protection of fundamental rights and freedoms in Finland, which are also valid in the context of digitalization. The constitution has articles that regulate the protection of privacy, including individuals' personal data, the freedom of expression, and

the freedom of information. The constitution also prohibits discrimination on various grounds including age, origin, gender, and language. (The Constitution of Finland, 1999.)

The Non-discrimination Act (*Yhdenvertaisuuslaki*) prohibits discrimination in Finland on various grounds, including gender, age, ethnic or national origin, language, religion, disability, sexual orientation, and gender identity. The act requires that the authority must take the necessary measures to promote equality. Considering the operating environment, resources and other circumstances, promotion measures must be effective, appropriate and proportionate. (Non-discrimination Act, 2014.) This act governs all services and should also be taken into account when producing digital social and health services, to ensure that digitalization does not exacerbate existing inequalities, and that everyone has equal opportunities to access and benefit from digital services.

The Administrative Procedure Act (*Hallintolaki*) provides a legal framework for how public authorities in Finland carry out their tasks and decision-making processes. It also ensures the fair and equal treatment of individuals engaging with the administration, and provides effective administrative services. The Act requires public authorities to provide free advice, guidance, and information to individuals about their administrative matters and direct them to the appropriate authority if necessary. (Administrative Procedure Act, 2003.)

The Act on Organising Healthcare and Social Welfare Services (*Laki sosiaali- ja terveydenhuollon järjestämisestä*) sets out the legal framework for the organization and provision of social and healthcare services in Finland. The law defines, among other things, the availability and accessibility of services in Finland. The services must be planned and implemented in terms of content, scope and quality as required by the clients' needs taking equality into account. In the services, it must be ensured that the client can be understood with the help of interpreter services if necessary. (Laki sosiaali- ja terveydenhuollon järjestämisestä, 2021.)

Finland also has legislation on the provision of digital services. The Digital Services Act (*Laki digitaalisten palvelujen tarjoamisesta*) promotes the use of electronic communication methods in order to improve the efficiency and speed of administrative procedures, as well as to enhance information security. It contains three main

requirements, which are: the accessibility requirements of the service and its contents, the accessibility assessment of the service and its contents, and that the accessibility status and possible shortcomings must be presented in the accessibility report. In addition, the service must include an electronic feedback channel for users to leave accessibility feedback. (Aluehallintovirasto, n.d.; Laki digitaalisten palvelujen tarjoamisesta, 2019).

The Ministry of Finance has also defined quality criteria for digital transaction services in 2018. The criteria outlines the obligation to offer accessible and high-quality digital services as a primary option for transactions. The purpose of the criteria is to help service providers to ensure that essential issues have been taken into account when developing services. The starting point is the client's perspective and service experience, and its sub-areas are the service's knowledge base, transaction situation, usability, electronic transaction support services, data security and protection, and client involvement. (Valtiovarainministeriö, 2018.)

3.2.2 Immigrants as clients in the digital welfare services

Immigrant and migrant people are a diverse group of people that include, for example, short-term and permanent immigrants, expatriates and asylum seekers or refugees. They have a vast range of backgrounds, socio-economic conditions, educational level and language proficiency. With that being said, the migrants who have to access, for example, integration services, usually also belong to at least one category that is less likely to have access to ICT, which can create supplemental hardships when it comes to social inclusion and integration into the wider community (Alam & Imran, 2015, pp. 347 & 357).

To be able to use digital services, one must have digital skills, service provision and a working internet connection. If even one of these aspects is left out of the equation, the use of the services cannot be realized. Using digital welfare services can be difficult for immigrants. Up to 98% of people aged 20–64 had bank credentials or a mobile certificate for electronic identification on the internet in the year 2018 in Finland. Immigrant people had them less often (84%), and an explaining factor can be that people with a foreign background also had access to the internet less often than the rest of the population. Especially those arriving to Finland at a high age did not possess strong identification

tools. (Kyytsönen et al., 2021, pp. 15 & 18–19.) The possibility of using strong identification was lacking more often by women with a foreign background, especially those who immigrated from Russia and the former Soviet Union, compared to men with a foreign background. (Vehko, Lilja, Parikka, Aalto & Kuusio, 2020, p. 191.)

According to The Ministry of Finance (2019), many immigrants can encounter challenges in using digital services and they might need additional digital support. The reasons for the challenges include for example fear of using digital services, weak ICT skills, poor Finnish or Swedish language skills, insufficient social networks and low awareness of the possibilities of electronic transactions. In Finland, the Ministry of Finance's (*Valtiovarainministeriö*) The Digi Arkeen Advisory Board suggests that key digital information and skills should be promoted at the beginning of the integration of the immigrants to be able to make immigrants active members of Finnish society. This digital support should be offered in the immigrant's own language and this could be organized with the help of non-governmental organizations that have expertise. Also, plain language can be beneficial in learning digital skills. (Valtiovarainministeriö, 2019, p. 32.)

Digital services that handle personal or other confidential information usually require strong identification, which in Finland includes online banking credentials, a mobile certificate obtained from telecom operators or an electronic identity card issued by the police. These requirements may limit some immigrants' access to digital services, since they might not be able to obtain any of the available identification methods. The reason for that can be for example that the bank requires Finnish language skills for online banking. The immigrant also might have difficulties in verifying their identity. (Valtiovarainministeriö, 2019, p. 35.)

The Social Insurance Institution of Finland (Kansaneläkelaitos, Kela) conducted a study that revealed that immigrants carry out their transactions in the offices of Kela 75% more often than the native population, when the factors affecting the transactions are standardized. In the TE offices and municipalities' social services, immigrants use the office channel only about a fifth more than the native population. In all these agencies, immigrants use electronic services about 50% less than the general population. The development of digital services in social security might result in polarization of transactions. The client base will be increasingly divided into groups that use services in

the office and online. While digital services offer clients more possibilities and take into account different capabilities and life situations, the polarization can also lead to unwanted consequences, such as stigmatization. The offices can become a place of business for only clients who need special support. (Tervola, 2015, pp. 18 & 20.)

3.3 The digital divide and social exclusion

Merisalo has defined (according to Hänninen et al., 2022, p. 17) digitalization as a social, cultural and economical process, where individuals, different social groups, communities and organizations reach, adopt and utilize digital technologies. Hänninen et al. (2022, p. 17) define digital participation as something involving the utilization of digital tools and services to engage in various activities. On the experiential level, participation refers to the feeling of belonging and the ability to take part in matters and activities that affect one's daily life and personal circle. In other words, participation is a critical component of feeling included, but it should not be confused with inclusion itself. Nonetheless, research literature that focuses on digital inclusion also acknowledges the other side of the concept of inclusion, which gives rise to new forms of challenges and restrictions that are commonly linked to digitalization. (Hänninen et al., 2022, pp. 17–18.) The opposite side of digital inclusion is often referred to, for example, the digital divide, digital exclusion, digital marginalization or the digital gap.

The concept of a digital divide has been used since the 1990s, which referred to the gap between those who do and those who do not have access to the latest forms of information technology. The increase of the term *digital divide* in the late 1990s and early 2000s awakened discussion about inequality in the information society in research and political agenda. (Van Dijk, 2006, pp. 221–222.)

Those who are excluded from the opportunities offered by technology are found to be at an increasing risk of being left behind. The technological development and the growing emphasis on delivering services primarily digitally, has formed an environment of technological compulsion. As more and more everyday services that were once performed through face-to-face interactions are moved online, those who do not use such channels may become further marginalized. This space between those who have access to ICT and those who do not is called the digital divide. Those on the wrong side of this gap often

also have an already disadvantaged position: they may be unemployed, have low-income, live in poor areas or have disabilities. This being said, there is an underlying inequality in the current level of access to information and communication technology, which favors more advantaged social groups and more affluent and interconnected localities. (Clayton & Macdonald, 2013, pp. 947–948.)

Although there are people who do not have access or the skills to use ICT, many people in vulnerable positions, in fact, do know how to use the internet and social media, but they have difficulties in accessing the digital services of the welfare society. This is connected to the fact that the use of digital services requires other skills in addition to general digital skills, such as an understanding of the service system and the official language. (Virtanen et al., 2022, p. 2.) Digital services have been found to further deepen the differences between different population groups (such as population groups according to age, education and income level) in access to information and participation (Hyppönen & Ilmarinen, 2019, p. 280; Robinson et al., 2015, p. 570). Those who have better digital skills and participate more fully in digitally mediated social life have an advantage over their digitally disadvantaged counterparts (Robinson et al., 2015, p. 570). Saikkonen et al. (2019, p. 342) argue that the usability of electronic services must be evaluated using the same non-discrimination criteria as other services.

Digital inequalities can reinforce and even exacerbate pre-existing social inequalities by carrying human capital differences over into online settings (Robinson et al., 2015, p. 570). The literature has begun to recognize the connection of digital divide to the concept of social exclusion. There is a lot of discussion in the academic world about how to get around social exclusion and establish a more inclusive society by using digital technology. (Alam & Imran, 2015, p. 349; Helsper, 2012, p. 403.) Social and digital exclusion are complex concepts that can be conceptualized and measured in countless ways (Helsper, 2012, p. 404).

Helsper (2021) points out that inequalities are usually described according to economic resources and socio-cultural well-being models. In addition, there can be inequality of opportunities and inequalities in outcomes approaches. Inequalities can be defined by systematic differences in economic, social, cultural, and well-being opportunities and resources between people from different backgrounds. Previously inequalities that were

not affecting employment or wealth opportunities were viewed as less relevant. In the 21st century there has also been an increased interest in studying inequalities in connection to well-being through more subjective aspects, like happiness. This is due to the fact that academic literature and European policy making has separated social exclusion from poverty, and literature on social exclusion challenges the view that inequality is only economic. (Helsper, 2021, pp. 8–10.) Depending on people's offline circumstances, exclusion from certain types of engagement can lead to more or less disadvantage in a person's everyday life. Digital inclusion should thus be recognized as embedded in a person's offline situations. This is the reason why digital exclusion should be viewed together with the concept of social inclusion. (Helsper 2012, pp. 404–405.)

Often different human characteristics such as gender, educational level, race and class are mostly studied as isolated groups of individuals that are assumed to be homogeneous. When examining, for example, gender differences in digital inequality, the study may be blind to the effects of race. Intersectionality is often largely absent from research on digital inequality, even though there is previous research evidence showing that disadvantaged people experience oppression in a variety of ways. The intersections of different characteristics and their effects on status in the digital society should be better taken into account in the literature. (Helsper, 2021, pp. 41–42.)

In the past, theories of digital exclusion were based on the digital divide or digital inequality, and those theories ignore the structural and societal factors that limit beneficial outcomes, and they might only focus on differences between people on access to desktop computers and the internet. Helsper uses the term "socio-digital inequalities" when discussing systematic differences in people's abilities and opportunities to use information and communication technologies usefully. (Helsper, 2021, pp. 28–29.)

Helsper has developed a model of digital inequalities (see Figure 1) that takes into account three levels of digital inequalities. Helsper criticizes economic, operational approaches to social-digital inequality. Instead, she emphasizes the outcomes of well-being in all areas, as well as bottom-up definitions of what is essential to fully participate in society. (Helsper, 2021, pp. 34–35.)

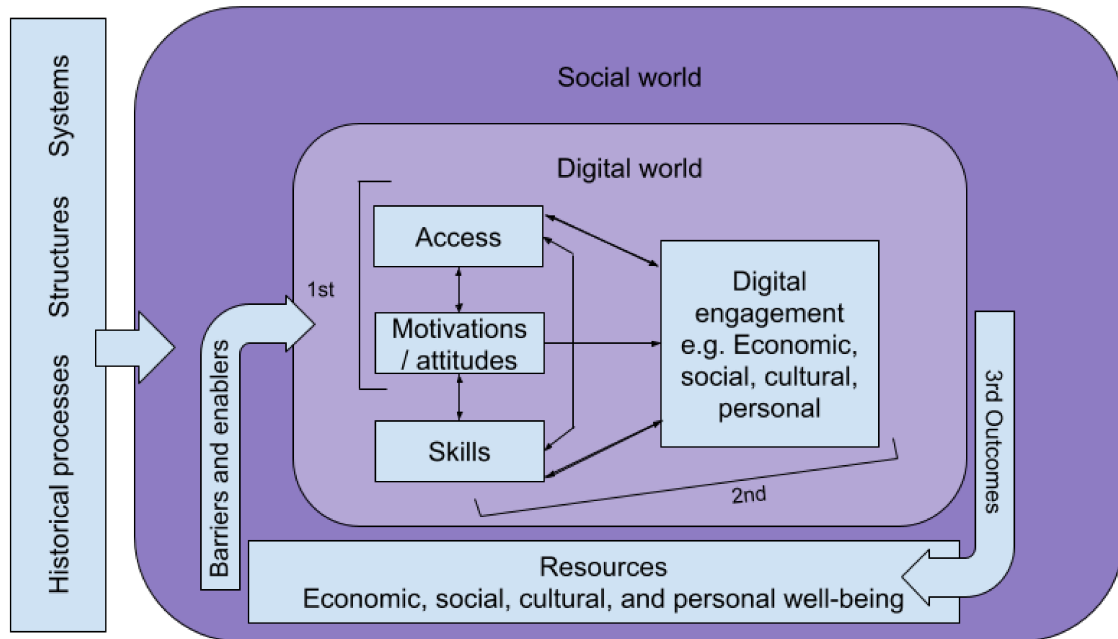


Figure 1. A model of digital inequalities (Helsper, 2021, p. 34).

The model consists of first-level (access), second-level (skills and use) and third-level (outcomes) digital divides, as shown in Figure 1. The first and second level factors belong to the digital world and the third level factors belong to the social world. These different levels are connected and influence each other, as shown in the figure. (Helsper, 2021, pp. 28–34.)

