

***A Braive* new world: How technology can transform access to mental health care**

*A qualitative case study of how a Norwegian community mental health center
implemented a digital psychotherapy service*



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Abstract

Anxiety and depression are considered one of the main contributors to the burden of disease worldwide. In Norway, about half of the population suffers from mental health problems. The latter makes mental health illnesses one of the country's most expensive health-related challenges, resulting in several direct and indirect consequences for both the individual and society. Despite psychotherapy and psychopharmacology, a substantial proportion of people suffering from mental health problems go untreated. The recognized obstacles in the current landscape are (1) individuals' barriers to seeking help related to stigma, negative perception of psychiatric treatments, physical challenges, and (2) systemic barriers such as long waiting lists and staff shortage.

In light of these developments and the occurrence of Covid-19, the adoption of technology in mental healthcare is increasingly viewed as a solution to (1) help overcome individuals' barriers and (2) expand access to mental health treatments. However, albeit the growing evidence of digital psychotherapy's clinical effectiveness, the journey from successful clinical results to successful organizational implementation is less travelled.

The present study embodies a qualitative case study of how the Oslo-based Lovisenberg Community Mental Health Center implemented an externally developed digital psychotherapy service named Braive. Through exploring the relevant process in light of organizational innovation theories, this study aims to shed light on how organizational factors such as "management support", "champion(s)", and "innovation-values fit" influence the progressing implementation process.

Through qualitative in-depth interviews with central actors involved in the local implementation process, this study provides insights on how the implementation of Braive has been and still is a dynamic process involving various organizational adjustments, challenges, and setbacks. Findings indicate that the combination of an early management commitment and advantageous external policy developments have been essential preconditions. Findings also show the importance of facilitating a climate for implementation that includes clearly stated goals and intentions, supportive implementation practices and policies, and a champion's presence.

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Yue Yu Yang, Oslo, December 2020

List of abbreviations

ALEC	Adjusted Level of Effective Care
ABF	Activity-Based Funding
BAF	Basic Annual Funding
CBT	Cognitive Behavioral Therapy
DRG	Diagnosis-Related Group
E-Therapy	Electronic Therapy
GP	General Practice Doctor
ICT	Information and Communications Technology
IP&P	Implementation Policies and Practices
MoH	Ministry of Health and Care Services
NDH	Norwegian Directorate of Health
NIPH	Norwegian Institute of Public Health
NPA	Norwegian Psychological Association
RHA	Regional Health Authorities
SSG	Special Service Group
VR	Virtual Reality

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1 INTRODUCTION

From Face Timing your doctor to being interviewed for a job on Zoom, or even finding your next lifetime partner through an app, the way we communicate with each other is evolving. In 2020, digitization impacts almost every aspect of our society, including the *delivery* of mental health treatment (Oh et al., 2005; Peterson et al., 2016). As screen time has become an integrated part of our everyday life, the previously offline-only sectors, such as mental healthcare, are set to bloom (Hollis et al., 2015; Oh et al., 2005). The National Health Service (UK) reported that at the end of 2019, over 300,000 citizens suffering from anxiety and depression in the UK received therapy through *internet-based treatment programs* (Owen, 2019; Philar, 2020). The latter is a novel treatment category, often referred to as *Digital psychotherapy*, *Telepsychiatry*, or *E-therapy* (Andersson et al., 2016).

Regardless of the terminology used, digital psychotherapy involves delivering mental health treatment through devices that have been ever-present for more than a decade. Just as how you sign into your Facebook account, you can now enter an e-therapy platform and engage with a variety of evidence-based material, repackaged as videos, texts, and tasks, intended to be there for you – *wherever and whenever*. In other words, digital psychotherapy differs from video-consultations, as digital psychotherapy requires users to complete the condition-specific treatment programs independently without a psychologist present. During *self-guided* treatments, professional supervision is generally provided as text-based feedback or telephone conversations. Moreover, depending on the type of condition and users' needs, some treatment courses also take the form of *blended treatment*, where internet-based treatment programs are combined with traditional face-to-face counseling (Aguilera, 2015; Andersson et al., 2016; Hollis et al., 2015).

Although skepticism towards such a treatment format still exists, outcomes from several randomized control trials¹ show that self-guided digital psychotherapy can significantly reduce anxiety and depression symptoms. Moreover, some studies also demonstrate that blended treatments can be equally sufficient as face-to-face counseling (Andersson et al., 2014; El Alaoui et al., 2015; Karyotaki et al., 2017; Nordgreen et al., 2016; Olthuis et al.,

¹ In clinical research, randomized controlled trials (RCT) are the standard research method used to investigate new treatments' efficacy and safety. With the introduction of a new treatment method, RCTs' results function as the foundation for governmental approval decisions. (Kabisch et al., 2011).

2016). Subsequently, digital psychotherapy is perceived as a solution to broaden mental healthcare access (Andrade et al., 2014; World Health Organization, 2013).

Despite the professional acknowledgment and strong political support (Peterson et al., 2016; The Ministry of Health and Care Services, 2019; WHO, 2013), the journey from promising clinical results to successful implementation appear to be more puzzling (Folker et al., 2018; Nolte, 2018). The current body of research on the innovation-to-implementation gap represents a multi-level approach that analyzes both clinical effects on different patient groups; the technology itself; and the broader healthcare system's influence on such implementation process (Andersson et al., 2019; Hadjistavropoulos et al., 2017; Kadesjö Banck & Bernhardsson, 2020). While these research contributions enrich the understanding of the magnitude of factors involved in the implementation process, descriptions of the particular *human aspects* seem somewhat fragmented (Brooks et al., 2011; Helfrich et al., 2007). Against this backdrop, the present study aims to devote attention to the organizational factors argued to be essential in such an implementation process. Next, I present the specific research question guiding this thesis.

1.1 Research question

Based on the mission to explore organizational factors involved in digital psychotherapy's innovation implementation process, the present study embodies a qualitative case study of how the Norwegian Lovisenberg Community Mental Health Center (Lovisenberg distriktpsykiatriske senter) implemented an externally developed digital psychotherapy service, Braive. Based on the literature review and the identified knowledge gap, this thesis draws upon theories from the discipline of innovation to further illuminate the unit of analysis. The overarching research question of the present study is:

How do organizational factors influence a digital psychotherapy service's implementation process in a Norwegian community mental health center?

Based on the theoretical framework developed in Chapter 2, additional sub-questions will appear. Next, I elaborate on the specific goal and perceived relevance of this study.

1.2 Goal and relevance

It is of desire that this thesis represents both a theoretical and applied relevance. Firstly, concerning the theoretical relevance, the respective study attempts to contribute to the understanding of telepsychiatry innovations in the context of mental healthcare. As briefly touched upon in the introduction, we are starting to grasp this field better. Research on the clinical effectiveness of such treatment method is growing (Andersson et al., 2014; El Alaoui et al., 2015; Karyotaki et al., 2017; Nordgreen et al., 2016; Olthuis et al., 2016) in line with research concerning the many systemic and technical aspects involved in such implementation process (Andersson et al., 2019; Hadjistavropoulos et al., 2017; Kadesjö Banck & Bernhardsson, 2020). Moreover, some studies give particular attention to the organizational aspects too, by commonly identifying organizational “facilitators” and “barriers”, such as technical knowledge; management support; staff involvement; and employee training (Barnett et al., 2011; Kimberly & Cook, 2008; Seffrin et al., 2008; Van der Vaart et al., 2019).

However, to my understanding, these findings have rarely been further discussed in light of innovation implementation theories that facilitate a richer investigation of, for example, the *interrelations* between these factors; how these factors influence the implementation beyond supporting or constraining the process; and whether some factors appear more important than others (Helfrich et al., 2007; Klein & Sorra, 1996; Knight & Klein, 2005). Subsequently, this thesis’ main theoretical drive is to explore how grounded innovation implementation theories can illuminate the anticipated organizational factors and their interrelations in such an implementation process.

Secondly, concerning the applied relevance, mental healthcare is expected to witness an increased digitalization in the years to come (Hollis et al., 2015; The Ministry of Health and Care Services, 2019; World Health Organization, 2013). Psychologists and patients alike state that accessibility, distance, time, and costs, are some of the reasons they choose to seek digital treatment options (Andrade et al., 2014; Melby et al., 2019; OECD, 2018). Moreover, the latest to be added to that list is the Covid-19 pandemic (Kannarkat et al., 2020; Laukli, 2020). Around March 2020, Covid-19 catalyzed a digital acceleration in the traditional counseling practice, where psychological consultations hold an “almost sacred place in the doctor-patient relationship” (Torous et al., 2020). When face-to-face therapy became near impossible, the numbers of clinical video-consultations *and* digital psychotherapy treatments increased

considerably (Kannarkat et al., 2020; The Norwegian Board of Technology, 2020). In this sense, one can perceive that the digitalization within mental healthcare went from an *opportunity* to a *necessity*. To date, it is challenging to predict how long the Covid-19 pandemic its impacts will last. However, these events have shown that the mental healthcare too, is capable of rapid adaptation and change (Kolseth et al., 2020). Against this backdrop, I believe that it is both interesting and critical to understand the growing utilization of digital services within mental healthcare.

1.3 Delimitation

Before revealing the rest of this thesis, I believe that it is appropriate to establish a common understanding of the present study's delimitation.

Firstly, the time frame of interest is between 2018 and 2020, as Lovisenberg's initial experience with implementing digital psychotherapy started in 2018. Secondly, this thesis does not focus on the technical aspects of the given digital psychotherapy service, nor will the role of the external service provider be discussed to the same extent as the organization in which the innovation has been implemented. However, a short description of Braive is provided, as the latter is perceived as necessary for the research context. Thirdly this study's voices are mainly a combination of perspectives held by actors in the management group and the practitioners at the respective center. Furthermore, I would like to emphasize that I have carefully chosen not to include patients in the subject sample. The reasons for the latter are detailed in Chapter 3, *Methodology and research approach*. However, patients' experience with Braive as perceived by the included participants will be mentioned where it is perceived purposeful. Finally, I would like to highlight that it is not the intention of this thesis to *evaluate* the implementation process at Lovisenberg, as the focus is to use the respective case as an arena to *explore* the interrelations between the anticipated organizational factors.

1.4 Structure of thesis

Chapter 1 has outlined the research topic, followed by the research questions and this thesis' goal and relevance. In addition, a presentation of this thesis' delimitation took place.

Chapter 2 present the theoretical framework for this study, starting with introducing central views represented by chosen innovation literature branches. Next, this chapter presents *The Conceptual Framework of Complex Innovation Implementation*. The theoretical

understandings presented in this chapter influence the establishment of three other research questions towards the end of the chapter.

Chapter 3 details the research background and the chosen case.

Chapter 4 discusses this thesis' methodology and research approach and the central choices made in the research process to enhance the present study's trustworthiness.

Chapter 5 presents the empirical findings that resulted from the data analysis. This chapter is divided into three main parts – *Preconditions*, *Organization*, and *Using the service*.

Chapter 6 discusses the empirical findings in light of the theoretical framework and research questions.

Chapter 7 summarizes the main findings from this thesis, followed by implications for practice and a discussion of this thesis' limitations and future research suggestions.

Finally, references and appendix take place.

2 THEORETICAL FRAMEWORK

This thesis takes place within the realm of innovation studies. The following chapter presents the theoretical foundation for the analysis of the empirical data. Firstly, a general understanding of innovation is established, followed by a brief introduction to public sector innovation and how innovation can be understood in the healthcare context. Secondly, I elaborate on the process perspective of studying innovation. Thirdly, I present the specific aspect of the innovation process of primary interest – namely, the implementation process. Finally, I introduce the so-called *Conceptual Framework of Complex Innovation Implementation*, followed by explaining how this thesis will utilize the included theories to analyze the empirical data.

2.1 Innovation studies

2.1.1 Defining innovation

“From the germ of an idea to its impact on society, innovation is a source of transformative change. Innovation serves as an engine of growth for firms, as a catalyst for regional development, and as the basis for the comparative advantage of nations” (Garud et al., 2013, p. 774).

This short yet extensive definition provided by Garud and colleagues (2013) mirrors the breadth of innovation insights accumulated over time. The innovation literature has a firm root in economics, previously dominating in business, technology, and manufacturing industries. The economist Joseph Schumpeter is stated as a leading contributor to the development of the respective field. Schumpeter promoted an understanding of innovation as “the craft of combining existing resources to create new or improved products, processes, or ways of solving challenges” (Fagerberg et al., 2006, p. 6). However, the idea of “new” is always relative. An innovation, whether a product, a service, or a new business model, can be experienced as “new” for a given unit even if it already exists in other contexts. Besides, the novelty-feature is also key to any *inventions*. Conversely, innovation scholars distinguish between “to invent” and “to innovate”. While the *invention* is conceptualized as the birth of a brand new technology, good, or product – *innovation*, on the other hand, is often theorized as the process of carrying new ideas out in real life circumstances (Fagerberg et al., 2006; Kline & Rosenberg, 1986).

Speaking of value, the benefits of innovations has traditionally been measured in terms of economic value. However, newer contributions in the innovation literature have stressed the meaning of innovation in fostering *social values*. In line with the latter, scholars acknowledge that innovation takes place in the public sector too, for the sake of addressing the various economic and societal challenges we face today (e.g., climate change, poverty, and education) (Albury, 2005; Bloch & Bugge, 2013). The health sector serves as a fine example of the latter, as the health field places the goal of improving citizens' well-being high on the agenda and produce significant value to the society as a whole (Thune & Mina, 2016; Wass & Vimarlund, 2016). Inspired by the perspectives on public sector innovation and the growing body of research emphasizing healthcare as a noteworthy arena for studying innovation, the next sub-section further details the latter's theoretical underpinnings.

2.1.2 Public sector innovation and the healthcare sector

This sub-section's starting point of understanding innovation is inspired by Bloch and Bugge's (2013) contribution. According to these authors, an essential characteristic of public sector innovation is *service* innovation, as most public organizations provide some kind of services to the community. Service innovation can include improving the *quality* of services, new ways of *delivering* services, or creating more *customized* services tailored to different groups of users (Bloch & Bugge, 2013, p. 14; Wass & Vimarlund, 2016).

While the idea of service innovation is prevalent in the private sector too, there is however a factor that distinguishes these sectors. Broadly speaking, the market does not drive public sector services to the same extent as private sector services. The rationale behind public sector services can be understood as more about achieving specific *societal missions* rather than financial profit (Bloch & Bugge, 2013). How can this be understood in the context of healthcare?

Medical research and studies on human health have existed for many decades, and the highly professional health sector offers services that, in one way or another, affects us all. Today's modern hospital and other healthcare organizations and healthcare providers, are perhaps one of the most knowledge-rich and science-based institutions (Berwick, 2003). Moreover, they bear a mission to maintain welfare services and develop better public health (The Ministry of Health and Care Services, 2019; Thune & Mina, 2016). Against the backdrop of a higher life expectancy, new types of conditions, and increased expectations among citizens, significant

pressure is put on the health sector to adapt, improve, and develop services, processes, or products to tackle these challenges (Oh et al., 2005). In this context, innovation is increasingly viewed as a critical driving force for improving today's healthcare (Greenhalgh et al., 2004; Länsisalmi et al., 2016).

A factor that makes healthcare innovations rather unique is that all types of innovations, whether a new care delivery method or a new medical product, require solid evidence-based research to support their introduction in hospitals or other healthcare organizations (Kelly & Young, 2017). Consequently, the introduction of healthcare innovations is, in most cases, regulated by scientific evidence, policies, and laws (Länsisalmi et al., 2016).

To conclude this section, I present a definition of healthcare innovation formulated by Greenhalgh and colleagues (2004):

“A novel set of behaviors, routines, and ways of working that are discontinuous with previous practice, are directed at improving health outcomes, administrative efficiency, cost effectiveness, or users' experience and that are implemented by planned and coordinated actions” (Greenhalgh et al., 2004, p. 582).

The above definition captures the three most common characteristics of innovation: (1) novelty or improvement, (2) change, and (3) intended benefit. In addition, this definition by Greenhalgh and colleagues (2004) indicates that healthcare innovation can be understood as an organizational act – “behaviors and routines”, “planned and coordinated actions”.

Planning, changing, and coordinating can eventually be understood as a process. To be more specific – many processes within a process. As briefly mentioned throughout this chapter, innovation scholars emphasize the particular *process* behind turning ideas into innovations. The next sub-section detail what is meant by a process perspective of understanding innovation.

2.1.3 Innovation as a process

Building upon Schumpeter's work, Schmookler (1996) and Crossan and Apaydin (2010) propose a distinction between understanding innovation as a *process* and understanding innovation as an *outcome*. Researchers that study the innovation outcome often concern how

the innovation is received in the market and focus on features such as the impact or the diffusion of innovation (Crossan & Apaydin, 2010). On the other hand, innovation scholars argue that it is equally important to pay attention to the process in which innovation takes form. A common inquiry among innovation scholars is *how* some inventions, over time, are turned into products or services with economic benefits or social value (Garud et al., 2013; Tidd & Bessant, 2018; Van de Ven, 1986, 2017). Hence, many innovation scholars argue that it is valuable to study the particular *route* of proceeding from the initial idea to the final end-product.

Furthermore, it is worth mention that a significant shift in the perception of the innovation process has nonetheless discharged the former view of the process as a linear development, where stages of research, development, production, and marketing evolve in rigorously arranged sequences. Scholars such as Kline and Rosenberg (1986) as well as Van de Ven and Poole (1990) have contributed significantly to the conceptualization of innovation processes as “complex” and “dynamic” journeys, going through repeated cycles of testing, failing, and learning. In addition, as promoted by scholars such as and Rogers (2003) and Greenhalgh and colleagues (2004), *implementation* is nonetheless an essential part of the innovation process. The next-sub section explains how implementation can be understood from an innovation perspective.

2.1.4 Implementation as part of the innovation process

First, let us establish the theoretical difference between *adoption* and *implementation*.

Adoption refers to the decision, typically made by senior managers, that the organization is going to use the innovation (Rogers, 2003, p. 436). On the other hand, *implementation* includes the “transition period in which targeted members become increasingly skillful, consistent, and committed in their use of an innovation” (Klein & Sorra, 1996, p. 1057). In this sense, the decision to adopt an innovation can be perceived as part of the implementation process, but the latter put emphasis on what happens *after* the decision.

The particular decision of innovation adoption is further believed to be influenced by assessments of the given innovation’s *relative advantage*. For instance, as stated by Rogers (2003) and supported by Greenhalgh and colleagues (2004), innovations that are perceived to contain a clear advantage in terms of organizational efficiency or cost-effectiveness are more “easily” adopted by the entity’s decision-makers. However, despite the decision “to adopt” –

“to implement” on the other hand, is recognized by innovation scholars as a common organizational challenge as there are many cases where employees use the adopted innovation less regularly, or less consistently than anticipated or required (Greenhalgh et al., 2004, p. 582). A metaphorical question that stresses the importance of what comes after the adoption is proposed by Klein and Knight (2005): “After all, how physically fit can you get if you buy a top-of-the-line exercise bike or treadmill but never use it?”. In theoretical terms, the latter is referred to as *implementation failure* (Klein & Sorra, 1996).

Given the definitions presented so far, adopting innovation is not sufficient alone to achieve anticipated advantages of the innovation, as the latter requires targeted employees to commit to using the innovation (Klein & Sorra, 1996, p. 1055). Subsequently, the implementation process is theorized as the “critical gateway” between the decision to adopt the innovation and the process of transforming it into a routine use (Greenhalgh et al., 2004). In this sense, implementation can also be perceived as organizational member’s voyage to *acceptance* and *adaptation*, as consistent innovation use is believed to be influenced by targeted employees’ *behavior change* (Rogers, 2003). Furthermore, scholars emphasize that successful implementation requires a *collective* behavior change. According to the theory, achieving a *single* employees’ consistent use of the innovation is not likely to produce the anticipated benefits of the given innovation (Klein & Sorra, 1996; Knight & Klein, 2005).

2.1.5 Innovation implementation in the context of healthcare organizations

One of the critical barriers to innovation implementation in the context of healthcare organizations is suggested to be insufficient implementation rather than “innovation failure” (Greenhalgh et al., 2017; Helfrich et al., 2007; Klein & Sorra, 1996). For example, in a report conducted by SINTEF Digital, the authors suggest that there is currently a common trend of healthcare organizations adopting various digital innovations but experience to struggle with actually implementing it. One of the authors behind the report states that “We lack systematic knowledge about how digital interventions can be implemented in healthcare services” (Melby et al., 2019, p. 27). The latter is also recognized in various policy documents².

² See the report: “*How do we ensure that innovation in health service delivery and organization is implemented, sustained and spread?*” (WHO, 2018).

See the White Paper: “*Meld.St.7 (2019-2020) National health – and Hospital Plan 2020-2023*” (MoH, 2019).

Similarly, findings from several empirical studies on healthcare organization's adoption and implementation highlight that the innovation challenges are "organizational, not just clinical" (Ramanujam & Rousseau, 2006). Based on the theoretical foundation presented so far, I argue that it is purposeful to regard the implementation process of Braive at Lovisenberg Community Mental Health Center as an organizational issue. To summarize, there are mainly three key reasons that this thesis chooses to apply an organizational-level perspective to explore the present case.

Firstly, healthcare organizations and community mental health care centers alike typically showcase what Rogers (2003) conceptualize as an "authority-based innovation-decision process". Secondly, the hierarchical structure and labor division in healthcare organizations embody a diversity of professions with different areas of responsibilities. Consequently, I argue that the latter generates interesting organizational dynamics that are relevant to shed light on when studying the process of implementing a digital psychotherapy innovation. Thirdly, as emphasized by scholars such as Greenhalgh and colleagues (2004), and Helfrich and colleagues (2007), implementing innovation is a *joint effort* by the relevant organizational members. Hence, when collective use of innovation is vital for achieving collective benefits, I believe it is valuable to understand the present study's case by exploring the respective innovation implementation process from an organizational-level perspective.