The first-level digital inclusion includes access to high-quality, ubiquity, and autonomous use of common ICTs. While high-quality and ubiquity are somewhat measurable dimensions, autonomy might not be. Autonomy is defined as access to ICT without interruptions or disturbances, and that if the device breaks or is updated, access to digital devices does not terminate. The first level also includes motivations and attitudes of the user towards ICT. (Helsper, 2021, pp. 29–30 & 34.) Attitudes include for example thoughts of usefulness and dangers of ICTs, computer anxiety, as well as opinions about the availability, appropriateness and regulation of content. Attitudes can stimulate or hinder certain types of engagement with ICTs. (Helsper, 2012, p. 412.)

However, we need to go deeper than access and attitudes to understand why certain people are less engaged with ICT. The second-level digital inclusion consists of skills. Digital skills include technical knowledge and extensive use of applications and platforms.

In addition to this, skills include digital literacy, which is the ability to create high-quality content, critically assess the reliability and accuracy of content, and understand the commercial, political and social interests of content creators. Digital literacy is a broad, multidimensional and dynamic concept. The digital world is constantly changing, so continuous and lifelong development of our skills is essential to stay equally included. The second-level also includes digital engagement. There are five engagement types: economic, educational, political/civic, social, and creative/leisure uses. It is difficult to separate digital engagement from motivations or attitudes. They modify our decisions about access, our trust in the use of technology and our thinking about what ICT is used for. (Helsper, 2021, pp. 30–31.)

The third-level divides are outcome inequalities, which include economic, social, cultural, and personal well-being resources. Differences in skills or use do not entirely explain inequalities in the use of ICTs in societies with near-universal internet access. Third-level digital inequalities mean that the outcomes of similar types of online activities vary across individuals. Although neoliberal approaches in policy and interventions highlight the importance of economic and formal participatory outcomes, there should be more evidence for systematic differences in types of engagement, for example, in online social networking and content creation. Outcomes such as self-actualisation, creative expression and personal well-being should be also taken into account when talking about outcome inequalities. In order to get the most out of digital engagement, you have to utilize both offline resources and online resources. Whenever individuals are conceptualized, they should be understood in the context of broader social and societal contexts that shape their use of ICTs and constitute socio-digital inequalities. (Helsper, 2021, p. 32–33.)

4 Data and methods

A literature review is a method and a research technique that examines the research that has been done (Salminen, 2011, p. 1). Literature reviews are usually divided into three different groups: descriptive literature review, systematic review and meta-analysis in both qualitative and quantitative types. A descriptive literature review (including the narrative and the integrative review) is one of the most commonly used types of literature review, which can be characterized as an overview without strict and precise rules. The

materials used are extensive and the selection of materials is not limited by methodological rules. Another basic type of literature review is a systematic literature review, which is a summary of the essential content of previous research on a given topic. A systematic literature review can be used to build the initial setting of the research, but the method is also an independent form of research. The third basic type of literature review is meta-analysis, which is divided into two basic trends, which are qualitative and quantitative meta-analysis. (Salminen, 2011, pp. 6–12.) Meta-analysis is a review that uses a specific statistical technique to synthesize the results of multiple studies into a single estimate (Petticrew & Roberts, 2006, p. 19).

A systematic literature review was chosen as the research method of the thesis since it is an independent form of research and it can summarize the essential content of previous research and thus can give answers to my research questions. A systematic literature review can be the only way of answering research questions where there is uncertainty about the answer since results of single studies taken in isolation can be misleading (Petticrew & Roberts, 2006, pp. 10–11). The model of conducting a systematic literature review is applied by Petticrew and Roberts (2016), who focus on the research method specifically from the social science's point of view.

4.1 Systematic literature review

A systematic literature review is a research method that has the aim to make sense of a wide range of information, and that can also define areas of uncertainty and show where new studies are needed. Petticrew and Roberts (2006) highlight how it is important to know about our own ignorance and to distinguish real and assumed knowledge, and how systematic literature reviews can help us with that. They argue that there are only a few single studies whose results are so generalizable that we should trust their results outright - most research should only be understood in context. An important part of that context consists of several results of other studies testing the same hypothesis in similar situations. Policymakers or the public might have difficulties with interpreting and using research results, when the research behind the headlines can be so far removed from real-life settings and it can be hard to know if the results are valid - and other studies about the same subject can have contradictory results. A solution for that can be to rely

on a literature review that studies multiple studies done on the subject, however literature reviews themselves can also be biased. (Petticrew & Roberts, 2006, pp. 2–3.)

Systematic reviews aim to identify, appraise and synthesize all relevant studies with the purpose of limiting systematic error (bias) to answer a particular question (or questions), and that is done by following closely to a set of scientific methods. The methods are arranged in advance and in detail. Unlike a traditional literature review, it is more of a scientific tool in contrast to only a discussion of the literature, and it can summarize, appraise and communicate scientific results from a large body of research. Both systematic and non-systematic reviews are important, and they serve different needs. Systematic reviews are one research method, and to a great extent they are much like surveys, though in this case a survey of the literature and not of people. They have the goal to give an answer to a specific question or test a specific hypothesis instead of summarizing everything about a particular issue. When a systematic review is done well, it should be seen as the most authoritative source of information. (Petticrew & Roberts, 2006, pp. 9–10.) Systematic literature reviews are used for example to prepare, maintain and disseminate health, social, educational and criminological interventions (Petticrew & Roberts, 2006, pp. 19–20).

Petticrew and Roberts (2006) list seven stages in carrying out a systematic review:

1. Clearly define the question that the review is setting out to answer, or the hypothesis that the review will test, in consultation with anticipated users
2. Determine the types of studies that need to be located in order to answer your question
3. Carry out a comprehensive literature search to locate those studies
4. Screen the results of that search (that is, sift through the retrieved studies, deciding which ones look as if they fully meet the inclusion criteria, and thus need more detailed examination, and which do not)
5. Critically appraise the included studies
6. Synthesize the studies, and assess heterogeneity among the study findings
7. Disseminate the findings of the review

(Petticrew & Roberts, 2006, p. 27.)

The first step is to frame the review question or the hypothesis that the review will test. The question should be meaningful and useful and should be discussed with users and other experts. The question should not be too vague or too broad. Systematic reviews can for example answer questions about effectiveness, risk factors and associations between characteristics of populations. (Petticrew & Roberts, 2006, pp. 28 & 45 & 52.)

The second step is to determine the types of studies to be located to answer the research question. The inclusion and exclusion criteria need to be chosen before starting to do the literature search. The inclusion and exclusion criteria have to express distinctly which study designs, populations, interventions and outcomes will be included and excluded in the review. Systematic review has the potential to deal with a variety of questions, study designs and methods. Depending on the research question it has to be determined, what sort of studies should be prioritized when doing the research. Systematic reviews can be done by mixed methods researching both qualitative and quantitative research. (Petticrew & Roberts, 2006, pp. 57–59 & 71 & 75–76.)

When doing a systematic literature review, the third and fourth step is to do the literature search. Usually the search is started in electronic databases, however such databases are not the only possible source of literature. In social sciences all of the relevant evidence might not be found in journals, but also in the “gray literature”, which cannot be found on electrical databases. Suitable literature can be also found by searches of book chapters and conference proceedings, abstracts of dissertations, contacting other researchers, hand-searching bibliographies and contacting experts. Also bibliographies of other literature reviews and of primary studies should also be searched by hand. The research question and the inclusion criteria will determine what kind of information is being sought. (Petticrew & Roberts, 2006, pp. 80–82.)

The aim of searching the literature is not to find everything there is to find, but to retrieve everything that is relevant and to leave irrelevant literature behind. The terms sensitivity and specificity help with finding relevant literature. A particularly sensitive search retrieves a high proportion of the relevant studies and a particularly specific search retrieves a low proportion of irrelevant studies. However, when doing a literature search in the area of social sciences, the search terms may often be less specific and in contrast

more exhaustive to be able to identify all the relevant studies. (Petticrew & Roberts, 2006, pp. 81–84.)

When doing a literature search, a minimum of two or more databases plus hand searching is required in systematic literature review, but the number of databases and other sources depends on the topic and resources. A literature search can be stopped when the search has been done to the most relevant databases and bibliographies and when new searches do not add to the score of included studies. It is important to register how and where literature was found, apply the search terms and filters used, when the sources were searched and which publication years were included. These steps add transparency to the review process. (Petticrew & Roberts, 2006, pp. 100–102.)

The fifth step is to critically examine the included studies. To increase the reliability of the review, critical appraisal is an essential step in any systematic review. Biases in individual studies should be looked into. The appraisal of the primary studies can be done at the same time when the literature is found. (Petticrew & Roberts, 2006, pp. 125 & 157.)

The sixth step is to synthesize the studies and assess heterogeneity among the study findings. In social science, systematic reviews are often not possible to permit a statistical summary, at least when there are qualitative studies included. In those situations, some form of narrative synthesis of the literature is indicated. A narrative synthesis should include tables to illustrate at least the description of the studies, their populations, methods and results, to add transparency. The tables should also show which data has been found from which studies. The most common approach in reviews starts with a narrative summary of the findings. First the description of the studies is organized into logical categories, then the findings within each of the categories are analyzed and finally the findings across all studies is synthesized. Usually in social science reviews there are many differences in the variables of the studies included, which will provide wide variations in review's findings. (Petticrew & Roberts, 2006, pp. 164–165 & 170 & 215.) The last step when finishing the literature review is to disseminate the review and make the research findings available to those who would benefit from hearing about the results (Petticrew & Roberts, 2006, p. 262).

4.2 Conducting the search for the thesis

My research questions *“What are the causes of the digital exclusion of immigrants in digital welfare services?”*, *“What are the effects of the digital exclusion on immigrants using digital welfare services?”* and *“How can digital welfare services be improved to provide immigrants with accessibility to the services?”* have been selected to answer the needs of immigrants in a world where welfare services are more and more digitalized.

To effectively address the research questions, peer-reviewed scientific articles or research notes are the most suitable sources to study. The literature should be published between 2010 and 2023. This time frame was selected because the amount of citizens' electronic services in social and healthcare in Finland has grown and developed significantly since the beginning of the 2010s (Kyytsönen et al., 2021, p. 20), and all relevant literature within the scope of the thesis that is able to answer the research questions after the digitalization of social and healthcare services has become more popular, needs to be identified. The searches in the databases were conducted during January, February, and March of 2023, and it is expected that more research in this area will probably be published during the year 2023. The articles that will be included should be written in either English or Finnish, as these are the languages that I can confidently understand and study. The searches will also be limited to articles that have full text available.

The phenomenon of immigrant clients' digital exclusion from welfare services is arguably global, but the search for research will be limited to Europe to reduce the impact of regional differences on the results. Welfare services, including various forms of social and healthcare services, differ worldwide, so it is reasonable to examine this issue from Europe's perspective. The digitalization of welfare services is changing relatively at the same pace across Europe, making the perspective of one continent more suitable for examining immigration.

Lastly, the research will focus on welfare services, including both social and healthcare services. It is important to study welfare services as a whole, to gain a broader understanding of the phenomenon being examined. This approach will lead to more relevant results for the research questions. Examining social and health services together is also justified from the point of view that in Finland, starting from the beginning of 2023, the responsibility for organizing social and healthcare and rescue operations was

transferred from municipalities and joint municipal authorities to wellbeing services counties, with a few exceptions. The goal of the reform is to integrate health and social services seamlessly together. (Finnish Government, 2022.) Since health and social services are working increasingly together in Finland, it is understandable to study digitalization and its effects in the whole welfare section. See the whole table of inclusion and exclusion criteria below in Table 1.

Inclusion criteria	Exclusion criteria
Peer-reviewed scientific article or research note	Not a peer-reviewed scientific article or research note
Publication years: 2010 - 2023	Published before 2010
Research article gives information to one or several of the research questions	Research article does not give information to any of the research questions
Language of the research article is English or Finnish	Language of the research article is other than English or Finnish
Full text of the research article is available	Full text of the research article is not available
Research studies European populations, professionals or organizations	Research does not study European population, professionals or organizations
Research focuses on welfare services (social and healthcare services)	Research does not focus on welfare services (social and healthcare services)

Table 1. Inclusion and exclusion criteria.

The search words selected limit the results to relevant literature on immigration and digital exclusion, using various synonyms for these terms in English and Finnish. Welfare services are not defined in the search words, as definitions of social and healthcare services vary greatly across Europe, making it nearly impossible to find all relevant literature in the welfare sector by restricting search words. Instead, I chose to manually search for relevant literature in the welfare sector which explored questions on immigration and digital exclusion. This decision impacted the number of results. Petticrew & Roberts (2006, pp. 81–84) argue that literature searches in social sciences often use less specific search terms and more exhaustive techniques to identify all relevant studies.

Thus, this search is a particularly sensitive search, yielding a high proportion of irrelevant results. The search words used in each database are listed in Table 2.

A systematic literature search needs to be done in two or more databases plus hand searching (Petticrew & Roberts, 2006, p. 100). The search was conducted in four different databases that are relevant for the welfare sector: Web of Science, Springer Link, Ebsco and Tritonia Finna's Article search. The first search was in the Web of Science, which gave the largest amount of relevant studies. 11 articles in total were chosen from the results from this database. The second database used was Springer Link, which gave the most results and from which four articles were relevant. Three of these four articles were already found from the Web of Science, so one article was chosen after removing duplicates. The third database used was Ebsco, and three individual databases were included in the same search, which were Academic Search Elite, CINAHL Complete and Medline. A total of three articles were relevant from the search from Ebsco databases, but these three articles were the same ones that were already found from the Web of Science. The search was also conducted in the Tritonia Novia-Finna article search, which is a database that Novia University of Applied Sciences uses. None of those database results were relevant. In addition, two articles were found by searching manually outside of databases. These articles were found by reading other studies and literature and checking their references.

According to Petticrew & Roberts (2006, p. 100) the literature search can be finished when the search has been done to the most relevant databases and when new searches do not give new literature to include in the research. After doing the searches in Web of Science and Springer Link, I noticed that other databases did not give new value for the thesis. This is why no more databases were added to the search. Below is a table that shows the searches done in different databases, including the used search words, boolean operators, limitations and expanders, date of the search and the results. The results include the total number of articles the databases showed after the search. After this, the table shows how many articles were chosen after reading the title, then after reading the abstract, and finally after reading the full text. The final column shows how many articles were chosen from which database, after removing the duplicates that were already chosen from another database. The total number of articles chosen for the analysis is 13.