So far, I have introduced some of the significant developments within the field of innovation, highlighting that the theoretical understanding of innovation has evolved to cover various aspects of our society, including the public sector and healthcare organizations. In addition, I have emphasized that innovation can be understood as an organizational activity and that producing value, whether economic or social, is seldom a one-time event. Furthermore, I elaborated on implementation as an essential part of the innovation process. The latter is theorized as the "critical gateway" between adopting an innovation and achieving targeted employees' committed use. Finally, I detailed why this thesis chooses to investigate the present case from an organizational-level perspective. The next sub-section introduces the *Conceptual framework of Complex Innovation Implementation* (Helfrich et al., 2007) that explain how organizational factors influence the implementation process.

2.2 The Conceptual Framework of Complex Innovation Implementation

The Conceptual Framework of Complex Innovation Implementation (Helfrich et al., 2007), can be understood as a *determinant framework* that illustrates various components (determinants) assumed to influence both the organizational implementation *process* and the organizational implementation *outcome*. Before I present the different determinants stressed in the respective framework, I would like to acknowledge that there is a realm of other determinant frameworks developed and applied to both analyze, evaluate and prepare for implementation processes in healthcare organizations.

Some widely recognized frameworks include the *NASSS* framework developed by Greenhalgh and colleagues (2017), which represents a “whole system” approach involving multiple levels of analysis ranging from the technical aspects of the given innovation; to patient’s condition; clinical evidence; political circumstances; and characteristics of the given healthcare organization. Another example is the *CFIR* framework established by Damschroder and colleagues (2009) that emphasize both the given innovation, the organization’s outer setting (e.g., policies and peer pressure) and the organization’s the inner setting (e.g., organizational structure and organizational culture). Finally, the *FITT* framework advanced by Ammenwerth and colleagues (2006) is a framework that specifically consider *Information and Communication Technology* (ICT) based healthcare innovations and conceptualizes the “match” between tasks, the given technology, and the targeted individuals (employees who are going to use the given innovation). These frameworks have been emphasized by researchers in multiple case studies of healthcare innovation implementations, such as the implementation of an internet-based treatment program for insomnia patients (*NASSS*) (Kadesjö Banck & Bernhardsson, 2020), a mobile-phone-based telemonitoring program for heart failure patients (*CFIR*) (Ware et al., 2018), and an HIV self-management app (*FITT*) (Cho et al., 2019).

In my view, the frameworks mentioned above reflect the reality of healthcare innovation implementation processes well by emphasizing multiple aspects that a healthcare organization are likely to encounter in the implementation process (Melby et al., 2019; Nolte, 2018; Peterson et al., 2016). This thesis has been inspired by the theoretical conceptualization of implementation processes emphasized in both the *NASSS* (Greenhalgh et al., 2017), *CFIR* (Damschroder et al., 2009), and *FITT* framework (Ammenwerth et al., 2006). However, I have chosen to make room for the Conceptual Framework of Complex Innovation

Implementation (Helfrich et al., 2007) as the main inspiration for constructing this thesis' analytical framework. The latter framework is viewed as suitable for the present study because:

- It is concentrated on the *organizational* level.
- It facilitates a richer investigation of the interrelationships behind *organizational* factors.
- It considers the implementation process as *innovation specific*.

These three factors are understood as appropriate for this thesis' main research question and the stated delimitation in section *1.3 Delimitation*.

Finally, the following sub-sections elaborate on the determinants included in the respective framework developed by Helfrich and colleagues (2007), based on previous work by Klein and Sorra (1996). The present framework conceptualizes the collective effort to *maintain* employees' use of an innovation as the ultimate organizational challenge of innovation implementation, whether it is a new or improved service, product, or practice. Overcoming this challenge result in what the respective scholars call *Implementation effectiveness*. The latter is theorized to be determined by the given organizations' *Implementation climate*, which in turn, is believed to be influenced by *Innovation-values fit*, and in the context of healthcare organizations – the presence of a *Champion*. Furthermore, this framework emphasizes that achieving implementation effectiveness is additionally determined by *Management support*, particularly management's ability to mediate sufficient *Implementation policies and practices*. The latter is believed to be affected by *Financial resource availability* (Helfrich et al., 2007; Klein & Sorra, 1996). Figure 1 illustrates the relevant framework.

Conceptual Framework of Complex Innovation Implementation

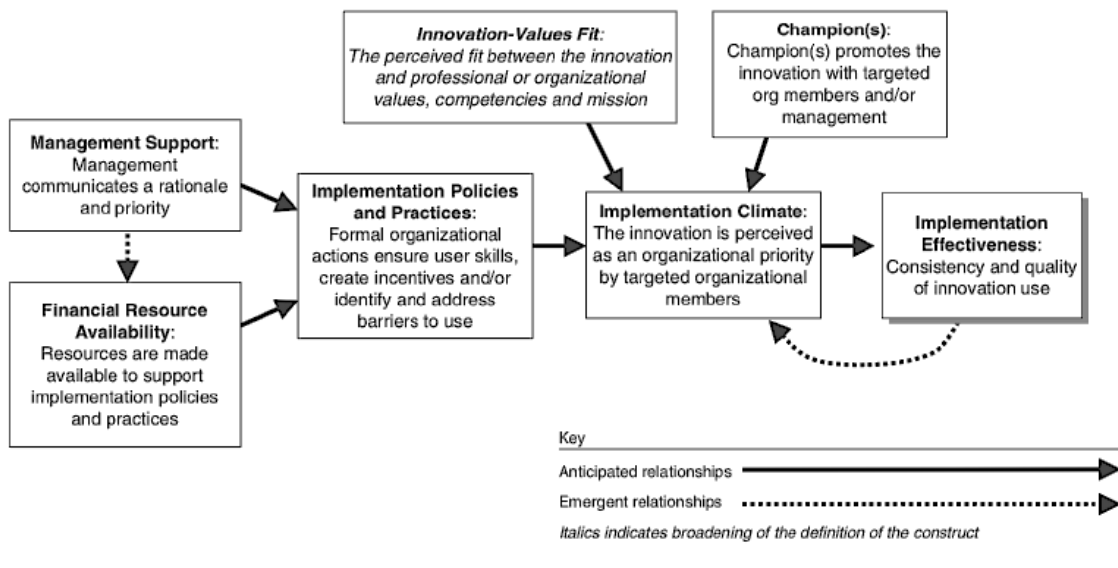


Figure 1. Conceptual Framework of Complex Innovation Implementation (Helfrich et al., 2007).

2.2.1 Management support

Management support in the context of innovation implementation is broadly defined as “the managers’ commitment to conduct transformation of the organization invest in quality implementation policies and procedures to implement the innovation” (Helfrich et al., 2007, p. 283). Alongside this definition, the management group at a community mental health center that typically includes psychological advisor/medical leader, clinic executive, and unit managers can be understood as *change agents*. Rogers (2003) recognizes the latter as individuals who have the formal authority to direct and guide organizational change; in this case, the introduction and integration of an externally developed service innovation – Braive. In the local context at Lovisenberg, implementing Braive implies changing the usual way of delivering mental health treatment.

The management’s role, power, and behaviors in managing innovation processes is a widely covered topic within the innovation literature (Ahuja et al., 2008; Garud et al., 2013; Tidd & Bessant, 2018). Moreover, precisely how the management group function as change agents and commit to innovation implementation can be explained through three common behaviors (Birken et al., 2013, 2015):

1. **Task behaviors** refer to the management's coordination and supervision of necessary activities for achieving the anticipated objectives. In practice, this can relate to being clear about the expected goals and responsibility.
2. **Relations behaviors** refer to the managements' empowerment of targeted organizational members to perform ascribed tasks or activities. In practice, this can relate to the mediation of implementation policies and practices (IP&Ps), as emphasized in the definition of *management support* by Helfrich and colleagues (2007).
3. **Change behaviors** refer to the management's promotion of "supportive perspectives" that encourage personal and organizational change. In practice, this can relate to conviction or demonstration of how the IP&Ps related to the implementation process can enhance the professional growth and organizational performance.

Middle managers' role is increasingly viewed as a vital role in healthcare innovation implementation processes (Birken et al., 2013; Moullin et al., 2018; Weintraub & McKee, 2018). Middle managers can be understood as the individuals who continuously moderate between the role as a *leader*, as part of their responsibility is to supervise frontline employees, and the role as a *follower* as the organization's executives supervises them. This "unique" position of middle managers is conceptualized by Birken and colleagues (2013) as a "strategic location", and the respective authors argue that middle managers:

"(...) bridge informational gaps when they commit to innovation implementation. Middle managers may express commitment to innovation implementation by giving employees information regarding innovation implementation, making it relevant to them, giving them the tools necessary to implement the innovation, and encouraging them to use those tools" (Birken et al., 2013, p. 31).

To summarize, change agents, including middle managers, can affect the implementation process by a combination of:

1. Establishing and communicating precise tasks, expectations, and responsibilities.

2. Encouraging employees to use the innovation by mediating supportive policies and practices.
3. Disseminating information about how the implementation can contribute to professional growth and organizational performance.

2.2.2 Financial resource availability

Financial resource availability in the context of innovation implementation relates to the economic incentives that support those financially dependent implementation resources such as obtaining new personnel; employee training; user support; seminars; or “relaxing performance standards while employees learn to use the innovation” (Knight & Klein, 2005, p. 245). Moreover, Helfrich and colleagues (2007) also include *potential* resources under this component. The scholars state that external pressure for change (e.g., policy change) can operate as a potential resource that can influence the implementation process. Nevertheless, scholars such as Klein and colleagues (2001) as well as Nord and Tucker (1987) argue that financial resource availability is crucial for supporting the organization’s establishment of IP&Ps.

2.2.3 Implementation policies and practices

Implementation policies and practices (IP&Ps) are defined as the policies or activities established and mediated by the management to support targeted organizational members’ innovation use (Helfrich et al., 2007). Healthcare organizations can make use of a wide range of IP&Ps to stimulate implementation practices. Some common IP&Ps in the respective context include employee training; technical assistance; accessibility of hardware and software; work structure (e.g., additional time in the work schedule to become familiar with the innovation); and management’s empowerment and support (Helfrich et al., 2007; Knight & Klein, 2005). Moreover, the conceptual definition of IP&Ps also includes promotions and financial rewards for innovation use (Klein & Sorra, 1996). However, as stated by Helfrich and colleagues (2007), promotions in terms of financial rewards are, per usual, not common in public healthcare organizations. In this setting, IP&Ps that can be perceived as rewarding include management’s recognition of work achievement, which is believed to enhance practitioners’ (frontline employees’) perception of professional autonomy (Helfrich et al., 2007).

Furthermore, scholars argue that the distribution of some high-quality IP&Ps might compensate for the absence or low-quality of other IP&Ps. For example, Weiner and colleagues (2008) stressed that, in some cases, in-person employee training might be more effective than text-based manuals of how to use the innovation. Also, it is recognized that IP&Ps are dynamic because some IP&Ps might intentionally or naturally fade when the given organization achieves the anticipated extent of innovation use. On the other hand, some IP&Ps might be prevalent in a more extended period, even if the expected objectives are achieved. Those so-called “lingering” IP&Ps are believed to “support or reinforce committed innovation use” (Weiner et al., 2008, p. 297).

Nevertheless, innovation implementation scholars argue that the more IP&Ps that are put in place, the better are the chances to stimulate implementation effectiveness (Helfrich et al., 2007; Klein & Sorra, 1996; Knight & Klein, 2005; Weiner et al., 2008). Eventually, IP&Ps is conceptualized as a component that shapes an organization’s *climate for implementation* (Helfrich et al., 2007).

2.2.4 Implementation climate

Implementation climate is distinct from what scholars define as *organizational climate* or *organizational culture*. Whereas the latter describes the general state of organizational matters, implementation climate (and IP&Ps alike), on the other hand, is viewed as innovation *specific*. Being innovation-specific means that an organization can have a solid implementation climate for one particular innovation and perhaps a weaker implementation climate for another innovation (Helfrich et al., 2007; Knight & Klein, 2005).

The innovation specific implementation climate essentially includes targeted organizational members’ *shared* perceptions of how essential or purposeful the innovation implementation is. In situations where employees, or in this case, healthcare practitioners, view the innovation implementation as a priority that is “promoted, supported, and rewarded” by the change agents, the “stronger” is the implementation climate (Klein et al., 2001, p. 813). The particular effects of “shared perceptions” are highly emphasized in the respective framework, as scholars state that the process of implementing innovation is a collective effort. Hence, implementation challenges are expected to appear if, for example, some healthcare practitioners perceive that innovation use is expected, supported, or rewarded, while others do not (Weiner et al., 2011). In other words, scholars argue that collective perceptions that

constitute the implementation climate are vital for achieving implementation effectiveness (Helfrich et al., 2007; Knight & Klein, 2005).

2.2.5 Innovation-values fit

Innovation-values fit is about whether the targeted organizational members perceive that using the given innovation will nurture, or conversely, inhibit the fulfillment of their professional values (e.g., integrity and autonomy) (Helfrich et al., 2007; Klein & Sorra, 1996). Commonly, when an organization adopts an innovation, the targeted organizational members are likely to experience uncertainty and form judgments about the extent to which the given innovation is compatible with their values (Hurst, 1982; Jalonen, 2011). One of the prevailing challenges in healthcare innovation implementation is related to practitioners or frontline employees' *resistance to change* (Greco & Eisenberg, 1993; Shortell et al., 2001). Albeit focusing on the individual level, Rogers (2003) explains that by ordinary, targeted organizational members will consciously or unconsciously assess the match between the given innovation and their existing values. Hence, the existing values that are much influenced by previously introduced ideas can, in some cases, operate as barriers to individual adoption, and in turn, organizational implementation (Rogers, 2003).

Individual variations in values always exist among organizational members. However, given the present study's interest in the *collective* effort of innovation implementation rather than individual adoption and innovation use, I emphasize instead on shared *group values*, as implementation is in this study emphasized as a "team sport" (Weiner, 2009, p. 2). Group values are defined as "explicit or implicit views shared among different groups within the same organization" (Klein & Sorra, 1996, p. 1063). Moreover, group values likely vary between different organizational groups, reflecting the "collective self-interest that the group represents" (Helfrich et al., 2007).

In situations where the given innovation represents a "good fit" with the values of one group, but a lower fit with the values of another group, Klein and Sorra (1996) propose that the consequence will most likely depend on whether "the opposing group has a formal authority over the other". For example, when innovation-values fit is strong in a *hierarchical group* (actors with decision authority) and weaker for a lower authority *functional group* (frontline employees), the respective scholars state that the hierarchical group will strengthen the implementation climate, by for example, boosting the IP&Ps. If the situation was the

opposite, it is argued that the higher authority group might destabilize the implementation climate by limiting innovation use by withdrawing IP&Ps (Weiner et al., 2008, p. 299).

2.2.6 Innovation champion

An **innovation champion** is described as “a charismatic individual who throws his/her weight behind the innovation, thus overcoming the indifference or resistance that a new idea often provokes in an organization” (Rogers, 2003, p. 414). In light of this definition, an innovation champion can be understood as an individual representing a strong innovation-values fit (Helfrich et al., 2007; Klein & Sorra, 1996).

There are substantial theoretical contributions that emphasize the importance an innovation champions’ presence in an innovation process (Howell & Shea, 2006; Markham & Griffin, 1998; Tushman & Nadler, 1986). Moreover, as stated by Helfrich and colleagues (2007) as well as Shaw and researchers (2012), an innovation champion is anticipated to be of significant importance in the highly professional health sector too. Furthermore, as elaborated by McGrath and colleagues (2018) – “E-mental health innovation requires the motivation to not only to change existing services but to use the improvements to drive future growth and developments”. In this sense, an innovation champion can be understood as crucial for enhancing group motivation to adapt to changes that come with introducing a new practice.

With this backdrop, one can view an innovation champion as a critical player in the process of integrating digital innovations within mental healthcare (McGrath et al., 2018; Nolte, 2018). The following characteristics are often assigned to an innovation champion: independent and politically engaged; enthusiastic; demonstrates a commitment to change; and capable of communicating clear visions (Howell & Higgins, 1990; Markham & Griffin, 1998; McGrath et al., 2018).

2.2.7 Implementation effectiveness

Implementation effectiveness refers to the “pooled or aggregate consistency and quality” of employees’ use of the given innovation. Eventually, the effectiveness of implementation is conceptualized as the outcome of the implementation process that is shaped by the various implementation determinants presented in this section. Thus, the respective conceptual framework illustrates that achieving employees’ consistent and committed innovation use

depends on the innovation specific implementation climate that is constructed by (a) management support, (b) financial resource availability that can facilitates sufficient (c) IP&Ps, which in turn affect employees' (d) innovation-values fit. Last but not least, Helfrich and colleagues' framework emphasize the presence of an innovation champion that is believed to increase the chances of achieving implementation effectiveness by enhancing employees' motivation and belief in the given innovation (Helfrich et al., 2007; Klein & Sorra, 1996; Knight & Klein, 2005). In the next section, I summarize the theoretical framework and present the additional research questions of this thesis.

2.3 Summary of chapter

In this thesis, I ask:

How do organizational factors influence a digital psychotherapy service's implementation process in a Norwegian community mental health center?

Based on the organizational-level understanding of innovation implementation apparent in Helfrich and colleagues' framework (2007), and supported by other innovation scholars, three additional sub-questions have emerged.

As advocated by Rogers (2003), innovation adoption is part of the implementation process. To understand the implementation process under study, I therefore believe that it is purposeful to understand which factors contributed to the initial decision to adopt Braive. By asking the following question, I aim to shed light on the rationale behind the decision to adopt the innovation – **RQ 1: Which factors affected Lovisenberg's decision to adopt Braive?**

The theory emphasizes the importance of change agents in organizing and facilitating innovation specific IP&Ps that supports the implementation process. In addition, the theory highlights the benefits of an innovation champion. By asking the following question, I aim to gain a better understanding of *how* the management and the potential champion(s) influenced the implementation process – **RQ 2: How do the management and 'champion' influence the implementation process?**

Finally, the theory conceptualizes employees as essential actors in an implementation process, as those are the people who are going to use the innovation. Hence, I am to better understand how the practitioners at Lovisenberg perceive the innovation and how they view the

implementation, by asking the following question – **RQ 3: How do practitioners’ ‘innovation-values’ fit influence the implementation process?**

As mentioned in sub-section 1.3, *Delimitation*, this thesis aims not to *evaluate* the implementation process at Lovisenberg. Nor is the focus to give any final answer to whether the respective unit has achieved implementation effectiveness or not. In other words, I do not attempt to concern the implementation *outcome* but rather the implementation *process*. Thus, the purpose of the research questions is to understand the chosen case by exploring how suggested concepts (e.g., management behaviors, champions, IP&Ps, innovation-values fit) can explain the implementation process under study. The next chapter presents the research background and case.

3 THE RESEARCH BACKGROUND AND CASE

The following chapter presents the contextual information that helps to place Lovisenberg's implementation of Braive in perspective. The first section describes how mental healthcare services are delivered in the Norwegian healthcare system, followed by explaining the prevalence of mental health disorders. Next, a presentation of the perceived potential benefits of technology takes place. Finally, I present this thesis' concrete case, including a description of the respective mental health center and the relevant innovation.

3.1 Delivery of mental healthcare

In Norway, most of the healthcare services are financed by the government. The publicly financed healthcare system can, in a broad sense, be divided into two structures: (1) The municipal *Primary Care* (Primærhelsetjenesten) is usually a citizen's "first stop" to get help with mental health concerns. The primary care includes citizen's general practice doctor³ (GP) and other healthcare providers such as nursing homes, school health centers, or low-threshold mental healthcare services such as *Rask psykisk helsehjelp* (Health Norway, 2018). (2) The *Secondary Care* or *Specialized Healthcare* (Spesialisthelsetjenesten) is underlying the four state-owned Regional Health Authorities (RHA) divided into geographic divisions (south-east, west, mid-Norway, north). Since the 2002 health reform, the RHA has been responsible for specialized healthcare including hospitals, psychiatry, and ambulant health services (Ministry of Health and Care Services, 2020b). To summarize, the municipalities are responsible for primary healthcare services, while the RHA are responsible for specialized healthcare services.

GPs function as gatekeepers for specialized health services, and accordingly, psychiatric care. Thus, if experiencing mental health problems, citizens are encouraged to contact their GPs responsible for the initial assessment of the state of condition before a *possible* referral to a specialist⁴. Norwegian psychiatric care includes many different wards, hospitals, and clinics. The outpatient⁵ community mental health centers, also known as *district psychiatric centers*

³ All citizens with a registered address in Norway's population register are entitled to a regular general practice doctor (GP) (Statistics Norway, 2020).

⁴ Citizens can also make direct contact with private practice psychologists that commonly have a shorter waiting list. The cost depends on whether the private psychologist has a contract with the public health service (Helfo, 2020)

⁵ The term "outpatient" is used to describe healthcare services that do not require patients to be hospitalized overnight (Health Norway, 2018).

(Distriktpsykiatrisk senter), play a crucial role in providing mental healthcare for the Norwegian population. Community mental health centers are usually attached to a hospital and facilitate both the diagnosis and treatment of mental health disorders (Health Norway, 2018).

3.2 Prevalence of mental health disorders

From a global perspective, anxiety and depression disorders are considered “the main contributors disease burden in both high-income and low to middle-income countries” (Folker et al., 2018; WHO, 2013). Today, about half of the Norwegian population encounter mental health problems ranging from the worries we all experience in everyday life to severe illnesses such as anxiety and depression. The current prevalence of mental health disorders makes it one of the country’s most expensive health-related challenges (Holte, 2020; Norwegian Psychological Association, 2020).