Literature search from the databases								
Database	Search words	Refined by	Date of the search	Total results	Chosen after reading the title	Chosen after reading the abstract	Chosen after reading the full text	After removing duplicates
Web of Science	(immigra* OR migrant OR refugee* OR maahanmuut* OR pakolainen) AND ("digital marginalization" OR "digital divide" OR "digital exclusion" OR "exclusion from digital services" OR "digital gap" OR "digital inequalit*" OR "digisyrjäytyminen" OR "digitaalinen kuilu")	Publication years 2010-2023, Language: English (no Finnish results)	26.1.23	152	51	18	10	10
Springer Link	(immigra* OR migrant OR refugee* OR maahanmuut* OR pakolainen) AND ("digital marginalization" OR "digital divide" OR "digital exclusion" OR "exclusion from digital services" OR "digital gap" OR "digital inequalit*" OR digisyrjäytyminen OR "digitaalinen kuilu")	Content type: Article, Language: English (no Finnish results), Show documents published: 2010-2023	28.2.23	522	33	10	4	1
Ebsco (Academic Search Elite + CINAHL Complete + Medline)	(immigra* OR migrant OR refugee* OR maahanmuut* OR pakolainen) AND ("digital marginalization" OR "digital divide" OR "digital exclusion" OR "exclusion from digital services" OR "digital gap" OR "digital inequalit*" OR "digisyrjäytyminen" OR "digitaalinen kuilu")	Limiters: Full Text, Peer Reviewed, Publication years 2010-2023, Language: English (no Finnish results), Expanders: Apply related words, Apply equivalent subjects	28.2.23	15	7	3	3	0

Tritonia Novia-Finna (Article search)	(All fields:immigra* OR migrant OR refugee* OR "foreign born" OR maahanmuut* OR pakolainen AND All fields:"digital marginalization" OR "digital divide" OR "digital exclusion" OR "exclusion from digital services" OR "digital gap" OR "digital inequalit*" OR "digisyrjäytyminen" OR "digitaalinen kuilu")	Full text, Peer Reviewed, Publication years 2010→, Language English (no Finnish results)	1.3.23	194	12	5	0	0
Manual search							2	2
Articles chosen in total								13

Table 2. Literature search from the databases.

As only peer-reviewed published scientific articles were included, the articles were not critically examined. This is due to the fact that the ethical approval has already been done when the articles have been peer reviewed by the publisher.

4.3 Analyzing the data

The studies in social science systematic reviews are generally heterogeneous and also include qualitative studies, so a statistical summary of the studies is not possible to perform. In these cases, the analysis is carried out through a narrative synthesis. A narrative synthesis includes tables which describe the individual studies and also show which data has been found in which studies. (Petticrew & Roberts, 2006, pp. 164–165.) The articles that were included in the review are either qualitative studies or quantitative studies, and some of them are mixed methods including both qualitative and quantitative data. This is why a statistical summary of the studies is not possible to achieve, so a narrative synthesis is conducted instead.

The narrative synthesis usually starts with organizing the findings by, for example, forming a list of studies and their methods (Petticrew & Roberts, 2006, p. 171). The articles were

organized by forming a descriptive table of all the 13 chosen articles (see Appendix 1). The table includes the number of the study, name(s) of the author(s), year the study was published, title of the study, study location, database that the study was found from, description of the study, study population and study design. The studies are listed in the order that they were found in the databases: first the articles from Web of Science, then from Springer Link and lastly the articles which were found by manual search.

The synthesis was started by getting to know the studies by reading each of the articles several times to get a better understanding of the studies and their findings. After several readings, words, sentences and paragraphs that informed each of the three research questions were highlighted and copied into an Excel table. The findings were then divided into an Excel-table where each research question had its own section. After that, the findings were simplified into shorter words or sentences to be able to synthesize the results. The findings were organized into groups under each of the three research questions by finding similarities and differences in them. The research results were formed based on the research questions and the groups that were formed. See appendices 2, 3 and 4 to see the analysis process and the results for each research question.

Usually the summary of the results of the literature review when doing a narrative synthesis starts with a simple description of the amount of information that was found. A cross-study synthesis should produce an overall summary of the findings that recognizes the variations in the studies (for example in populations and settings), that might have an effect on the generalizability of the results. (Petticrew & Roberts, 2006, p. 179.) In the next paragraph, the results of each research question will be described, and information of the amount of information that was found will be included. The study populations and locations are also described to give the results reliability.

4.4 Ethical considerations

The Finnish National Board on Research Integrity (TENK) promotes good scientific practice in Finland. The guidelines define how researchers must acquire the necessary research permits and ensure that all parties involved in the research project or team agree on the specific responsibilities and obligations (Varantola et al., 2012, p. 30). Since I have worked

alone on my thesis without involvement of any specific organization or conducting interviews or surveys, these guidelines do not apply to my thesis. Therefore, there was no need for me to acquire research permits or agree on any responsibilities and obligations.

A systematic literature review is often done by a group of people. Also, potential users of the research can be used to formulate the research questions, comment on protocols, and help to carry out reviews (Petticrew & Roberts, 2006, pp. 29–30). This thesis' data retrieval, the selection process of the articles, and the analysis of the articles have been carried out by only one researcher, and I recognize that this also contributes to the validity of the study.

As instructed by Petticrew and Roberts (2006, pp. 125 & 157), it is important to critically examine the studies included in a literature review to increase its reliability. However, since I chose to include only peer-reviewed scientific articles in my review, I did not conduct a critical examination of the included studies. This is because the ethical approval process is already conducted during the peer-review process by the publisher. Nonetheless, I want to acknowledge that not critically examining the articles included in the review can affect its reliability.

5 Results

In total 13 articles were chosen for the literature review (see Appendix 1 for a descriptive table of the articles). The articles were released between 2019–2023. All of the articles were written in English. All of the articles studied European populations, professionals or organizations, with the exception of one article that studied migrant integration organizations in both Scotland and Canada. I chose to include the study that also had Canada as a study location, since the article had findings about Scotland that were important to my thesis. The study locations were Finland, Norway, the UK, Germany, Portugal, Sweden, Switzerland, Netherlands, France, Luxembourg, Belgium, Austria, Scotland (and Canada). Some of the articles had one study location and some of them studied several countries. Five of the articles had Finland as a study location, so Finland was the most represented among the studies. 8 of the articles were qualitative studies, 3 of the articles were quantitative studies and 2 of the articles used mixed methods with both qualitative and quantitative parts.

The articles had a wide range of study populations. 9 of the articles studied welfare service users, while 1 of the articles studied professionals who work in the welfare services and/or their organizations. 3 of the articles studied both service users and professionals or organizations. The study populations varied and not all of them focused only on immigrants. Some of the articles had a wider study population, but they nevertheless answered one or several of the research questions and included data also in relation to immigrants in digital welfare services. It varied how an immigrant was defined: some articles defined an immigrant by their language group, by country of origin or by immigration status. See Appendix 1 for a more precise documentation of the study populations.

The analysis of each research question is shown in Appendices 2, 3 and 4. In these appendices the first column includes the specific findings from the articles that give information to the research question. Each singular finding has a reference number that refers to the number of the article, from which the result was found from. The numbers of the articles can be found from Appendix 1. The second column in Appendices 2, 3 and 4 has synthesized results, where similar results are combined and the results are shown in a more clear and concise language, if possible. The third column connects similar results together as subgroups. This merging was done by looking for similarities and differences in the results and coming up with a title that connects them. Finally, the fourth column has the name of the group, which in most cases is the same as the subgroup. The groups that have a wide range of results can have different subgroups for clarity. The groups are arranged in order of importance so that the results that were mentioned the most in the articles are first. When conducting a narrative synthesis, the summary of the results typically begins by describing how much information was gathered from the studies that were reviewed (Petticrew & Roberts, 2006, p. 179), which is why I have included the amount of results in the literature to the results. In the next chapters, these research questions are answered one by one and also show the results in the forms of figures.

5.1 The causes of digital exclusion of immigrants in welfare services

The analysis and synthesis process resulted in four main groups that explain the causes of digital exclusion of immigrants in digital welfare services. In total 12 of the 13 articles gave

results that related to the first research question. The causes of digital exclusion of immigrants in digital welfare services are skills and knowledge, individual's characteristics, motivations and attitudes, as well as access to ICT. In addition, skills and knowledge are divided into three subgroups: digital skills, service knowledge and service specific literacy, and language skills. The groups formed in the analysis process are shown below in Figure 2. See Appendix 2 for further information about the analysis.

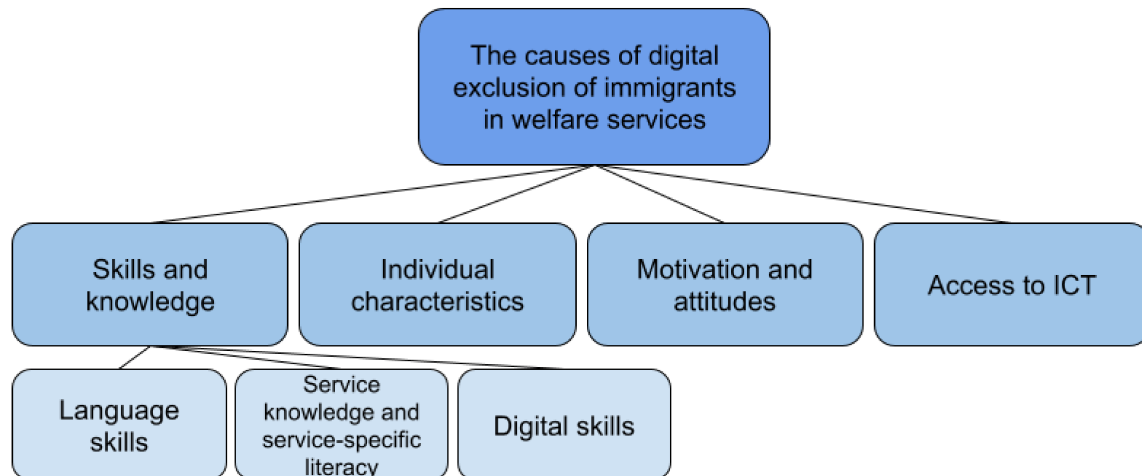


Figure 2. Results of the analysis: The causes of digital exclusion of immigrants in welfare services

5.1.1 Skills and knowledge

Skills and knowledge is the first group formed, and it consists of three subgroups: language skills, service knowledge and service specific literacy, as well as digital skills. Skills and knowledge included the most abundant amount of results related to this research question in the chosen articles. 9 of the 13 articles gave results that were related to skills and knowledge.

5.1.1.1 Language skills

The language skills and how they affect the digital divide of immigrants in the health and social services were mentioned in 8 of the 13 studies, thus being mentioned the most when discussing the causes of digital exclusion alongside with service knowledge and service specific literacy. The articles discussed how local language competency, first

language competency, illiteracy and lack of support in a variety of languages had an effect on the digital exclusion of immigrants.

Several studies conducted in Finland have revealed the challenges faced by migrants, especially those with limited Finnish language skills, in accessing digital welfare service. The study by Safarov (2021) found that migrant participants reported difficulties in understanding online forms in Finnish language. Buchert et al. (2022) reported that inadequate Finnish language skills were one of the main causes of older Russian-speaking migrants not using digital welfare services. Moreover, clients with adequate Finnish language skills also faced problems in handling social welfare benefit services digitally. Similarly, Kaihlanen et al. (2022) highlighted inadequate Finnish language skills as a major hindrance for Russian migrants in accessing digital health services. The language barriers made it difficult to even book an appointment with the healthcare services online. Even though Russian is the most widely spoken native language in Finnish after the official languages Finnish and Swedish, only a few of the webpages were translated to Russian. Finally, Safarov (2023) discovered that language skills were the most commonly cited barrier for access to digital public services in Finland. Additionally, the lack of support in languages other than Finnish and Swedish was identified as a further challenge for migrants trying to access digital and phone services.

A study by Samkange-Zeeb et al. (2020) also found that immigrants' local language competency was associated with significantly reduced odds of relying on the Internet for health information in any language compared to non-migrants. The researchers were expecting different results, but argued that getting internet-based information about local healthcare services and details about a diagnosis, treatment and medication usually requires some fluency in the local language and they cannot be reached through the immigrant clients' first language. Another explanation could be that the participants did not know about the availability of information on the Internet.

A Norwegian study reported how Pakistani immigrants who had high Urdu literacy were more likely to go online for relevant information seeking and communication via SNS in connection with type 2 diabetes self-care compared to those with low Urdu literacy. In addition, the Pakistani immigrants who were more proficient in the Norwegian language were more likely to use web- or mobile apps for self-assessment of health as a part of

type 2 diabetes self-care compared to the Pakistani immigrants who did not know Norwegian. The study also researched the association between English language knowledge and the use of digital health services, but it was found that English proficiency was not associated with eHealth use. (Tatara et al., 2019.) Also, a study in the UK reported how language barriers were frequently mentioned as an obstacle to accessing primary healthcare digitally and, in fact, the barriers had increased due to digitalisation. COVID-19 lockdowns had further limited the ability to get help with translating health information, appointment letters and messaging, since there was reduced access to friends who had previously translated information. (Knights et al., 2021.)

One limiting factor in accessing digital health and social services is illiteracy, which was mentioned in one of the studies. A study from Switzerland found that several immigrant women could not read, and that this affected their capacity to communicate and the access to services in general. The same study found that some participants did not understand French or a language shared with the healthcare professional, which was a barrier to use immediate messaging applications between postpartum home visits. (Perrenoud et al., 2022.)

5.1.1.2 Service knowledge and service-specific literacy

Service knowledge, service-specific literacy and how these affect the digital divide of immigrants in the health and social services, were mentioned in 8 of the 13 studies, thus being mentioned the most when discussing the causes of digital exclusion alongside with language skills. The subgroup service knowledge and service-specific literacy consists of insufficient knowledge about the service, structure and system, bureaucratic literacy, administrative literacy, and health literacy.