One of the problems in the current landscape are that despite the existence of (1) evidence-based psychological treatments such as *psychotherapy* – the standard form of “talk therapy” and (2) diagnose specific *psychopharmacology* (medicament), a substantial proportion of people suffering from mental health problems go untreated (Reneflot et al., 2018; Rørstad et al., 2019). From the individual’s perspective, some common obstacles to seek professional help are related to stigma, psychical challenges, and negative perception of psychotherapy and psychopharmacology (Andrade et al., 2014). Moreover, existing research emphasizes that structural barriers such as long hospital waiting lists and staff shortage are two common systemic obstacles causing the expanding treatment gap (Holte, 2006; Reneflot et al., 2018; Rørstad et al., 2019).

When it comes to societal impacts of mental health burdens, OECD data from *Health at a Glance: Europe 2018*, shows that mental illness can lead to consequences such as “lower employment rates; development of other somatic condition’s⁶; and increased homelessness and crime” (OECD, 2018). Accordingly, the Norwegian Institute of Public Health (NIPH) estimates that mental health disorders – coupled with their direct and indirect impacts, can cost the society up to several billion NOK a year (Røsjø, 2014). In light of these

⁶ *Somatic conditions* used in the context of mental health care refers to symptoms of physical dysfunctions such as fatigue, sleep deprivation; loss of appetite; and other physical pain (Kapfhammer, 2006).

developments, the Norwegian government has demonstrated a commitment to improving mental healthcare.

One of the Norwegian government's most significant measure related to mental healthcare is requiring therapists in *all* Norwegian municipalities from January 1st, 2020 (Ministry of Health and Care Services, 2018). However, both in primary care and specialist healthcare, the challenge to provide an accessible and broad enough service for mental health disorders remains (Iversen, 2018; Ministry of Health and Care Services, 2020a). For example, data from a survey conducted by NIPH show that over 50% the citizens disagree with the claim that mental health services are accessible enough (Iversen, 2018). In other words, the accessibility of today's mental health services might not match citizens' growing demands and expectations. In the wake of these trends, various technologies have been emphasized as a potential solution to both the challenge of accessibility and individuals' personal obstacles to seeking help (The Norwegian Board of Technology, 2020).

3.3 Potential benefits of technology

From March 2020 to the present date, we have seen an increased interest in digital solutions in mental healthcare (Laukli, 2020; The Norwegian Board of Technology, 2020). In light of the Covid-19 pandemic, psychologists and patients alike seem to have recognized the possibilities of technology, as in-person consultations have become more reduced due to the consequences of Covid-19 (Kolseth et al., 2020; The Norwegian Board of Technology, 2020; Torous et al., 2020).

Today, the most common technology used in mental healthcare is *video consultations*, that is, providing the same intervention *content* as in-person interventions, but in a digital video-format (Berryhill et al., 2019). The understanding of the latter treatment format is often mixed with the understanding of *digital psychotherapy*. While video consultations include the same extent of doctor-patient communication as during face-to-face appointments, digital psychotherapy is considered an independent method – a more digitalized one (Andersson et al., 2016). The latter treatment method typically offered as an online educational software package that comes with a series of modules arranged in a particular order. Moreover, digital psychotherapy is a treatment method meant to encourage patients to work more independently through interacting with different tasks, readings, and often other interactive elements (e.g., video, audio, graphics). The duration of such interventions varies depending on the patient's

needs and professional psychological assessments. Furthermore, digital psychotherapy is commonly provided as either a pure *self-help* intervention, where patients receive minimal feedbacks from a therapist (usually weekly text-based feedback or telephone conversation), or as part of a *blended treatment* course, where the online content is combined with regular in-person consultations (Andersson et al., 2014, 2016; Arnberg et al., 2014; El Alaoui et al., 2015).

In 2019, the *National System for the Managed Introduction of new Health Technologies*⁷ (Beslutningsforum for nye metoder) officially approved digital psychotherapy as a new treatment method suited for mild to moderate mental health conditions. This method approval means that all hospitals and mental healthcare providers in the Norwegian specialized healthcare can now offer digital psychotherapy (Ørjasæter Elvsaas et al., 2018). The potential benefits of digital psychotherapy are believed to be that such services are accessible from different locations (geographically independent), cost-efficiency (less clinician face-to-face time), and contribute to a broader reach of patients (Nordgreen et al., 2016). Moreover, results from several randomized control trials show that the clinical effectiveness of digital psychotherapy is comparable to the traditional face-to-face interventions (Andersson et al., 2014; Arnberg et al., 2014; El Alaoui et al., 2015; Karyotaki et al., 2017; Olthuis et al., 2016). “Internet-based treatments has come to stay in mental healthcare”, states the Norwegian government in their newest report (Ministry of Health and Care Services, 2020a, p. 30).

In addition to video consultations that represents the same treatment course as in-person consultations (Berryhill et al., 2019), and digital psychotherapy, which is a more digitalized treatment method requiring patients to work more independently (Andersson et al., 2016), it should be noted that there are many other examples of technology utilized in the context of mental healthcare. One example is *virtual health assistants*, that is, mobile applications that offer automated communication with users through text messages or voice mails. Such applications are commonly available 24/7 and are often referred to as “life coaches” or “agents” that aim to guide and help users to comprehend their mental health conditions better (The Norwegian Board of Technology, 2020). Another example is the use of *Virtual reality*

⁷ *The National System for the Managed Introduction of New Health Technologies* is a system owned by the Ministry of health and care services. This system provides a decision-making platform for priority setting based on systematic health technology assessments (<http://nyemetoder.no/>).

(VR)⁸ to practice challenging and extraordinary situations - both for healthcare professionals and patients (Ose et al., 2019). An example of VR used in mental healthcare is the ongoing research project within the Norwegian child and adolescent psychiatry. In this pilot-project, healthcare professionals utilize VR technology to practice stimulated situations where child and adolescents are experiencing suicidal thoughts or behaviors. The project representatives state that the project aims to implement VR as part of the internal training and professional development (Ringel, 2020).

To conclude this sub-section, it should be noted that the majority of psychologists and medical research communities agree that in most cases, the use of technology in mental healthcare should be a supplement to regular in-person consultations rather than a replacement. Also, with the introduction of new technologies in healthcare, and mental healthcare alike, privacy issues are usually high on the agenda (Aguilera, 2015; Arnberg et al., 2014; Brooks et al., 2011; Hollis et al., 2015). Figure 2 summarizes and illustrates the central factors influencing today's digitalization in mental healthcare.

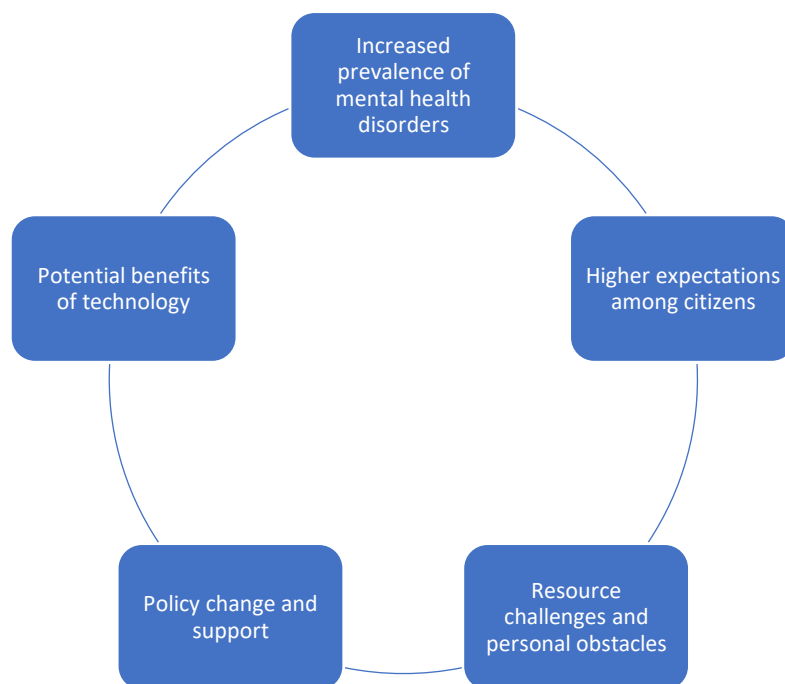


Figure 2. Central factors influencing digitalization in mental healthcare.

⁸ Virtual reality (VR) refers to computer-generated simulation in which humans can interact with an artificial three-dimensional environment using electronic devices (Rubin & Grey, 2020)

3.4 Lovisenberg Community Mental Health Center



Lovisenberg Diakonale Sykehus

Lovisenberg Community Mental Health Center (Lovisenberg distriktpsykiatriske senter) provides psychiatric services mainly for adults based in Oslo, Norway. The respective center is attached to Lovisenberg Diaconal Hospital (Lovisenberg diakonale sykehus) that operates with a long-term contract with the South-Eastern RHA (Lovisenberg Diaconal Hospital, 2020b). The community mental health center offers various services ranging from anxiety and depression treatments, low-threshold educational courses, substance abuse, and bipolar disorders (Lovisenberg Diaconal Hospital, 2020c). These treatment services are further distributed through different underlying sub-units at the respective center. Table 1 provides an overview of the current sub-units operating under Lovisenberg Community Mental Health Center:

Underlying sub-units at Lovisenberg community mental health center
Acute team (emergency inquiries)
Assertive Community Team (treatment in patient's environment)
Group Therapy (interdisciplinary team, treatment in groups)
Health and work – (psychotherapy and problem-specific courses)
Neuropsychological services (specialize in the relationship between mind and behavior)
Substance abuse outpatient clinic (specialize in harmful substance use)
24-hour inpatient unit (conditions that require 24-hour stay)
Adult psychiatric outpatient clinic Gamle Oslo (psychotherapy)
Adult psychiatric outpatient clinic Grünerløkka (psychotherapy)
Adult psychiatric outpatient clinic St. Hanshaugen (psychotherapy)

Table 1. Overview of underlying sub-units at Lovisenberg Community Mental Health Center (Lovisenberg Diaconal Hospital, 2020c).

Lovisenberg Diaconal Hospital has previously participated in various innovation projects, including the VIS-project (Velferdsteknologi i sentrum) initiated by the Norwegian Directorate of Health (NDH), with the aim to test welfare technology services for distanced follow-ups of patients with various chronic diseases (Lovisenberg Diaconal Hospital, 2018). In addition, the hospital also utilizes other technologies in their medical practice, such as an electronic tracking system at the surgical department. Moreover, in the document “Development plan 2035”, Lovisenberg Diaconal Hospital states that:

“The hospital shall develop its own e-Health and ICT competence, ensuring that the hospital can both understand and utilize technology solutions better. The interaction between the clinical staff/therapist and technology will become even more vital in this context. Through our own e-Health and ICT expertise, and strong partners, the hospital aims to achieve a more user-driven and delivery-driven organization” (Lovisenberg Diaconal Hospital, 2018, p. 65).