Many studies have highlighted that the complexity of services, coupled with insufficient knowledge about the service structure or system, is a significant barrier to the adoption of digital health and social services. Safarov (2021) found that the complicated nature of the public service system in Finland, coupled with insufficient knowledge, influenced the adoption of digital health and social services. Participants in the study reported that knowledge requirements created significant barriers to accessing the services. Buchert et

al. (2022) found that unfamiliarity with the social welfare system and eligibility criteria for social benefits were also crucial barriers in accessing digital social security services in Finland. The study reported that clients found searching for and finding adequate information on the internet challenging, partly because the information was constantly changing.

Similarly, a study on refugees by Bešić et al. (2021) found that the level of understanding of the Swedish system and context, and an individual's ability to make decisions related to their integration independently, affected how well the individual adapted to the digital solutions of labor market integration support. Perrenoud et al. (2022) found that some immigrant clients in Switzerland were unaware of the possibility of using instant messaging applications when consulting with health and social care professionals. Overall, these studies suggest that insufficient knowledge about the service structure, complex service design, and unfamiliarity with the system and context can create significant barriers to accessing digital health and social services, particularly for immigrant populations.

Service-specific literacy has been identified in the literature in Finland as a key contributing factor to the digital divide. One study found that administrative literacy was a major barrier to accessing digital public services. Safarov (2023) defines administrative literacy as a combination of literacies including bureaucratic literacy, which is the ability to understand bureaucratic vocabulary and communicate with authorities digitally or in person, as well as administrative literacy, which consists of structural knowledge of public organizations and welfare system navigation, which includes knowledge of social services and how to apply for them and, for example, which forms to fill to get social benefits. The study found that none of the immigrant participants in the research had learned to apply for benefits independently and almost all of them had several insufficient literacies at the same time. This highlights how the requirements to use digital social welfare services are excessive, and migrants need to have a strong administrative literacy to access social protection services. (Safarov, 2023.)

A similar study in the health services sector found that mastering specific administrative and medical vocabulary was necessary to be able to use digital services, and that both migrant and Finnish-born clients had difficulties with it (Kaihlainen et al., 2022).

Furthermore, a study by Sanjabge-Zeeb et al. (2020) revealed that low health literacy reduced reliance on internet-based health information in several European countries, although not significantly. This was also noticed by Knights et al. (2021), who discovered that health literacy among migrants affected their use of digital health services in the UK.

5.1.1.3 Digital skills

The effects of digital skills on the digital exclusion of immigrants in welfare services was mentioned in 5 of the 13 articles. The digital skills that were described in the literature and what affected the digital exclusion of the services were related to weak digital skills, lack of e-literacy and the lack of assistance for digital solutions inside the services.

Some studies examined the impact of weak digital skills on the digital divide among immigrants. A Norwegian study found that immigrants with digital skills were more likely to use health apps and track health information online, while those without such skills were less likely to do so (Tatara et al., 2022). Limited digital skills were identified as the most significant barrier to accessing digital services in a Finnish study, with professionals noting that their clients require assistance even with basic operations using mobile devices. Applying for social welfare benefits online was found to be particularly challenging and requires advanced skills that many immigrants lack. Moreover, lacking a specific digital skill can hinder even those who possess basic digital skills from completing online applications (Buchert et al., 2022). Finally, in another Finnish study, some participants reported that digital skills were critical for using digital public services (Safarov, 2023).

The studies also explored the impact of insufficient e-literacy skills on the digital divide. A study by Perrenoud, Chautems & Kaech (2022) revealed that some immigrant women in Switzerland lacked e-literacy skills, which hindered their ability to use instant messaging applications to communicate with health professionals. Similarly, a study by Bešić et al. (2021) reported that professionals working with refugees in Austria and Sweden had lower levels of digital literacy compared to native populations, which affected their ability to use digital services. Furthermore, Safarov (2023) highlighted how a lack of digital skills and e-literacy make it difficult for immigrants in Finland to use digital public services

without assistance, as these services often do not provide support for individuals who cannot use these services independently.

5.1.2 Individual characteristics

The second group mentioned in 6 out of the 13 articles is that of individual characteristics and how they affect the digital exclusion of immigrants in welfare services. These characteristics include attributes specific to a person such as their level of education, length of residence in the new country, immigrant status, income comfort, age, and health-related variables.

The level of education of migrants has an impact on their use of digital welfare services, according to the literature. Samkange-Zeeb et al. (2020) discovered that migrants with low levels of education were less likely to rely on online health information in several European countries. Similarly, Tatara, Hammer, Mirkovic, Kjollesdal & Andreassen (2019) showed that highly educated migrants in Norway were more likely to use health assessment apps and track their health information online. In addition, a study by Bešić et al. (2021) reported that refugees with lower education levels in Austria and Sweden faced more difficulties in using online job applications or training provided by support organizations.

The length of residence in the new country also impacted the use of digital welfare services. A study by Samkange-Zeeb et al. (2020) found that first-generation migrants rely less on digital health services compared to non-migrants and descendants of migrants in several European countries. It was also reported that European migrants use digital services more frequently than non-EU migrants and non-migrants. Another study by Tatara et al. (2019) conducted in Norway researched first-generation Pakistani immigrants in the Oslo area and found out that the years of residence in Norway was positively associated with communication and consulting about type 2 diabetes self-care by using ICT as well as the total number of eHealth activities. The longer immigrants live in Norway, the more they are exposed to eHealth possibilities and might use them.

Income comfort and socio-economic position were also found to influence the desire to use digital welfare services. A study conducted by Paccoud et al. (2021) found that income

comfort was a significant factor in determining migrants' desire to access personal health records online in several European countries. Migrants who perceived themselves to be in a difficult financial situation were less likely to wish to access personal health records online. The researchers argued that this highlights the disadvantages faced by migrants with a lower perceived income in accessing digital health services. The study suggests that more financially comfortable migrants can make long-term choices, such as using digital health records, to better manage their health. Furthermore, a study conducted by Buchert, Kemppainen, Olakivi, Wrede & Kouvonen (2022) reported a strong link between lower socio-economic position and the digital divide among Russian immigrants in Finland.

The impact of age on the digital divide among migrants was explored in the literature. Bešić et al. (2021) found that older migrants, especially those over 50, faced greater difficulties in accessing digital welfare services in Austria and Sweden. A study by Samkange-Zeeb et al. (2020) conducted in multiple European countries found that older migrants had reduced the odds of relying on Internet-based health information, with the exception of Sweden where age did not have the same impact. Finally, Buchert et al. (2022) discovered a strong connection between age and the non-use of digital service among Russian immigrants in Finland.

Health-related variables have been identified as causes of the digital divide among migrants. A study by Samkange-Zeeb et al. (2020) found that migrants with poor self-reported health in several European countries were less likely to rely on health information from the Internet than those with better health. Kouvonen et al. (2021) found similar results in Finland. They found that older migrants with poor self-rated health and depressive symptoms were less likely to use digital services, even though older migrants with poorer health and limited mobility could particularly benefit from the diverse use of digital information. In addition, Buchert et al. (2022) found that some Russian-speaking older adults in Finland seeking help to use digital welfare services had memory problems and deteriorating cognitive skills, making it impossible for them to use digital services independently. Participants in the study had difficulties learning new skills and retaining information. The professionals interviewed believed that individuals with cognitive decline cannot be expected to improve their Finnish language skills, understanding of the welfare benefit system, or digital skills. The cognitive decline contributed to the exclusion of digital

services, and as the population ages, the number of people who need help with digital services is likely to increase.

5.1.3 Motivation and attitudes

The third group relating to the first research question is motivations and attitudes. 5 of the 13 studies found different kinds of motivation- or attitude-related factors that have an effect on the digital exclusion of immigrant clients. Some of the studies found that some clients voluntarily chose to remain a non-user. Other causes include fears of making mistakes, laziness, conservatism, feelings of distrust and previous non-digital routines and habits. It also includes not wanting to interfere with professionals' private life, concerns about data protection and privacy and the breaching of the public/private divide in service delivery. Also, the perception of decreased service quality or insufficient communication was mentioned.

The voluntary choice to remain a non-user of digital welfare services was mentioned in the literature. A study by Safarov (2021) found that some of the participants of the study in Finland wanted to remain a non-user of a service, since they have the possibility to use face-to-face services. Another study conducted by Perrenoud et al. (2022) found out how some clients did not feel the need to use immediate message applications with midwives in Switzerland, and that was the reason for not using them.

The fear of making mistakes and its impact on the digital divide of immigrants in welfare services was also discussed in the literature. A study by Buchert et al. (2022) found that the fear of making mistakes contributed to the non-use of digital services in Finland. The fear of problems and the potential severe consequences for the social benefits prevented Russian-speaking migrants from using digital services. The complicated nature of the digital social benefit application process made the users afraid that they might not be able to provide all the required information, select the wrong option, or attach the wrong documents. Clients might not want to risk making mistakes and thus not getting the social benefits if there is any uncertainty. Another study by Kaihlanen et al. (2022) also found that fear of making mistakes while using digital health services was a significant reason behind not using the services in Finland, especially among migrants. The migrant participants feared that something irreversible would happen, and they would not get any

support if they tried to use digital services. The participants thought that the possible mistakes would have long-term consequences, such as non-renewal of prescriptions, delays in service or treatment, or compromising their health information. Hence, they usually preferred contact-based service options.

The literature discusses negative emotions associated with digital services. Safarov (2021) mentions laziness, fear, conservatism, feelings of distrust, and previous non-digital routines and habits as important personal reasons for not engaging with digital public service in Finland. Participants mentioned lack of trust in digital public services as an important reason for not engaging with them. Some participants characterized themselves as old-fashioned and lazy in learning new ways of communication, preferring face-to-face services. Others expressed a fear of computers and computerization. The difficulties experienced in using digital choices in the past continued to impact the present use of computers and digital public services. Another study by Perrenoud et al. (2022) found that some immigrants used immediate message applications as little as possible in Switzerland, as they did not want to interfere with the carer's private life.

A perception of decreased service quality or insufficient communication was found to be one of the reasons for the lack of service user engagement in Scotland and Canada. The move from face-to-face services to online delivery has affected the amount and quality of communication. Some migrant groups, especially asylum seekers, had concerns about data protection and privacy in online services - especially when the services were provided through Facebook or Zoom. In addition, some migrants reported concerns about the public/private divide in service delivery. Video meetings with the service users and professionals were organized from the privacy of their homes, thus welcoming each other to their private lives. This introduces a new power dynamic, when immigrants in challenging circumstances are revealing possibly more of their private life compared to having a face-to-face meeting at the office. (McMullin, 2021.)

5.1.4 Access to ICT

The final group formed was Access to ICT, and these obstacles were mentioned in 4 of the 13 articles. The barriers to ICT in the reviewed articles consist of not having personal online banking codes or an e-ID, not having access to technology and the lack of reliable

or consistent access to technology or the internet. The literature did not see the access to ICT as the main problem in accessing digital welfare services, but nonetheless it is a possible barrier that needs to be addressed.

The lack of personal online banking codes or e-identification (e-ID) were significant barriers to migrants' use of digital services in two of the studies. In the first study, some participants did not have personal online banking codes, which prevented them from authenticating to services electronically in Finland (Safarov, 2021). The second study focused on digital health services and noted that having an e-ID is a prerequisite for using such services. The study found that not having an e-ID was a significant barrier to migrants' use of digital health services, especially for non-EU migrants who face difficulties obtaining an e-ID in Finland (Kaihlanen et al., 2022).

A lack of access to technology was mentioned in some of the studies. A study conducted by Knights et al. (2021) interviewed both migrants and primary care professionals regarding the digitalization of primary care in the UK. While some professionals disagreed, others observed that some migrants lacked access to technology, making it impossible for them to use digital services. In another study by McMullin (2021), online welfare services were researched in Scotland and Canada. The study found that the lack of reliable or consistent access to technology or the internet affected access to services. Migrant integration service users did not always have the technology needed to access services remotely, and asylum seekers often had limited Wi-Fi access in their accommodation during the asylum-seeking process. During the COVID-19 lockdown, public spaces such as libraries were closed, and access to the internet was not possible in these community spaces. Even those who had access to equipment and the internet sometimes faced difficulties, such as when all household members needed to access the internet simultaneously due to school closures. In some cases, there were not enough devices available to access virtual services.

5.2 The effects of the digital exclusion on immigrants using digital welfare services

The analysis and synthesis process resulted in four main groups that explain the effects of the digital exclusion on immigrants using digital welfare services. In total eight of the 13

articles gave results to the second research question. The effects of the digital exclusion on immigrants using digital welfare services are exclusion from the services, turning to outside help, decreased well-being, as well as time consumption and costs. In addition, exclusion from the services was divided into three subgroups: less access to the services, less additional services and networks, as well as decreased trust in the services. The groups formed in the analysis process are shown below in Figure 3. See Appendix 3 for further information about the analysis.

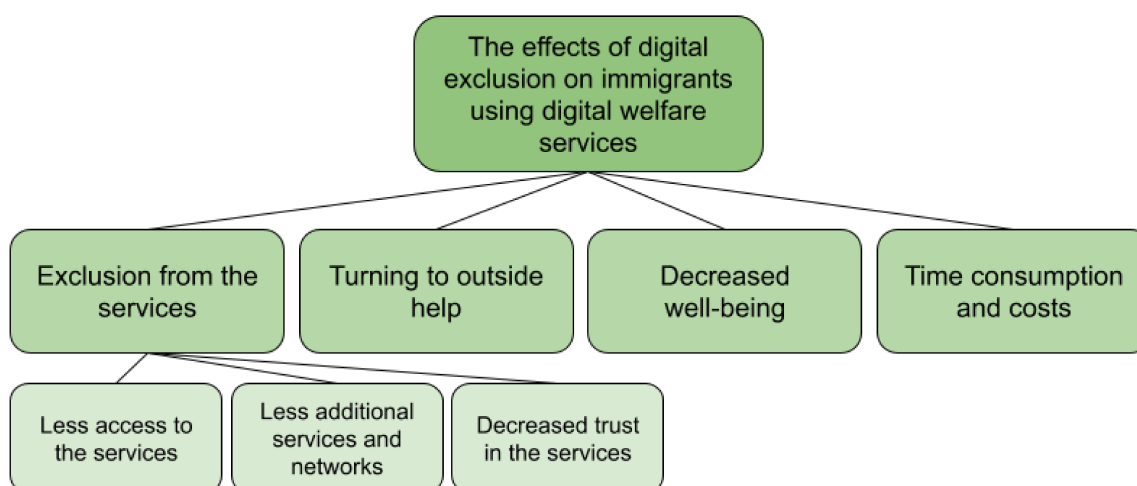


Figure 3. Results of the analysis: The effects of digital exclusion on immigrants using digital welfare services.