Today, the hospital has established a so-called e-health department (Lovisenberg Diaconal Hospital, 2020a). There is a psychiatric e-health team within this department, consisting of practitioners from two of the listed sub-units in Table 1. In 2018, Lovisenberg community mental health center adopted a digital psychotherapy service for the first time, namely, Braive. Initially, the respective service was used at one of the units – referred to as “clinic B” in this thesis. Furthermore, at the beginning of 2020, another unit – referred to as “clinic A”, started to use Braive. To date, there is limited information about both the hospital’s general e-health department, the psychiatric e-health team, and accordingly, the adoption of Braive. However, as we shall see in Chapter 5, *Empirical findings and analysis*, a particular collaborative project made it possible for Lovisenberg Community Mental Health Center to adopt and implement Braive. The next sub-section briefly introduces the digital psychotherapy service Braive.

3.5 The innovation: Braive



Braive is a private digital psychotherapy service that provides evidence-based programs composed of educational videos, interactive therapeutic tools, and different condition-specific tasks (Braive, 2020c). In this platform, one might create an account either as a certified practitioner or as a user. Users are typically encouraged to start “*building healthy minds*” by beginning with a so-called *mental health check*. The results from the survey-based check then generate personalized program suggestions for the user. In cases where patients are referred to Braive through a public healthcare institution⁹, using the various programs in Braive is free. However, when signing up in Braive as a private individual, each program costs 1050 NOK. Furthermore, when a healthcare professional creates an account and connects with a patient, the practitioner can access the results of the different tasks and activities¹⁰, or “homework” completed by the user. In assessing the results, the practitioner provides textual or telephone-based feedbacks and comments to the relevant patient (Braive, 2020a). Figure 3 below provides a visual impression of Braive’s platform:

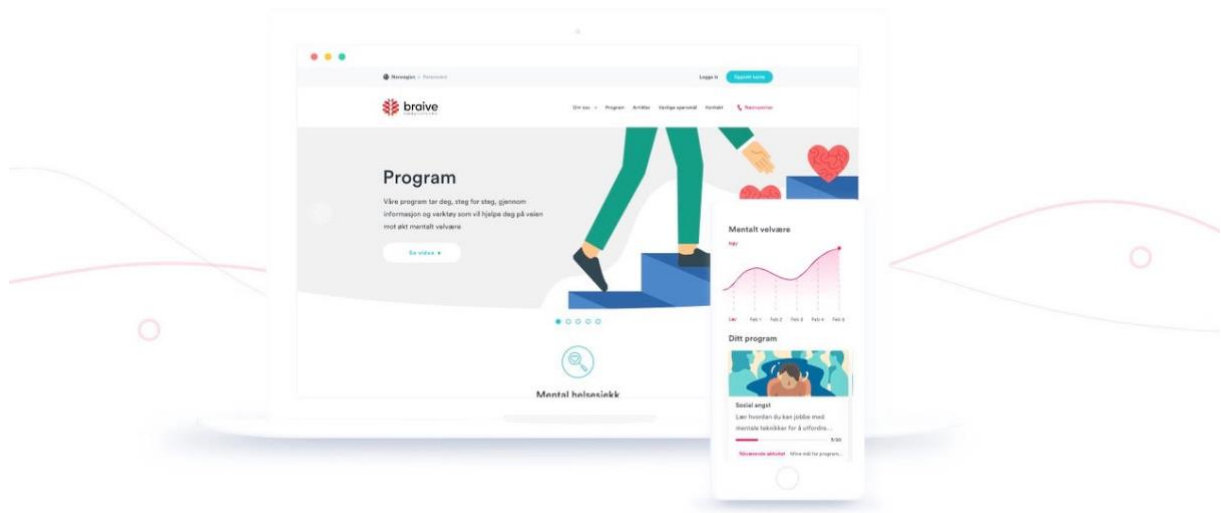


Figure 3. Visual illustration of Braive’s platform (Braive, 2020b).

⁹ To date, Braive is only collaborating with one public healthcare institution in Norway, that is, Lovisenberg Community Mental Health Center (Representative from Braive, personal communication, October 8th, 2020).

¹⁰ It should be noted that practitioners’ access to patient’s results is always based on informed consent. Patients have the right to refuse to share results (Braive, 2020a).

3.6 Summary of chapter

This chapter outlined the present case's research context, describing the central factors observed as influential on Norwegian mental healthcare digitalization. In addition, I presented Lovisenberg Community Mental Health Center and the general hospital the respective center is attached to. In the above sub-section, I briefly described the relevant innovation, Braive. The next chapter explains the present study's methodology and research approach.

4 METHODOLOGY AND RESEARCH APPROACH

This following chapter detail the methodology and research process of the present study and elaborate on the central choices made along the way. Firstly, a description of qualitative research and case study takes place. Secondly, I present the background of how and why this thesis' case has been selected. Thirdly, I describe the process of data collection, including how the interviews were conducted and how the empirical data have been analyzed. Lastly, I discuss research validity and reliability before highlighting ethical concerns related to the present study.

4.1 Qualitative research and case study

The fundamental nature of qualitative research concerns human experiences and human environments behind the phenomena under study. Unlike *quantitative* researchers who work with numerical data and statistics samples, *qualitative* researchers aim to understand the meanings and motivations behind people's experiences. In emphasizing human feelings, values, and thoughts, qualitative researchers turn words into textual data to describe the phenomena under study (Hay, 2016; Yin, 2018). Qualitative researchers often inductively approach the unit of analysis, meaning that researchers emphasize the real-life perspectives rather than "forcing" certain theories into participants' stories (Gioia et al., 2013). To best answer my research questions, I believed that it was essential to capture the relevant actors' *behaviors* and *experiences* in the implementation process. Thus, qualitative research was viewed as a suitable approach to best explore the many *what* and *how* questions concerned in this thesis (Yin, 2018).

The present study also represents a qualitative *case study* of how organizational factors have influenced Lovisenberg's implementation of Braive. Yin (2018) defines a case study as a method that "investigates a contemporary phenomenon in-depth within its real-life context". This definition is also well mirrored in the objective of this thesis. Although the "case function" can be incorporated by researchers in various ways, this thesis nonetheless embodies a single-case design focusing on one case (organizational factors) within a single-unit of analysis (Lovisenberg Community Mental Health Center) (Hay, 2016; Yin, 2018).

4.1.1 Thematizing

All academic disciplines have their defined theories and typical research methods that are believed to influence the research process and the choices we make. Thus, the choice of topic, the questions we ask, and the research methods we seek to rely on are often dependent on the academic discipline and the community we are a part of (Bradshaw & Stratford, 2016). The interdisciplinary master's program of *Technology, Innovation, Culture* (TIK) have introduced me to a realm of theories and relevant topics. The latter has enhanced my initial desire to comprehend *how* innovations are developed and implemented (Garud et al., 2013; Rogers, 2003; Tidd & Bessant, 2018; Van de Ven, 1999). Nevertheless, being part of such a community has expanded my perspectives on innovation processes and made me better equipped to interpret and analyze such processes. In addition to my initial theoretical interest in healthcare innovations - or more specifically, the digitalization of health and welfare services, the choice of theme for this thesis was influenced by the current Covid-19 pandemic.

In March 2020, the Covid-19 outbreak changed our lives dramatically (Dartnell, 2020). When faced with new realities of temporary unemployment, home-schooling, social distancing, and quarantine, severe psychological distress emerged worldwide (Serafini et al., 2020; Torous et al., 2020). In the wake of these events, digital psychotherapy, and other forms of telepsychiatry (e.g., self-help mobile applications and educational websites) became more recognized than ever (Laukli, 2020; Rajkumar, 2020).

The combination of my initial theoretical interest in the digitalization of health and welfare services, and the unique opportunity of witnessing a rapid mobilization of science, technology, and innovation within mental healthcare (Kannarkat et al., 2020), made me believe that it was more relevant than ever to contribute to the understanding of mental healthcare digitalization and its many facets.

4.1.2 Selecting the case

The next step of my research process was to find a case that was appropriate in contributing to the understanding of the digitalization within mental healthcare. The initial research on this topic eventually revealed one of the main gaps within the field: a wide range of digital innovations within mental healthcare exist. However, many of these innovations struggle to be implemented (Brooks et al., 2011; Folker et al., 2018; Hollis et al., 2015). In addition, the

initial research also revealed that there was a lack of “success stories” within the Norwegian mental healthcare, albeit both professional and political engagement to enhance digitalization within the Norwegian specialized healthcare (Høiseth, 2019; Melby et al., 2019; The Ministry of Health and Care Services, 2019).

While I kept an open mind when searching for an appropriate case, I defined two particular selection criteria. First, I sought a case of a digital mental healthcare innovation that was already implemented in order to contribute to the identified innovation-to-implementation gap (Brooks et al., 2011; Folker et al., 2018; Hollis et al., 2015). Second, I limited my case selection to Norwegian mental healthcare, as this is a relatively new field with limiting research considering innovation implementation process. Moreover, since this study is a master’s thesis with a certain time limit, I followed the recommendation by Hay (2016) to select case based on access.

On April 1st, 2020, I attended a web conference (Webinar for psychologists about video therapy) organized by The Norwegian Psychological Association (NPA). One of the speakers briefly referred to Lovisenberg Community Mental Health Center as an example of a healthcare organization that offers digital psychotherapy as an ordinary mental health treatment. This information certainly caught my attention. At that point in the research process, I had already recognized that several community mental health centers in Bergen have successfully implemented a service called *e-Meistring* (www.emeistring.no). My initial desire was to compare the implementation process at one of the units in Bergen with the process at Lovisenberg, as I believed such comparative case study would generate valuable insight to enrich the understanding of the developments in the Norwegian mental healthcare. However, I made several attempts to get in touch with e-Meistring, but unfortunately without success. Eventually, I decided to conduct a single-case study of the implementation process at Lovisenberg.

4.1.3 Selecting participants

One of the most crucial tasks of designing a qualitative case study is to identifying appropriate participants who can best inform the research questions (Bradshaw & Stratford, 2016). This thesis identified relevant participants through a method called *snowball sampling*. Biernacki and Waldorf (2016) describe the latter as “a study sample through referrals made among people who share or know of others who possess some characteristics that are of

research interest” (Biernacki & Waldorf, 2016). Following this method, I connected with the speaker at *Webinar for psychologists about video therapy* (see sub-section 4.1.2). The latter led me to a relevant informant at Lovisenberg, and the “snowball” rolled as I gained a better overview of the involved actors in the innovation implementation process. The additional connections made along the way revealed that it was specifically two underlying units - clinic A and clinic B, that had been most involved in implementing the given innovation. Since clinic A and clinic B had been most involved in the innovation implementation process, I believed that it would be valuable to gather relevant staff’s first-hand perceptions.

Selecting participants through a snowball sampling method has been criticized for causing bias in the data material, because “the researcher has less power over the selection of participants” (Biernacki & Waldorf, 2016). Subsequently, the latter is argued to potentially affect the validity of research. However, the recommended measures for minimizing bias in the data material are applying other data sources such as publicly available documents to cross-check the interview findings (Hay, 2016). However, since there is no existing information about the specific innovation implementation process at the respective units, one additional participant were included in the subject sample as a measure to minimize data bias (Bowen, 2009; Bradshaw & Stratford, 2016). The latter include a representative from Braive that were involved in the implementation process locally at the center.

Despite that I am fully aware of the importance of paying attention to patients’ voices as their experiences and perceptions contribute significantly to healthcare innovation processes (Greenhalgh et al., 2017; Groene, 2011); patients were nonetheless excluded from this study’s subject sample. The latter is based on the ethical challenges and dilemmas related to including patients as informants in research (Halvorsen & Jerpseth, 2016). For instance, patients at Lovisenberg have a variety of mental health conditions; thus, every single potential patient participant would have required me, as a researcher, to carefully assess the extent to which they would have been able to get informed, and the extent to which each individual would have been capable of giving consent (Halvorsen & Jerpseth, 2016).

With a desire to triangulate the data, I selected participants with different roles and responsibilities in the implementation process. Hence, a criterion for selecting participants was that the informants must be directly involved in the process, but at the same time have different organizational roles. The latter’s rationale is also to ensure nuance in the data

foundation (Hay, 2016; Yin, 2018). Moreover, the data have been cross-checked where it has been possible to compare the findings with what is available in public documents. The latter appears in Chapter 5, section 5.1, *Preconditions*.

4.2 Strategy for data collection

With the mission to contribute to the understanding of the innovation implementation process of Braive at Lovisenberg, the next step of my research process was to choose and apply strategies for the data collection (Bradshaw & Stratford, 2016). The initial desire was to conduct both observations of relevant team meetings (Bradshaw & Stratford, 2016) and analyze relevant documents related to my case (Bowen, 2009) to potentially triangulate my data. However, due to the extraordinary circumstances of Covid-19 and the recommended measures by the Norwegian health authorities, field observations were unfortunately not possible. However, a 15-minute demonstration of the respective digital psychotherapy service was provided after one interview, which later proved to help understand the informant's rapid references to the services' functionalities.

Furthermore, after both initial research and an informal conversation with one of the representatives in the management group at Lovisenberg, I figured that there were no publicly available documents that could have been included in document analysis. The clinic provided some internal documents, but after reviewing them, I realized that they did not contain the information I needed to answer my research questions. With this backdrop, the present study's main data have been primarily collected through semi-structured interviews (Galletta, 2013; Yin, 2018). The latter has resulted in nine semi-structured interviews, including three representatives from the management group at Lovisenberg Community Mental Health Center, three practitioners from clinic A, and two practitioners from clinic B. Moreover, one additional interview was conducted with representative a from Braive.

Secondary data sources (Hay, 2016; Yin, 2018) such as online news sites, official webpages, public documents, and policy reports have been applied to detail the case, the relevant context, and enrich the description of some parts of the analysis.

Before the primary data collection, I conducted two *preliminary* interviews and attended three relevant seminars and conferences (Hay, 2016).

4.2.1 Preliminary interviews and observations

Preliminary interviews and observations are suggested as helpful groundwork to get an initial grasp of the field of interest (Bradshaw & Stratford, 2016). As there was limited theoretical and thematic information about the chosen case, and a lack of similar studies on Norwegian mental healthcare innovations, I spent time getting in touch with relevant people working with mental healthcare innovation. I attended seminars and conferences related to digital health or telepsychiatry in Norway. Table 2 provides a descriptive overview of the preliminary interview and attended seminars and conferences.

SEMINARS			
Name / organization	Who	Date	Length
Webinar for psychologist about video therapy	Science center health and technology, The Norwegian psychological association, The psychological association for digital health	01.04.20	60 min
Digital mental health – did we need a pandemic?	Norwegian board of technology	16.06.20	60 min
The health technology conference	Norwegian health tech, Tekna, Smart care cluster	10.09.20	7 hours
INTERVIEWS			
DigPsyk – The psychological association for digital health	Representative	27.08.20	40 min
SINTEF Digital	Researcher	07.09.20	34 min

Table 2. Descriptive overview of preliminary interviews and observations.

4.2.2 Semi-structured interviews

In order to comprehend the innovation implementation process of Braive at Lovisenberg, it was essential to understand the process through the eyes of those who were there. To realize the latter, this thesis used one of the most common strategies for collecting qualitative data, namely, interviews (Hay, 2016; Yin, 2018). The main purpose of qualitative interviews is to learn about the relevant topic or theme by encouraging interviewees to share their experiences

and descriptions of the phenomena under study. Furthermore, various styles (e.g., individual or group) and forms (e.g., structured, unstructured, semi-structured) of qualitative interviews can be utilized depending on the research questions (Hay, 2016; Yin, 2018). In the present case study, individual interviews have been conducted through a semi-structured interview form.

Compared to focus group interviews, where multiple informants participate together in one interview, individual interviews are argued to be more capable of deriving details and insights into the interviewee's personal views and thoughts (Hay, 2016; Yin, 2018). However, focus group interviews *could* have been valuable for this study to observe the dynamics between the participants (Hay, 2016). However, due to the extraordinary circumstances of Covid-19, focus group interviews would have been arranged in a digital form, which I concluded would be a barrier more than a facilitator for capturing the group dynamics.

One of the main reasons I chose to proceed with semi-structured interviews is the degree of flexibility allowed in this form when speaking with participants who know more about their experienced events than what I, as an "outsider", do (Gioia et al., 2013). Thus, with respect to the case, semi-structured interviews were subsequently conducted with predetermined yet open-ended question, making room for other subjects to emerge from the conversations (Galletta, 2013). However, despite the flexibility to address surfacing topics, semi-structured interviews require a prepared interviewer to ensure that the interview's focus stays on track.

To end this sub-section, I would like to acknowledge the two common concerns about using interviews as the primary data collection strategy. First, it is challenging to present the research findings as objectively true, as the researcher work with the participants' subjective experiences (Galletta, 2013). Second, as interviews are based on participants' retellings of events that have occurred a while ago, details might not be remembered or presented correctly (Hay, 2016). Nevertheless, the realistic measure I have taken to nuance the subjective narrative about the respective implementation process is to include perspectives held by participants with different organizational positions.

4.2.3 Designing and conducting the interviews

In preparing for the coming interviews, I designed an interview guide that included a list of topics and questions planned to be covered during the interviews (see appendix A). The latter

proved help maintain a good flow of the conversations while also reminding me of what I wanted to ask next. The questions' types of topics essentially included content related to background, knowledge, behaviors, opinions, and values (Hay, 2016; Yin, 2018). Moreover, the interview guide included both *primary questions* that elicit broader reflections, and *secondary questions* (or probes), that initiate follow-up discussions (Galletta, 2013). Moreover, following a funnel structure, the questions were sequenced from broad to narrow. For example, every interview opened with descriptive questions regarding facts that were mainly centered around the present time (e.g., "How do you use Braive?"). When the interviewees had become more familiar with the setting (according to my perception), more controversial matters such as what they had perceived as challenging in the implementation process were then addressed (Hay, 2016, p. 158).

Before starting the interviews, all informants signed an informed consent that included information about the purpose of this thesis, their rights, and privacy as informants, as well as contact information for both myself, the data protection services at the University of Oslo, and the Norwegian Center for Research Data (NSD) (Hay, 2016, p. 32). This information was additionally summarized verbally, followed by asking for permission to audio record the interview, which every informant agreed to. Finally, every informant was invited to signal any further concerns about the interview before we began. Moreover, following the common advice suggested by qualitative research scholars (Andersen, 2013; Galletta, 2013; Hay, 2016; Yin, 2018), the interview time frame for the semi-structured interviews was set between 30-60 minutes. As I have been the only researcher for this project, balancing between asking questions, being present in the conversation, maintaining a critical inner dialogue, and being aware of non-verbal communications (e.g., body language and gestures) was challenging. However, post-interview reflections were written down immediately after the interviews, which helped me capture the fresh impressions and build an initial familiarity with the data material (Hay, 2016).

One of the essential components of qualitative interviews is to develop *rapport*, that is, a positive and comfortable relationship between the interviewer and the interviewees (Hay, 2016, p. 160). Practically, building rapport involves behaving in a way that shows respect for the informant and the story they tell (Hay, 2016, p. 160). Several choices were made along the way in order to preserve rapport between me as an interviewer and the participants as interviewees. First, the funnel structure of arranging questions proved to be a useful strategy

to make the interview situation more comfortable for the informants. Secondly, when scheduling the interviews, I invited the informants to suggest a desirable location themselves. As required by the informant, the first interview took place at the informant's office. In other words, the interview environment was much like the archetypal therapist-patient setting. Before this interview, I did not consider this particular setting as problematic. However, during the interview, I recognized signs of discomfort by the informant, which I assumed could be grounded in the interview setting, and also connected to what Hay (2016) describe as an *asymmetrical relationship* between the researcher and the informant (Hay, 2016, p. 36).

Consequently, when further arranging interviews with those who preferred to meet face-to-face, I suggested other locations than their usual work environment. Surprisingly, the latter proved to contribute significantly to the atmosphere and dynamics of the following interviews. Thirdly, with respect to informants' story, I made sure not to lead the interviewees when seeking further clarification of a statement (Hay, 2016). The following excerpt from an interview is an example of attempting to enriching the description by *repeating* the interviewee's word (Galletta, 2013):

Interviewee: "X" gives me faith in distanced treatments.

Interviewer: Faith.

Interviewee: Well, yes, "X" makes me trust that, I too, should be capable of finding my own way to use this service.

Thus, rather than assuming what meaning the informants ascribe to certain words or phrases, I took opportunities to clarify points by neutrally initiating further descriptions and attempted to make sense of the story *together* with the interviewees (Galletta, 2013; Hay, 2016).

Furthermore, being mindful of the impact that my questions or wordings could have on the participants' answers (Galletta, 2013), I made small tweaks to a questions' phrasing as a measure to build in what I have learned from the interviews. For example, instead of asking, "How was Braive implemented?", I changed the phrasing to "How was the service taken into use?". The latter proved to extract more detailed descriptions than the initial formulation, where I used a rather theoretical term.

Four interviews were conducted through either telephone or video. Although there were minor issues such as sound problems, I generally perceived that participants were well-used to communicating through digital platforms such as Zoom and Skype. However, when it comes to telephone interviews, I experienced that the conversation was more “mechanic”. Due to the reduced potential for dynamic breaks such as “sharing” coffee, it was experienced more challenging to develop rapport with participants through telephone interviews. Unfortunately, the latter resulted in shorter interviews that were less rich in details than the psychological interviews and those conducted through video-format. On the other hand, to my experience, it was somewhat easier to behave neutrally during the telephone interviews, as facial expressions and body language were not visible. In addition, to my experience, informants participating in telephone interviews seemed to speak more openly around sensitive topics, perhaps because they felt greater sense of anonymity through telephone interviews.