5.2.1 Exclusion from the services

In the research, exclusion from services was mentioned the most when discussing the effects that digital exclusion on migrants in the welfare service can result in - they were mentioned in six of the 13 studies. The group exclusion from the services is divided into three subgroups: less access to the services, less additional services and networks, as well as decreased trust in the services.

5.2.1.1 Less access to the services

Three of the 13 studies found that digital exclusion of immigrants from welfare services results in them having less access to the services. A study conducted in Finland argues that the digitalisation of public services might put several population groups, including

older migrants, at risk of being unable to access the public services - not only the digital services, but the services in general (Safarov, 2021). Another Finnish study also argues that accelerating digitalisation of services combined with fast closing of face-to-face services heightens access barriers to migrants, since online services are usually planned for independent use. People who face barriers in using digital services are likely to remain excluded from the services altogether if the services are designed to be used independently. (Buchert et al., 2022.) In addition, a study from the UK explains how limiting the face-to-face service in primary care can lead to challenges in migrants registering with, and accessing, primary care (Knights et al., 2021.)

5.2.1.2 Less additional services and networks

Two of the 13 studies discussed how the digital divide results in immigrants getting less additional services. A study from Switzerland argues that the clients who do not speak French or English get less additional services through IMA (immediate messaging applications) compared to those clients who do speak the same language as the service providers. This is due to the fact that communicating through IMA is time-consuming for community midwives, which leads to midwives not reacting when some clients did not use text messages in communicating with them. This can lead to unequal access to IMA services by immigrant women. (Perrenoud et al., 2022.)

In addition, an Austrian and Swedish study that researched refugees' labor market integration support services found that the digitalization of services had negative effects on the refugees. The study found that when people were not able to meet physically, the refugees were not able to form personal and professional networks, which would be important in the integration process. (Bešić et al., 2021)

5.2.1.3 Decreased trust in the services

Two of the 13 studies outlined how the digital divide of immigrants in the welfare services causes decreased trust in the services. The first study was conducted in the UK. Primary care professionals had found out that virtual consultations of migrants during COVID-19 pandemic resulted in difficulties building trust. Some of the migrants as well as clinicians

explained how trust in a specific practice or individual is essential to accomplish successful care, but that it is harder to build in the absence of face-to-face interactions. (Knights et al., 2021.) Another study done in Scotland and Canada found similar results. The study researched migrant integration organizations in the two countries and found out how withdrawing the in-person contact might decrease service users' trust and comfort with the process. This manifested as decreased engagement with the services. Some of the organization's services translated well into online services, for example language classes, while others have not been successful online, such as mental health support. (McMullin, 2021.)

5.2.2 Turning to outside help

One of the consequences of the digital divide of immigrants in the welfare services included the immigrants turning to outside help. Three of the 13 studies discussed this consequence.

A study from Finland about digitalisation of health and social welfare services argues that the service system pushes, for example, older immigrants to seek help from third-sector organizations instead of modifying the services to be inclusive of a multi-ethnic population. While the state has delegated the advisory services of digital welfare service use to the third-sector organizations, it raises multiple concerns. The third-sector organizations usually have limited resources and they rely on short-term funding and sometimes on volunteers. The NGO's (non-governmental organizations) do not have a legislative basis and they do not follow professional criteria. When immigrants need to rely on external digital support and advisory services, it may put their privacy in danger, force them to possibly rely on incompetent advisors and even expose them to abuse. The same risks are valid when immigrants need to rely on digital support provided by family members or friends. (Buchert et al., 2022.)

Another study conducted in Finland found similar results, stating that there is not enough assistance for digital public services, from within these services, for people who need it. This results in migrants having to get help from third-sector organizations or from their social network. (Safarov, 2023.) In addition, a study conducted in the UK, Germany, Portugal and Sweden discovered immigrants who had language problems relied on the

help of family members, friends, acquaintances as well as non-governmental organizations when trying to access health services, especially in Portugal, which might explain the particularly low reliance on online health services that was observed in Portugal. (Samkange-Zeeb et al., 2020.)

5.2.3 Decreased well-being

Immigrant's digital exclusion from welfare services can lead to decreased well-being, which may manifest in anxiety, stress, and disabling consequences, as evidenced by two of the 13 studies discussed in the literature.

One of the studies mentioned mental health problems as an effect of digital exclusion of immigrants in welfare services. A Finnish study argues that the digital exclusion of public services can create strong negative emotions, such as stress and anxiety. (Safarov, 2021.)

Another study from Finland argues that the fear of making mistakes prevents an independent use of the digital welfare services. Consequently, for these people, digital services can have disabling, or even disempowering, consequences (Buchert et al, 2022).

5.2.4 Time consumption and costs

One of the 13 studies discussed the consequences of time consumption and costs of migrant's not using the digital services in Finnish public welfare services. The study argues that avoiding digital services can result in extensive queuing in face-to-face and telephone-based services, since the digitalization of services has resulted in limiting the services in the offices and by phone and there are not enough staff in the offices and phone service to serve clients who rely on them. When an immigrant uses a phone to contact the public service instead of digital services, accessing the service by calling may also involve high costs. (Buchert et al., 2022.)

5.3 Improvements of digital welfare services to provide immigrants with accessibility

The analysis and synthesis process resulted in five main groups that give suggestions on how digital welfare services can be improved to provide immigrants with accessibility to the services. In total 11 of the 13 articles gave results to the third research question. The improvements for digital welfare services to provide immigrants with accessibility to the service are service design, digital support, multi-channel services, pre-planning the services and motivating the users. In addition, service design was divided into two subgroups: language provision and content design. The groups formed in the analysis process are shown below in Figure 4. See Appendix 4 for further information about the analysis.

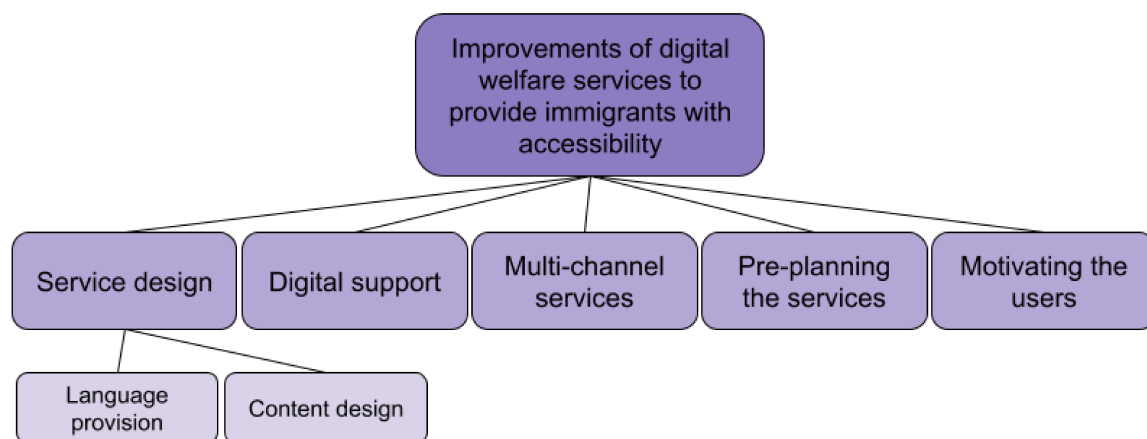


Figure 4. Results of the analysis: Improvements of digital welfare services to provide immigrants with accessibility

5.3.1 Service design

Six of the 13 articles gave suggestions on how digital welfare services have to be designed for them to be more accessible to immigrants. The results in relation to service design were divided into language provision and content.

5.3.1.1 Language provision

Five of the 13 studies emphasized the importance of increasing language options in digital welfare services.

A Finnish study argued that there should be multiple language options for website text and help menus for the services to be more inclusive. In addition, the usability of the services for migrants would improve if the e-governmental and e-health services would implement plain Finnish in the webpages and online forms. (Safarov, 2021.) Another study from Finland calls for attention to the diversity of service users and their needs in digital public services. It is necessary to customize online public service delivery to cater to the requirements of migrant communities through, for example, more personalized support and the possibility to get instant help in their own language. (Safarov, 2023.)

A research article from the UK, Germany, Portugal and Sweden also considers providing health information in different languages in internet-based health information important - and this might help reduce the digital divide between, for example, migrants and non-migrants (Samkange-Zeeb et al., 2020). A Norwegian study emphasizes how eHealth services need to be offered both in Norwegian and minority languages to reduce social inequalities. The information needs to be easy-to-read and culturally appropriate. This being said, the researchers point out how immigrants are from multiple different linguistic and cultural backgrounds, so the altering of the services to suit all different backgrounds would be extremely demanding and costly. As a resolution they offer the idea of possibly using machine translation combined with human translation - at least in the future when the machine translation technology develops and becomes more trustable. (Tatara et al., 2019.)

Also, a study from the UK that included interviews with primary care professionals and migrants in England outlined how the participants suggested innovative opportunities to improve the digital health services. One of the suggestions was to use multiple modes of translated communications in combination, for example, text, emails and leaflets. Digital health could be translated by, for instance, using text templates and Youtube or other platforms. The suggestions also include how virtual group consultations should include a translator. The communication barriers could also be broken down through funding for

translators, migrant community volunteers and champions. (Knights et al., 2021.)

5.3.1.2 Content design

Two of the 13 studies discussed how content design needs to be planned in digital welfare services for them to be more accessible to immigrants. A Finnish study describes how to enhance the digital engagement in public services of older migrants, and how all of the potential obstacles of using the services need to be taken into account when planning the services. The online content must be simple, usable and reliable so that people in vulnerable positions get the opportunity to use them. (Safarov, 2021.) Also, a study from Switzerland highlights how online services need to have tailored information, so that, for example, non-French-speaking immigrant women are able to receive the care they need (Perrenoud et al., 2022).

5.3.2 Digital support

Four of the 13 studies discussed the importance of digital support in the services.

A Finnish study argues that since some immigrants need to turn to external help to use digital public services, meaning non-governmental organizations and their own social network, public services should start providing the support themselves to avoid the possibility of abuse, endangerment of personal privacy and the need to rely on incompetent advisors. The support for digital service use should be planned taking equity and equal access into consideration, and it should concentrate on digital and technological skills, as well as support in understanding the service's content and variation in different life situations. (Buchert et al., 2022.) In addition, another study from Finland declares how there should be a wide provision of workshops and courses that aim to develop language- and digital skills as well as guide the use of digital services (Safarov, 2021).

A study from the UK, Germany, Portugal and Sweden also describes how to avoid a digital divide of migrants. The study emphasizes how an inclusive internet-health strategy should take into account the migrants' capacity and IT competency in their new country of residence. (Samkange-Zeeb et al., 2020.) Lastly, a study from the Netherlands points out

how ICT education needs to be tailored and integrated into the social services and into the daily lives of the clients. ICT training should be integrated with poverty alleviation and language skills. The needs for ICT education vary according to the setting and socio-demographics encountered, but, at all times, it should be efficient with regard to time, motivation, and energy. (Goedhart, Broerse, Kattouw & Dedding, 2019.)

5.3.3 Multi-channel services

Three of the 13 studies emphasized how welfare services should be offered in multiple channels to be more accessible to immigrants.

A Finnish study outlines how government agencies should aim to reduce the stress that is caused by digital public services and secure the offering of public services through several channels. The availability of both face-to-face and remote services is crucial to avoid disadvantages amongst clients. (Safarov, 2021.) Another Finnish study also states that the study's results highlight the need for offering public services also in person, so that equity is guaranteed (Buchert et al., 2022). A third Finnish study about digital health services underlines how there should be multiple service channels. Since there will always be people, for example illiterate migrants, who will be unable to use digital health services, face-to-face health services should be maintained alongside digital health services. (Kaihlanen et al., 2022.)

5.3.4 Pre-planning the services

Three of the 13 studies mentioned improving the services by pre-planning them. This included involvement of the migrants in the planning and policy-making to increase digital inclusion.

Involvement of the migrants was mentioned in a study from the UK. The participants in the study emphasized the need for clinical commissioning groups, general practitioners practices, and pharmacies, to actively engage with migrant communities and their institutions in co-creating solutions. (Knights et al., 2021.)

A Finnish study argues that health and social welfare policies have to absorb digitalisation to work for its goals, which are for example inclusion and equity. If that is not ensured,

digitalisation may move the services in the opposite direction. (Buchert et al., 2022.) Another Finnish study is also worried about the consequences of digitalization of public services on the most vulnerable groups. The planning of digital services calls for evidence-based digital inclusion strategies and policies to prevent the social exclusion of the digitally excluded population. (Kouvonen et al., 2021.)

5.3.5 Motivating the users

One of the 13 studies would improve the digital welfare services by motivating the immigrant users to use the services through encouragement and optionality. This study from France, Luxembourg, Germany and Belgium suggests that health professionals have an important role in showing the benefits of the digital personal health records. The professionals should offer encouragement to the individuals regarding their ability to access their records. Another suggestion is that the access to universal personal health records could be provided on an opt-out basis, which means that registering to the service would include a possibility to close or permanently delete the PHR whenever. At the time the research was done, the service did not have an all-inclusive opt-out possibility. (Paccoud et al., 2021.)

6 Conclusion and discussion

In the next chapters, an overview of the key findings, methodological discussion and discussion will be presented. The key findings will outline the main results and implications of the study. The methodological discussion of the research will discuss the methods used to collect and analyze the data, as well as any limitations or challenges encountered during the research process. The final chapter will have a discussion of the findings, situating them within the broader context of the field and offering potential avenues for future research.

6.1 Key findings

The aim of this thesis was to find out the causes of the digital exclusion of immigrants in welfare services, the effects this has on the immigrant clients, and also to give suggestions

on how digital welfare services could be improved to provide immigrants with accessibility to the services. In total 13 articles were chosen for the literature review. The articles had various study locations in Europe and a wide range of study populations.

There was a large amount of explaining factors of the causes for digital exclusion of immigrants in welfare services. The analysis process revealed that the causes of the digital exclusion of immigrants in welfare services were found to be related to skills and knowledge, an individual's characteristics, motivation and attitudes, as well as access to ICT.

Skills and knowledge consisted of three subgroups, which were language skills, digital skills, and service knowledge and service specific literacy. The language skills were mentioned the most in the literature alongside with service knowledge and service-specific literacy - making these the most important causes of digital exclusion of immigrants in the services. The article discussed how the local language competency, the first language competency, illiteracy and lack of support in a variety of languages had an effect on the digital exclusion of immigrants. Service knowledge and service-specific literacy and how they affect the digital divide of immigrants consisted of insufficient knowledge about the service, structure and system, bureaucratic literacy, administrative literacy, and health literacy. The digital skills that were described in the literacy and what affected the digital exclusion of the services were related to weak digital skills, lack of e-literacy and the lack of assistance for digital solutions inside the services.

Other causes of the digital exclusion of immigrants in the welfare services were related to an individual's characteristics. In this context, an individual's characteristics consist of different person-specific attributes such as level of education, the length of residence in the new country and immigrant status, income comfort, age and health-related variables. These characteristics together and separately can affect digital inequality.

In addition, some causes of the digital exclusion of immigrants in digital welfare services are motivations and attitudes. These included the service-users not wanting to use digital services, fears of making mistakes, laziness, conservatism, feelings of distrust and previous non-digital routines and habits. It also included not wanting to interfere with professionals' private life, concerns about data protection and privacy and the breaching

of the public/private divide in service delivery. Also, the perception of decreased service quality or insufficient communication was mentioned.

The final group formed was Access to ICT. The barriers to ICT in the reviewed articles consist of not having personal online banking codes or an e-ID, not having access to technology and the lack of reliable or consistent access to technology or the internet. The research did not see the access to ICT as the main problem in accessing digital welfare services, but nonetheless it is a possible barrier that needs to be addressed.

The second research question studied the effects of digital exclusion of immigrants in digital welfare services. The literature pointed to several consequences that happen or can happen when immigrants are excluded from the digital welfare services. The four groups that were formed in the analysis are exclusion from the services, turning to outside help, decrease in well-being, as well as time consumption and costs.

The exclusion from digital welfare services was one of the main effects of the digital divide of immigrants in digital welfare services. This was shown in less access to the services in general and less additional services and networks, as well as decreased trust in the services. The concern for digital inequality should therefore not only entail the fact that some immigrant clients cannot use the digital services, but the fact that they might not use social and health services altogether if there are barriers to the use of the digital ones. Decreased trust in the services might also be present in face-to-face services if the digital interactions have caused to decrease the trust. If the increase in digital services results in the decrease of traditional face-to-face services, and immigrants have barriers to use the digital ones, some immigrants have less options in the range of services and are at the risk of being left out of the welfare services altogether.

Turning to outside help meant that some immigrant clients seek help to use digital welfare services from third-sector organizations or from their social network, meaning family, friends and acquaintances. This was argued to be a consequence of the service system pushing immigrants to seek help elsewhere, when the organizations themselves do not offer enough assistance for digital services for people who would need it. Seeking help from outside of the services also can have, according to the research, risks regarding privacy, safety, and competence of the outside helper.

In addition, the exclusion from digital services can decrease well-being, since it can create stress and anxiety and have disempowering consequences. Lastly, the digital exclusion of immigrants in digital services can cause the immigrant clients to use the alternative services instead through face-to-face services or telephone-based services. These services can be more time-consuming since digitalization of the services has resulted in limiting the services in the offices and by phone and there are not enough staff in the offices and phone service to serve clients who rely on them. Using phone services can also cause additional costs.

The last research question aimed to find suggestions on how to improve digital welfare services to be more accessible to immigrants. Depending on the article these suggestions were given by the professionals that were interviewed in the studies, or by the researchers themselves who gave the suggestions based on their research results. The improvements included service design, digital support, multi-channel services, pre-planning the services, and motivating the users.

Service design, including language provision and content design, was highlighted in the articles the most. The results show the importance of providing digital welfare services in multiple languages to cater to the needs of immigrant clients. There should be multiple language options for websites, easy-to-read and culturally appropriate information, as well as clear, concise and language-specific resources. Plain language was also mentioned as a possible improvement. In addition, the online service content needs to be simple, usable, reliable and have tailored information for them to be more accessible for immigrant clients.

The clients who use digital welfare services should have the option to receive digital support within the services. As of now, that is not the situation in all of the services, which, like the results to the previous research question showed, can lead the service users getting digital support elsewhere, risking, for example, their privacy. It is important to ensure that the organizations providing these services have the necessary resources and support to deliver them effectively.

The importance of continuing to offer services in multiple channels was emphasized in the studies. Digital welfare services are well-suited for many client groups, but alongside

them, there must be an opportunity to receive services by other means as well, especially face-to-face, but also for example by phone.

Other suggestions included that the digital welfare services need to be pre-planned for them to be able to increase digital inclusion. The pre-planning includes taking migrant communities to codesign solutions, health and social welfare policies need to pursue social inclusion and equity, as well as evidence-based digital inclusion strategies and policies need to be created. Finally, the research suggests that motivating the users of the services to use digital welfare services can be important, although this was mentioned in only one of the studies. Motivating the clients included showing the benefits of the digital services and having an option to not use the digital services, even after starting to use them.

6.2 Methodological discussion

Systematic literature review was chosen as the research method, since this method is particularly useful for synthesizing existing research on complex topics. As the research topic of this study is complex and multifaceted, a systematic literature review was the best approach to ensure that all relevant research was explored. This method allowed me to identify common themes and patterns across a wide range of studies, and to draw nuanced and evidence-based conclusions that would not have been possible with a less systematic approach.

The Finnish National Board on Research Integrity (TENK) promotes good scientific practice in Finland. TENK has published guidelines for the responsible conduct of research. For research to be ethically acceptable and reliable and for its results to be credible, these guidelines have to be followed. Applying these guidelines is part of the self-regulation and quality assurance of the research community. (Varantola, Launis, Helin, Spoof & Jäppinen, 2012, p. 30.) While conducting this thesis, I have consistently kept in mind the guidelines for responsible conduct of research. Carrying out a thesis necessitates ongoing self-reflection regarding one's choices, starting from the planning phase, through the literature search, and during the analysis of data.

TENK's guidelines for the responsible conduct of research emphasize the importance of responsible and ethical conduct in all aspects of research, from study design and data

collection to reporting and dissemination of results. The key starting points of good scientific practice include for example that the research follows the procedures recognized by the scientific community. This includes integrity, meticulousness, and accuracy in conducting and presenting the results, and in evaluating the research and its results. Data acquisition, research, and evaluation methods that conform to the criteria of scientific research and are ethically sustainable are applied to the research. The publishing of the results of the research has to be transparent and responsible. (Varantola et al., 2012, p. 30.) I have followed the method of doing a systematic literature review according to Petticrew and Roberts (2006). I have reported the steps of data acquisition and the analysis of the results so that the research could be repeated by another researcher if needed. I have worked to ensure that my study design and methods are consistent with the expectations of the scientific community, and that my findings are accurate and reliable.

The researcher has to respect other researchers' work and achievements by citing their publications appropriately and by giving their achievements credit (Varantola et al., 2012, p. 30). In my thesis, I have taken great care to select sources that are of high quality and as reliable as possible. I have also ensured that references are appropriately marked, clearly indicating which ideas are my own and which are the results or ideas of another study or publication. Additionally, I have diligently marked all the sources in the reference list and strictly adhered to the principle of not plagiarizing anyone's text in my thesis.

A thesis needs to be trustworthy in order to be considered a reliable and credible source of information. Okoli (2015) discusses the choices related to practical screen and its effects on trustworthiness. Practical screen is the process of deciding which studies to include or exclude from a literature review based on specific criteria. It helps reduce the number of studies to be analyzed to a manageable number. Reviewers need to create specific inclusion criteria for the type of works that may be considered useful and applicable. The practical screen is a subjective process which requires a balance between broadness and practical manageability, and the decisions made during the process are crucial in ensuring the comprehensiveness and trustworthiness of the literature review. (Okoli, 2015, p. 891–892.) The choices made for the inclusion and exclusion criteria, such as selecting peer-reviewed articles, limiting publication years to 2010-2023, choosing English and Finnish as the languages, and limiting study location to Europe, have been

justified in section 4.2. The inclusion and exclusion criteria were selected to ensure a manageable number of results for the review while also providing comprehensive answers to the research questions, thereby enhancing the trustworthiness of the findings.

A reliable thesis needs to ensure transferability. Okoli (2015) argues that a comprehensive and rigorous literature review requires reviewers to establish their own inclusion- and exclusion criteria based on their research question. It is important that the criteria used are thoroughly understood by the reader and clearly explained to make the review process transparent and replicable. (Okoli, 2015, p. 897.) To the best of my knowledge, I have explained the process of the literature search, including the inclusion and exclusion criteria, choice of databases, and the used Boolean operators, in such a way that the review can be replicated, and similar results can be obtained.

In reporting the findings, reviewers should document the entire procedure with sufficient detail so that other researchers can follow the same steps and arrive at the same results - this transparency ensures scientific rigor and provides a basis for future research. The review process must be explicit in describing the procedures followed to enable independent researchers to reproduce the results accurately. By delineating the steps needed for a rigorous review, researchers can ensure that their literature review is trustworthy, transparent, and contributes to the advancement of knowledge in their field. (Okoli, 2015, p. 902 & 905.) In my thesis, I have taken great care to document the entire literature review process with sufficient detail to ensure transparency and reproducibility. By doing so, I have strived to enable other researchers to follow the same steps and arrive at similar results. Through this transparency, I have aimed to ensure scientific rigor and provide a basis for future research in the field. Additionally, by delineating the steps taken in the literature review, I have endeavored to ensure that my thesis contributes to the advancement of knowledge in my field and is trustworthy and transparent.

I have made an effort to be transparent about my decisions throughout my thesis process so that readers can draw their conclusions about them. It is worth noting, however, that even though trustworthiness, transparency and transferability have been important guidelines during the process, another researcher could have made different choices at different stages of the research. These choices could have included formulating the research questions, selecting the search terms and databases, and deciding which articles

to include in the review. Furthermore, a different researcher may have interpreted the results in a different manner, even when using the same articles. While working on my thesis, I carefully considered how to group the results of the research questions and experimented with different options. For instance, I chose to answer the first research question by looking at which characteristics of the immigrant client affected digital inequality. Although I could have researched which factors in the services themselves caused inequality, since the research articles concentrated more on the client's characteristics, I found it easier to answer the question in this way. In other sections, I attempted to emphasize the role of services in reducing inequality to ensure that the results of the research question did not suggest that the responsibility lay solely with the immigrant client.

The findings of the literature review can be considered somewhat generalizable. Petticrew and Roberts (2006) suggest that assessing the generalizability of the results involves offering a summary of the study findings while accounting for variations in the studies (Petticrew & Roberts, 2006, p. 179). The articles selected for this review varied in terms of study populations, study locations, studied organizations, and professional settings. Although there was extensive variation in the studies, the literature yielded similar results, and there were no contradicting findings. If the results have been consistently replicated in various settings with different populations, this suggests that the findings may be transferable - the more studies that confirm the same results, the stronger the evidence for the generalizability of those findings (Petticrew & Roberts, 2006, p. 149). However, the sample of the studies was small, so while I do believe that the results are somewhat generalizable, I do not think that the results would, with certainty, be the same in all possible settings in different European cultures and digital welfare settings. It is also important to remember that not all immigrants face the obstacles or effects identified in this study. Many immigrants have the knowledge, skills, and opportunity to use digital welfare services without problems.

6.3 Discussion

The results of this thesis are somewhat concerning, as welfare services are increasingly digitalized and there are less and less face-to-face services. Digital welfare services are

designed to, for example, improve the accessibility of services, promote the health and well-being of the people, make services more efficient and reduce costs. However, it seems that these goals are not realized for all client groups. Some immigrants have many barriers to using digital welfare services, and these services seem to affect them negatively. Being left out of digital services can, at worst, cause exclusion from social and health services as a whole - which can lead to further social exclusion.

The chosen articles for the review were published between 2019–2023, even though the literature search was made starting from the year 2010. Furthermore, a considerable part of the 13 articles, 11 articles, had been published after spring 2020, i.e. after the start of the COVID-19 pandemic. The timing of the published articles within the last four years alone is an interesting observation. This is largely explained by the fact that the COVID-19 pandemic forced the services to come up with new solutions for the production of social and healthcare services. As a result, the provision of the services was moved online for some parts, even though they existed also before the pandemic. In addition, this may indicate that only in recent years has the digital marginalization of immigrants begun to be more widely recognized and investigated in the welfare services.

Finnish studies were well-represented in the literature review. This could be due to the fact that Finland is considered a society that is at the forefront of digitalization and the amount of citizens' electronic services in Finland has grown and developed significantly since the beginning of the 2010s (Kyytsönen et al., 2021, p. 15). Another explanation is that the Digiln project carries out research into digital and social exclusion in the area of social and healthcare in Finland (Digiln, 2021), and they also have a large amount of studies regarding immigration in this subject. The importance of offering multi-channel services was highlighted especially in Finnish studies, possibly because face-to-face meetings have started to be limited in Finnish services, for example in applying basic social assistance (Blomberg, Saikkonen & Tuomola, 2022, p. 276). Perhaps the provision of digital welfare services has not yet affected the availability of face-to-face services as much elsewhere.

The results show how different human characteristics form intersections, and when studying the phenomenon of digital exclusion of migrants, these different variables also have to be recognized to understand the social problem. The review shows how migrants

with low educational level, low socio-economic position, migrants who have had a short length of residence or are first-generation migrants, older migrants and migrants with poor health are at a higher risk of being digitally excluded. A person who has several of these attributes can have a higher possibility of not being able to access digital welfare services. Digital exclusion is, thus, a result from different intersecting disadvantages (Buchert et al., 2022). Helsper (2021, pp. 41–42) has, also, previously pointed out how intersections of different characteristics and their effects have to be better recognized when discussing digital inequality.

The literature did not acknowledge access to ICT as the main problem in accessing digital welfare services - probably because most immigrants nowadays have access to digital tools and the internet in Europe. Nonetheless, it still is a possible barrier for some people that needs to be addressed. The obstacles of accessing ICT might have increased in some parts of Europe for some immigrants during COVID-19 lockdown. As McMullin (2021) pointed out, the lockdown during COVID-19 affected closing, for example, public libraries, which made it more difficult for immigrants to access the internet in public spaces. The modern obstacles in accessing ICT in some countries, like Finland, include the requirements of online banking codes in accessing digital welfare services. This was a problem that was recognized in the literature, and Finnish Valtiovarainministeriö (2019, p. 35) has addressed it as well.

Skills and knowledge play a major part in the digital divide of immigrants in welfare services - and the importance of these was highlighted in the articles. Like Helsper (2021, pp. 74–75) argues, digital skills are key to digital inclusion and recognizing the importance of skills to use technologies is necessary to tackle digital inequalities. In the results of this thesis, the skills and knowledge included digital skills, service knowledge and service-specific literacy, and language skills. According to Knights et al. (2021) COVID-19 lockdowns has further aggravated the difficulties of language skills during COVID-19 lockdowns, as clients had a limited ability to get help with translating health information, appointment letters and messaging, since there was a reduced access to friends who had previously translated that information (Knights et al., 2021). These obstacles related to skills and knowledge could be matters for service providers to recognize in their client groups and to design the services so that they do not raise barriers to using the services. This could be done by designing the services so that they can also be used by those with

limited language skills and digital skills, as well as improving the services to be more comprehensible. In addition, help using the services should be available from within the services.

To summarize, the results for the first research question are similar to those of Helsper's (2021, p. 34) model of digital inequalities (see part 3.3 on this thesis for further information). Helsper has also described how access, motivations and attitudes, and skills, have an effect on digital inequalities. Helsper did their research on this subject in a wider subject, where they did not limit the subject to immigrants or digital welfare services. However, since the results of my first research question are, to some extent, similar to what Helsper has researched, I argue that the problems immigrants face in digital welfare services are somewhat similar to other people in a vulnerable situation in the digital world. This being said, immigrants also have obstacles that are highlighted specifically in relation to immigration, such as challenges in language skills and limited language options in digital welfare services, as well as short lengths of residence in the new country, which can explain the lack of understanding of the country's practices and services.

The effects of the digital exclusion of immigrants in digital welfare services has severe consequences that should be taken seriously by service planners and those in an influential position, such as policymakers. I realize that since the main focus of the literature was not, generally, the effects of digital exclusion, these research results certainly do not include all the effects that being excluded from digital services can cause. Like Virtanen et al. (2022, p. 2) have argued, digital social and healthcare services can exclude some client groups from the services entirely and further strengthen digital and social exclusion, and thus deepen the inequality of the population. This is certainly not the goal of digital service providers, so existing research results should be taken into account when designing services.

The results highlight how the services need to consider the language options when providing digital welfare services. This is a challenge for the service providers, since immigrants have a broad range of cultural backgrounds and language skills. Tatara et al. (2019) argue that the altering of the services to suit all different backgrounds would be extremely demanding and costly - and as a resolution they offer the idea of possibly using machine translation combined with human translation (Tatara et al., 2019). Also Knights et

al. (2021) suggest that there could be multiple modes of translated communications in combination, for example text, e-mails and leaflets, and that the aid of translators and migrant community volunteers could be utilized more within the services (Knights et al., 2021). In digital welfare services, it is hardly possible to offer a service in every language seamlessly, at least with current technologies. In any case, the availability of using a professional translator could serve clients with an immigrant background. Perhaps increasing the language selection in the digital welfare services will be more successful in the future, for example, when artificial intelligence possibilities develop. In the meantime, digital services cannot be the only way of using a service.

Vainio et al. (2017, p. 3) argue that service users do not, in the strategy documents, appear to be the starting point of the processes when developing digital public services. Based on the literature review, the planning process of the digital welfare services should be updated so that the client's point of view is taken into account more strongly when designing the services. This includes involving the client groups (in this case immigrants) in the planning of the services (Knights et al., 2021). Inclusion and equity need to be set as goals for the planning of the digital services, and evidence-based digital inclusion strategies and policies need to be planned to avoid social exclusion (Buchert et al., 2022; Kouvonen et al., 2021).

The development of digital welfare services in a more inclusive direction would serve not only immigrants but also other client groups. As Kaihlanen et al. (2022) found out in their research, Finnish-born clients also had difficulties with the administrative and medical vocabulary in the digital health services. In addition, Saikkonen et al. (2019, pp. 334–335) discovered how more than half of the Finnish citizens also experience various obstacles in using digital services. Immigrants' needs in digital services are therefore not unique, and developing services from their starting point would also serve society more broadly. By making the services more accessible, by offering multi-channel high-quality services, by involving user groups in the planning of the services and by implementing evidence-based practice and activities, it would be easier for all client groups to use the services.

Even high-quality research is rarely exhaustive (Saikkonen et al., 2019, p. 336). The results of this thesis show some causes behind the digital exclusion of immigrants in the welfare services, some effects that the digital exclusion has on immigrants and give some results

on how to improve digital welfare services. I have collected all possible information I was able to find to answer the research questions for the systematic literature review. Since my research questions were somewhat narrowly defined by the client group (immigrants), by the services (digital welfare services), and by the location (Europe), the number of articles that answered the question was limited. If I would have studied the questions, for example, without location limitations, or if I had studied the digital exclusion from all kinds of services, not limiting them to welfare services, there would have been a broader range of results. There would probably also have been more results if this study had been conducted only a few years later, since most of the articles have been written in the last three years.

The digital divide related to migrant factors is a topic that has been underexplored in the field of health (Samkange-Zeeb et al., 2020). I argue that this is also the case in the field of social services. Research on this subject has shown that the digital divide still exists and should be considered in future research on digital inequalities. The evidence found by this research should also be taken into account when planning digital social and healthcare services. Ideas for future research could include further exploration of the digital inequalities faced by immigrants in welfare services and the consequences of this exclusion on immigrant clients and society at large. The existing research has already provided many possible improvements for these services. It would be important to study the effects of these improvements on the use of digital services by immigrants after they have been implemented.

Social policy must ensure that if certain people face digital exclusion, their digital exclusion does not lead to a wider exclusion from health and social welfare services and society at large (Kouvonen et al., 2022, p. 10). Digital exclusion can have serious consequences especially for those who are already marginalized or vulnerable. It can also have broader societal implications. Many people may suffer increased social and economic inequalities if they are left behind in the digital age. Moreover, digital exclusion is not a static phenomenon - as technology evolves, new forms of exclusion will likely occur, and policies and programs will need to keep up. It is necessary to stay attentive about the ever-evolving issue of digital exclusion in order to foster a society that is more equitable and inclusive.

In the most radical visions regarding digitalization, it is thought that the human factor, people, will become unnecessary over time. However, there is still no situation in sight where the understanding of the human mind is not needed. The person brings to the service the ability and skill to meet different people so that they feel heard and get the support they need. Positive service experiences strengthen the feeling of belonging to society. In contrast, poor service design, bad experiences as a service user, or not being understood weakens the experience of inclusion. (Saikkonen et al., 2019, pp. 342–344.) It remains to be seen how, for example, artificial intelligence (AI) can be used in the future in digital welfare services. In the future, digital services will certainly evolve, but it is still unclear how they will be utilized in social and healthcare settings. Welfare services involve human interaction, empathy, and personalized care that cannot be replicated by technology alone. Face-to-face interactions and the importance of developing trust and rapport with clients cannot be understated.

7 References

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Appendix 1. Descriptive table of the articles

Nr.	Author(s), Year published and Title	Study location	Database	Description of the study	Study population	Study design
1	Safarov, N., 2021 Personal experiences of digital public services access and use: Older migrants' digital choices	Finland	Web of Science	The research explores how older Russian-speaking migrants use digital technologies and electronic services, with a primarily focus on digital health and social services. The study aims to understand the digital divide by analyzing personal decisions that lead to engagement or disengagement with digital tools. The research suggests that individual efforts and personal attributes, such as habits, trust, and fears, are critical factors in shaping digital engagement, alongside socio-demographic determinants and the ongoing digitalisation of public services.	Russian-speaking adults, aged 65 years and older, who migrated to and settled in Finland	A qualitative case study. Participant observations (approximately 100 h), semi-structured interviews (n = 17), and collected documents (n = 16)
2	Buchert, U., Kemppainen, L., Olakivi, A., Wrede, S. & Kouvonen, A., 2022 Is digitalisation of public health and social welfare services reinforcing social exclusion? The case of Russian-speaking older migrants in Finland	Finland	Web of Science	This study investigates the digitalisation of public services, focusing on the perspective of social exclusion experienced by older migrants who use digital public health and social welfare services. The research shows that Russian-speaking older adults are excluded from the digital services, in particular those with lower socio-economic status, poor local language skills, and without Finnish education. The study argues that digitalisation may worsen social exclusion and undermine the social rights of these individuals.	Russian-speaking migrants aged 50 or older in Finland	Mixed methods. Qualitative data: interviews (7) and quantitative data: surveys (a sample of 3000 people, 1082 responded).
3	Samkange-Zeeb, F., Borisova, L., Padilla, B., Bradby, H., Phillimore, J., Zeeb, H., & Brand, T., 2020 Superdiversity, migration and use of internet-based health information - results of a cross-sectional survey conducted in 4 European countries	UK, Germany, Portugal and Sweden	Web of Science	This study investigates the factors associated with the use of Internet-based health information among migrants in four superdiverse neighborhoods in the UK, Germany, Portugal, and Sweden. The research focuses on the reasons why migrants use the internet for health information and the impact of migration-related factors, socio-demographic characteristics, and health-related factors. The study finds that first-generation migrants, those with poor local language skills, older age, and low education are less likely to use internet-based health information, while low trust in physicians is positively associated with internet use for health information. The research emphasizes the importance of considering migration background and language competency when promoting the provision of healthcare services via the Internet to ensure that information and services are widely accessible.	Two superdiverse neighborhoods in each of four European cities: Birmingham, United Kingdom; Bremen, Germany; Lisbon, Portugal and Uppsala, Sweden. The neighborhoods have a heterogeneous population, comprising non-migrants as well as migrants originating from different countries and with a range of different migration statuses.	Mixed methods. Qualitative data: interviews and quantitative data: cross-sectional survey (2570 participants).

4	Tatara, N., Hammer, HL., Mirkovic, J., Kjollesdal, MKR. & Andreassen, HK., 2019 Associations Between Immigration-Related User Factors and eHealth Activities for Self-Care: Case of First-Generation Immigrants From Pakistan in the Oslo Area, Norway	Norway	Web of Science	This study aimed to understand the electronic health (eHealth) activities for type 2 diabetes mellitus self-care in first-generation immigrants from Pakistan in the Oslo area, Norway, and the associations between their eHealth activities and user factors specific to this target group. The results suggest that immigration-related factors may confound associations between general user factors and eHealth activities, highlighting the need for further studies to explore the influence of immigration-related user factors for eHealth activities in other immigrant groups and countries.	First-generation Pakistani immigrants in the Oslo area	Quantitative research. Survey (n=176) that was analyzed with regression analysis.
5	Kaihlainen, AM., Virtanen, L., Buchert, U., Safarov, N., Valkonen, P., Hietapakka, L., Horhammer, I., Kujala, S., Kouvonen, A. & Heponiemi, T., 2022 Towards digital health equity – a qualitative study of the challenges experienced by vulnerable groups in using digital health services in the COVID-19 era	Finland	Web of Science	This study examined challenges experienced by vulnerable groups (older adults, migrants, mental health service users, high users of health services and the unemployed) in using digital health services during the COVID-19 pandemic. The results showed that insufficient digital and/or local language skills, lack of support and training, poor health, lack of strong e-identification or suitable devices, as well as fears and lack of trust regarding digital platforms were the main challenges faced by participants. The study highlights the need for development and implementation of digital health services that ensure equal access to services, while still offering traditional face-to-face services.	Older adults, migrants, mental health service users, high users of health services, and the unemployed in Finland	Qualitative descriptive design. Semi-structured interviews (n=74).
6	Knights, F., Carter, J., Deal, A., Crawshaw, AF., Hayward, SE., Jones, L. & Hargreaves, S., 2021 Impact of COVID-19 on migrants' access to primary care and implications for vaccine roll-out: a national qualitative study	UK	Web of Science	This qualitative study examined the impact of COVID-19 on recently-arrived migrants' access to primary healthcare in the UK and implications for vaccine roll-out. The study found that digitalisation and virtual consultations amplified existing inequalities in access to healthcare for many migrants due to a lack of digital literacy and access to technology, compounded by language barriers. Migrants reported challenges registering and accessing healthcare due to physical closure of surgeries, indirect discrimination, and a lack of access to targeted and tailored COVID-19 information or interventions. Some migrant groups are at risk of digital exclusion and may need targeted additional support to access services. The study recommends innovative solutions, including translated digital health advice.	Primary care professionals (PCPs) and migrants in urban, suburban, and rural settings across England	Qualitative study involving semi-structured interviews.

7	Perrenoud, P., Chautems, C. & Kaech, C., 2022 Whatsapping the continuity of postpartum care in Switzerland: A socio-anthropological study	Switzerland	Web of Science	This study analyzed the use of Immediate Messaging Applications (IMAs) between health and social care professionals and women, particularly immigrant women, during the perinatal period in Switzerland. The use of IMAs led to more frequent communication between women and their caregivers, allowing for swift responses to concerns, but midwives encountered difficulties in answering questions that could not be solved through quick communication. Not all women contact their carer through digital messages; immigrant women are less likely to know and use this service. While IMAs offer a promising communication tool, policy makers and practitioners should ensure that its use does not contribute to unequal access to care.	Health and social care professionals – with a focus on community midwives – and women who communicate between postpartum home visits through Immediate Message Applications in Switzerland	Qualitative methods including semi-directed interviews with midwives and health and social care professionals (n = 30) and immigrant women (n = 20).
8	Goedhart, NS., Broerse, JEW., Kattouw, R. & Dedding, C., 2019 'Just having a computer doesn't make sense': The digital divide from the perspective of mothers with a low socio-economic position	Netherlands	Web of science	This study aimed to understand why mothers with low socio-economic positions (SEP) in the Netherlands are not using Information and Communication Technology (ICT) and gain insights into their perspectives, experiences, and needs related to ICT. Results showed that poverty, motherhood, complexity of ICT, and being first-generation immigrants were reinforcing factors that influenced access to ICT. The mothers' needs went beyond the distribution of ICT devices, and ICT education should be tailored to their needs and integrated into existing social services. Policymakers should adapt online information services to the mothers' strengths.	Socio-economically disadvantaged mothers living in Amsterdam, who were between 20 and 60 years old. Most mothers had a non-Western background (92%). In addition thirty health and social care professionals participated in the semi-directed interviews, including fourteen self-employed community midwives.	Qualitative data gathered through participant observations (POs), semi-structured interviews (SSIs) and focus group discussions (FGDs)
9	Paccoud, I., Baumann, M., Le Bihan, E., Petre, B., Breinbauer, M., Bohme, P., Chauvel, L. & Leist, AK., 2021 Socioeconomic and behavioural factors associated with access to and use of Personal Health Records	France, Luxembourg, Germany and Belgium	Web of science	This study examines the factors affecting the use of Personal Health Records (PHRs) among individuals with different socioeconomic statuses. The results show that being older than 65 years, and migrant, were negatively associated with desire to access PHR. One of the results was, that income comfort among migrants was an important determinant of whether they want to access their PHRs. The findings suggest that facilitating access and regular use of PHRs among disadvantaged groups could reduce health inequalities and advance health equity.	Individuals aged over 18 in the areas of Lorraine (France), Luxembourg, Rhineland-Palatinate and Saarland (Germany), and Wallonia (Belgium)	Quantitative research. A self-administrated questionnaire (n = 829).
10	McMullin, C., 2021 Migrant integration services and coping with the digital divide: challenges and opportunities of the COVID-19 pandemic	Scotland and Canada	Web of Science	This research note discusses the impact of the shift to online service delivery for voluntary and community organizations, with a focus on migrant integration organizations in Quebec and Scotland. The note highlights four key emerging themes: the complexities of the digital divide, trust and communication issues, the blurring of public/private boundaries, and the benefits and opportunities of digital service delivery. The note concludes with reflections on the long-term implications for these organizations as they adapt to the pandemic and	Migrant integration organisations in Quebec (Canada) and Scotland (UK)	Qualitative fieldwork with organisations in both contexts, including observation of open online events/meetings, analysis of organisational documents and interviews

				plan for the future.		
11	Bešić, A., Diedric, A. & Aigner, P., 2021 Organising labour market integration support for refugees in Austria and Sweden during the Covid-19 pandemic	Austria and Sweden	Springer Link	This paper explores how the Covid-19 pandemic has impacted labour market integration support (LMIS) for refugees in Austria and Sweden. The study talks about the impact of digitalisation of these services on digital divide. Some of the findings include how low education level, age, lack of e-literacy and service knowledge affect on the digital divide and how this deepens the inequalities. The study highlights the need for a better understanding of how integration support is organized across different levels and the impacts of the pandemic on such support.	Refugees in Austria and Sweden	Qualitative research. 29 semi-structured interviews and three focus group workshops
12	Safarov, N., 2023 Administrative Literacy in the Digital Welfare State: Migrants Navigating Access to Public Services in Finland	Finland	Manual Search	This article examines the challenges that migrants face when accessing public services due to the digitalisation of these services. It draws on a qualitative study of Russian-speaking migrants in Finland and highlights the obstacles that prevent or burden their access to social protection, which include requirements such as digital skills and administrative literacy.	Russian-speaking people of various ages in Finland	Qualitative research. The author conducted the participant observation (approximately 100 hours) during the workshops that were followed by interviews in Russian with attendants individually (n=20).
13	Kouvonen, A., Kemppainen, L., Ketonen, E., Kemppainen, T., Olakivi, A. & Wrede, S., 2021 Digital Information Technology Use, Self-Rated Health, and Depression: Population-Based Analysis of a Survey Study on Older Migrants	Finland	Manual Search	This study aimed to investigate the associations between different indicators of health and different dimensions of digital information technology (DIT) use in older migrants. The study found that depressive symptoms and poor self-rated health were associated with a lower likelihood of DIT use, including daily internet use, smartphone ownership, and social media use. The study highlights the need for further longitudinal research to determine the direction of these relationships.	Russian-speaking adults aged 50 years or older residing permanently in Finland	A quantitative study. Data collected by a postal survey.

Appendix 2. Analysis: The causes of digital exclusion of immigrants in digital welfare services

The causes of digital exclusion of immigrants in welfare services			
Findings from the articles (numbers refers to the number of the article, see Appendix 1)	Synthesized results	Subgroups	Groups
Hardships with understanding the online forms in the Finnish language (1)	Local language competency (1) (2) (3) (4) (5) (6) (7)	Language skills	Skills and knowledge
Lack of local language skills (2)			
Poor local language competency (3)			
Norwegian language proficiency (4)			
Inadequate local language skills (5)			
Language barriers (6)			
The impossibility of understanding French or a language shared with the health care professional (7)			
Urdu literacy (4)	Limited first language competency (4)		
No support in languages other than Finnish or Swedish - - is offered digitally or by telephone (12)	No support in languages other than local languages (12)		
Not all the women we met could read (7)	Illiteracy (7)		
Insufficient knowledge about the service (1)	Insufficient knowledge about		
Unfamiliarity with the social welfare benefit system (2)			

In a centre where women with limited French proficiency take courses, none of the women had had access to IMA contact - - and none seemed to know about this possibility (7)	the service, structure and system (1) (2) (7) (11)	Service knowledge and service-specific literacy	
The degree of frustration may be correlated with how well an individual understands the Swedish system and context (11)			
(Public services) required different levels of administrative literacy - - bureaucratic literacy and structure knowledge of the public organisations have been present (in the interviews) (12)	Administrative literacy, bureaucratic literacy and structure knowledge (12)		
The use of digital services - - require mastering of specific administrative and medical vocabulary (5)	Administrative and health literacy (5)		
Low health literacy (3)	Low health literacy (3) (6)		
Low health literacy (6)			
Weak digital skills (2)	Weak digital skills (2) (4) (12)	Digital skills	
Digital skills (4)			
Digital skills played a pivotal role in using digital public services (12)			
Lacked the - - e-literacy skills (7)	Lack of e-literacy (7) (11)		
Less digitally literate (11)			
Assistance for people who cannot use digital public services independently exists primarily outside the official services (12)	No assistance for digital solutions inside the services (12)		
Low education (3)	Low education level (3) (4) (11)	Individual characteristics	Individual characteristics
Education level (4)			
Less well-educated			

refugees (11)			
Being a first generation migrant (3)	First generation migrants (3)		
Shorter length of residence (4)	Shorter length of residence (4)		
Lower socio-economic position (2)	Lower socio-economic position (2)		
Income comfort (9)	Income comfort (9)		
Higher age (2)	Being an older migrant (2) (3) (11)		
Older age (3)			
Older (notably 50+) (11)			
Poor self-reported health (3)	Poor self-reported health (3)		
Depressive symptoms - and poor SRH - were associated with a higher likelihood of not using the internet daily (13)	Poor self-rated health and depressive symptoms (13)		
Cognitive decline (2)	Cognitive decline (2)		
A voluntary choice to remain a non-user (1)	A voluntary choice to remain a non-user (1) (7)	Motivation and attitudes	Motivation and attitudes
Other women or parents tended to communicate through IMA only on rare occasions as they did not feel the need to (7)			
Fear of making mistakes (2)	Fear of making mistakes (2) (5)		
Fear of making mistakes (5)			
The central personal reasons for disengagement from digital services included laziness, fears, conservatism, feelings of distrust, and previous non-digital routines and habits. (1)	Laziness, fears, conservatism, feelings of distrust, and previous non-digital routines and habits (1)		
Did not want to interfere	Don't want to		

with their (carer's) private life (7)	interfere with professionals' private life (7)		
A perception of decreased service quality or insufficient communication (10)	A perception of decreased service quality or insufficient communication (10)		
Concerns about data protection and privacy (10)	Concerns about data protection and privacy (10)		
The breaching of the public/private divide in service delivery (10)	The breaching of the public/private divide in service delivery (10)		
Did not have personal online banking codes (1)	No personal online banking codes or an e-ID (1) (5)	Access to ICT	Access to ICT
The lack of strong e-identification (5)			
Lack -- access to technology (6)			
The lack of reliable or consistent access to technology or the internet (10)			

Appendix 3. Analysis: The effects of digital exclusion on immigrants using digital welfare services

The effects of digital exclusion on immigrants using digital welfare services			
Findings from the articles (numbers refers to the number of the article, see Appendix 1)	Synthesized results	Subgroups	Groups
Risk of being unable to access the public services (1)	Risk of being unable to access the public services (1)	Less access to the services	Exclusion from the services
Likely to remain excluded from the services - - access barriers are heightened (2)	Exclusion from the services in general and access barriers heightened (2)		
Challenges in migrants registering with, and accessing, primary care (6)	Challenges in migrants registering with, and accessing, primary care (6)		
This situation may contribute to unequal access to IMA services by women during the postpartum period, as the professionals do not always react to some women's lack of engagement with IMA mediated communication. (7)	Immigrants get less additional service resulting in unequal access to IMA services (7)	Less additional services and networks	
Lack personal and professional networks (11)	Lack personal and professional networks (11)		
Difficulties building trust (6)	Difficulties building trust (6)	Decreased trust in the services	
Decrease service users' trust and comfort with the process - - lack of service user engagement (10)	Decrease service users' trust, comfort and engagement with the process (10)		
Seek third-sector	Seeking help from		

assistance for accessing public services - - digital support provided by family members or friends (2)	third-sector organisations and social network (2) (3) (12)	Turning to outside help	Turning to outside help
Relying on the help of family members, friends, acquaintances as well as non-governmental organisations (3)			
Social networks and third sector organisations were valuable facilitators of access to digital public services (12)			
Anxiety and stress (1)	Anxiety and stress (1)	Decreased well-being	Decreased well-being
Sisabling, even disempowering, consequences (2)	Disabling, even disempowering consequences (2)		
Extensive queuing, which when done by phone may involve high costs (2)	Extensive queuing and high costs (when done by phone) (2)	Time consumption and costs	Time consumption and costs

Appendix 4. Analysis: Improvements of digital welfare services to provide immigrants with accessibility to the services

Improvements of digital welfare services to provide immigrants with accessibility to the services			
Findings from the articles (numbers refers to the number of the article, see Appendix 1)	Synthesized results	Subgroups	Groups
Multiple language options for website text and help menus (1)	Multiple language options for website text and help menus (1)	Language provision	Service design
All of the online forms in plain Finnish (1)	Plain Finnish (1)		
Providing health information in different languages (3)	Providing health information in different languages (3) (4) (6)		
Easy-to-read, culturally appropriate health information in their own language (4)			
Clear, concise, and language-specific written and non-written resources needed to be developed (6)			
More personalised support and opportunities to get instant help in their language (12)	More personalised support and opportunities to get instant help in their language (12)		
Simplicity, usability, and reliability of online content (1)	Simplicity, usability, and reliability of online content (1)	Content design	
Non-French speaking immigrant women need tailored information (7)	Tailored information for immigrant women (7)		
Enhancing the capacity and IT competency of newcomers (3)	Enhancing the capacity and IT competency of		

	newcomers (3)	Digital support	Digital support
The public service organisations need to provide the (digital) support themselves (2)	Digital support in the services (2)		
Workshops and courses oriented on developing the language and digital skills as well as those that advise on digital services is also essential (1)	Workshops and courses about the language, digital skills and digital services (1)		
ICT education should be tailored and integrated into existing social services (8)	ICT education tailored and integrated into social services (8)		
Availability of formal advisory services both remotely and in-person (1)	Availability of formal advisory services both remotely and in-person (1)	Multi-channel services	Multi-channel services
Need for securing the possibility to access public services in person (2)	Offering face-to-face services (2) (5)		
Traditional face-to-face health services will continue to be important and should still be maintained (5)			
Migrant communities and their institutions to codesign solutions (6)	Migrant communities and their institutions to codesign solutions (6)	Pre-planning the services	Pre-planning the services
Health and social welfare policies need to absorb digitalisation to work for its goals, i.e. social inclusion and equity (2)	Health and social welfare policies need to absorb digitalisation to work for its goals, i.e. social inclusion and equity (2)		
Evidence-based digital inclusion strategies and policies (13)	Evidence-based digital inclusion strategies and policies (13)		
Health professionals play a vital role in showing the benefits of the PHR and in	Encouragement to use the digital services (9)		

offering encouragement to individual (9)			
Provide universal PHR access on an opt-out basis, with a possibility to close or permanently delete the PHR at any time (9)	Provide digital services with an option to close or permanently delete the PHR (9)	Motivating the users	Motivating the users