In emphasizing the flexible nature of semi-structured interviews, I welcomed unexpected information that emerged throughout the conversation. Although the participant’s digressions have resulted in interesting conversations, one of the main drawbacks was my personal ability to redirect the interviews when the conversation moved too far away from inquiry topics. However, this was mostly an issue in the two first interviews as practice made me more aware. A descriptive summary of the primary interviews can be found in Table 3.

INFORMANT	ORGANIZATION	POSITION	INTERVIEW SITUATION	DATE	DURATION
Informant 1	Lovisenberg community mental health center	Practitioner, Clinic A	Face to face	05.10.20	40 min
Informant 2	Lovisenberg community mental health center	Practitioner, Clinic A	Video	07.10.20	43 min
Informant 3	Lovisenberg community mental health center	Practitioner, Clinic A	Face to face	13.10.20	42 min
Informant 4	Lovisenberg community mental health center	Practitioner, Clinic B	Face to face	08.10.20	45 min

Informant 5	Lovisenberg community mental health center	Practitioner, Clinic B	Phone	05.11.20	32 min
Informant 6	Lovisenberg community mental health center	Management	Face to face	15.10.20	53 min
Informant 7	Lovisenberg community mental health center	Management	Video	09.10.20	49 min
Informant 8	Lovisenberg community mental health center	Management	Phone	21.10.20	32 min
Informant 9	Braive	Representative	Face to face	08.10.20	43 min

Table 3. Descriptive overview of semi-structured interviews.

4.3 Strategy for processing the data

To process the data, or in other words, prepare it for interpretation and analysis, all conducted interviews were codified with a number of the informant and transcribed in verbatim. The interviews were conducted in Norwegian and carefully translated into English. The transcribed interviews were further imported to the qualitative data analysis software – NVivo. Analyzing the textual data by coding it in a data analysis software helps to observe patterns and extract meanings in a structured way. The process of coding also facilitates *reflexivity*, which is the “critical self-evaluation of the research process” (Cope, 2016). The next sub-section explains how meanings have been extracted from the raw data.

4.4 Strategy for analyzing the data

This thesis has used content analysis to categorize the data material into themes and related sub-themes (Hay, 2016). Moreover, given this study’s objective to understand the respective implementation process through the eyes of those who were there, and not to test or evaluate whether the data are consistent with pre-defined theories, I used an *inductive* approach to code and analyze the data (Gioia et al., 2013). The main reason for choosing an inductive approach as the data analyzing strategy is eventually based on the desire to present the findings with respect to the participants’ authentic stories (Cope, 2016; Gioia et al., 2013).

Inspired by Gioia and colleagues' suggestions in the article "*Seeking qualitative rigor in inductive research*" (2013), the analysis of my data in NVivo proceeded in three main steps:

1. I started with a so-called *open coding* where I did detailed readings of the raw data and assigned codes loyally to participants' wordings (*1st order concepts*).
2. The first step was then repeated several times, followed by categorizing the initial codes under new sub-themes (*Second-order themes*), which then became conceptualized under broader "umbrella" themes (*Aggregate dimensions*).
3. I evaluated the relationships between the initial codes, the emerged sub-themes and the assigned umbrella themes and began to think about them theoretically. Eventually, I started to consider relevant processes' underlying structure in line with consulting perspectives from the innovation literature.

The data structure model depicted in Figure 4 below illustrates how I went from raw data to 1st order concepts, Second-order themes, and finally, Aggregate dimensions. The content illustrated in this model will be revisited in Chapter 5, *Empirical findings and analysis*. This model is reproduced inspired by the original work by Gioia and colleagues (2013). A better resolution of the model can be found in appendix B.

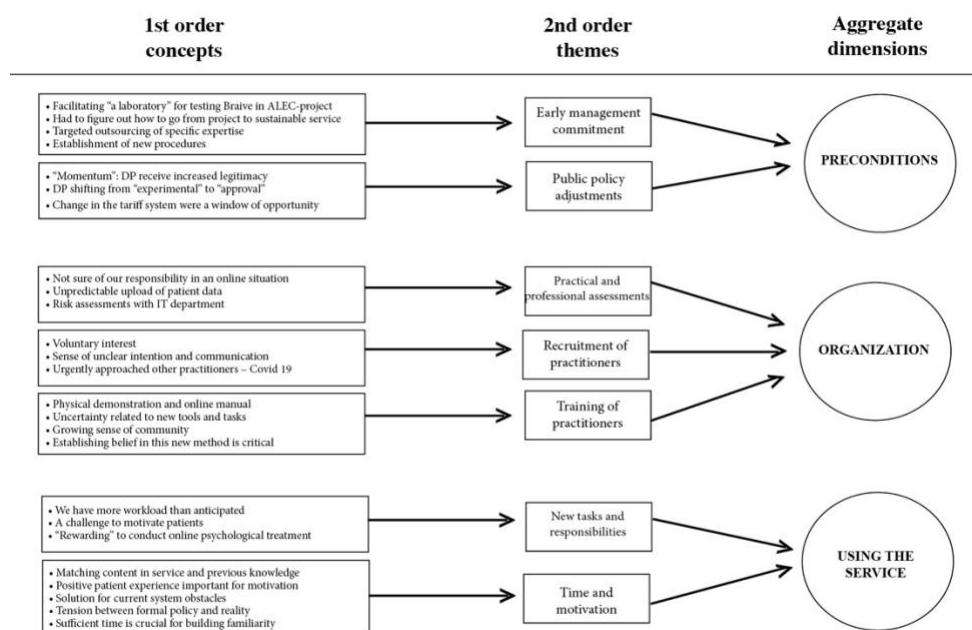


Figure 4. Data structure model. Reproduced inspired by Gioia and colleagues (2013).

4.5 Ensuring rigor

A fundamental part of the entire research process has been to demonstrate *rigor*. In other words, prove “credibility, trustworthiness, confirmability, and dependability of our work” (Bradshaw & Stratford, 2016, p. 126). The following sub-sections discuss the respective study’s trustworthiness by elaborating on some central concerns related to *construct validity*, *internal validity*, *external validity*, and *reliability* (Yin, 2018).

4.5.1 Construct validity

In the context of qualitative research, construct validity refers to whether the study investigates what it claims to do and the extent to which the research process leads to an accurate description of the reality. Yin (2018) highlights two important steps to take in order to increase construct validity. First, it is recommended that researchers provide a clear definition of the study’s objective and “establish a clear chain of evidence”, that is, a transparent description of the research process which allow readers to comprehend how the researcher goes from the “initial research questions to the final conclusions” (Gibbert et al., 2008). The latter also relates to the extent to which the specific concepts used in the research relate to the study’s original objectives. Second, it is encouraged to *triangulate* the empirical data, that is, to understand the phenomena under study from different perspectives by using multiple data collection strategies and data sources (Yin, 2018).

The primary strategy used in the present study to secure construct validity is to thoroughly define and defend which aspects of the implementation process this study investigate, and which participants are viewed as the most important to include to answer the proposed research questions. Moreover, I have carefully chosen appropriate theories and concepts from the realm of innovation literature and attempted to establish clear links between the concepts and the selected case. Although the selected theories and conceptual framework can be defined as an “operational measure” that eventually represents a match with this thesis’ objective, I would like to emphasize that it is not the purpose of this thesis to apply the selected theories for an accurate measure of the gathered data. The framework and theories rather function as a theoretical “reference base” that facilitate reflections about how the respective implementation process is experienced in the selected case.

As previously mentioned, I have strategically chosen to include participants with different positions and relations to the implementation process. The latter is a measure to nuance the

data material and triangulate the research findings to the extent to which it has been possible. However, a weakness can immediately be that this thesis has solely relied on semi-structured interviews, as observations through digital platforms (due to Covid-19) were concluded not beneficial. Also, no available documents were related to the respective case.

4.5.2 Internal validity

Internal validity is about “whether the researcher provides a plausible causal argument and logical reasoning that is powerful and compelling enough to defend the research conclusions” (Gibbert et al., 2008). In this sense, ensuring internal validity is about establishing and defending the relationships between different factors in the research, in other words – how “factor x” leads to “event y” (Yin, 2018). For this study, I have attentively searched for rival explanations both during the semi-structured interviews and in the phase of data analysis. Moreover, it should again be highlighted that this study’s purpose is not to give any final explanations, as the research design has not been focused on *why* the implementation process is experienced, understood, or practiced in a certain way.

4.5.3 External validity

In qualitative research, external validity refers to the extent to which the study’s findings are *transferrable* to other contexts or settings (Yin, 2018). The purpose of the present case study is to explore how an implementation process is understood and practiced in a *specific* organizational context. In this sense, this thesis does not facilitate any *direct* link to other similar cases. On the other hand, I believe that this thesis’ findings can be relatable to other contexts with similar features, as I believe that one cannot entirely exclude the possibility that related mechanisms can be found in other similar contexts.

4.5.4 Reliability

Reliability refers to whether the research findings are consistent, meaning that other researchers should be able to repeat the same research process and arrive at the same results (Yin, 2018). For qualitative research, the idea of reliability is about assessing the research’s trustworthiness rather than a “fixed measure of accuracy” (Yin, 2018). To strengthen qualitative studies’ reliability, it is suggested to provide a well-documented research procedure that explains each step taken to arrive at the final conclusions (Yin, 2018). Accordingly, the respective research process has been transparently projected in this chapter

through detailed descriptions of the process, emphasizing various rationale behind central choices and measures taken along the way. In addition, I have made efforts to present, in great detail, the honest reflections about the various methodological concerns and inaccuracies that have been encountered throughout the different phases of the research process. To further increase the transparency of the present study, I have:

- Provided table of descriptive characteristics of the conducted interviews (see Table 3)
- Provided a data structure model that illustrate the process of data analysis (see Figure 4)
- Attached the interview guide (see appendix A).

4.6 Ethical considerations

Since one of the main characteristics of qualitative research is interacting with people, ethical considerations become an essential part of the research process (Hay, 2016). This study's formal measure has been to notify the current thesis project to NSD before proceeding with interviews. Furthermore, all participants were informed about the details of this study, along with their privacy rights. Also, all participants were reminded both textual and verbally that they could withdraw from this study at any time without further explanation. Moreover, all informants have been informed that they will be anonymized in this thesis. Since the informant's formal positions within the clinic are relevant for the analysis, I decided to divide them into "management group" and "practitioner group". However, both which units "clinic A" and "clinic B" represents, and the exact positions the informants have, are not stated as a measure to protect the informants' anonymity. Nevertheless, all informants approved and signed a consent document, confirming that they are willing to participate in this project. Finally, the next chapter presents this study's empirical findings and analysis.

5 EMPIRICAL FINDINGS AND ANALYSIS

The following chapter analyze what the implementation process of Braive at Lovisenberg Community Mental Health Center looked like for those who were there. The first section analyzes which factors have enabled Lovisenberg to adopt and subsequently implement Braive. The second section analyzes how the implementation process was organized, followed by a third section concerning how the service is used in daily practice. The first section is mainly based on management groups' perspectives. However, information from public documents has been used in the first section providing additional details. The second and third section include both management group and practitioner group perspectives. Finally, the present chapter combined with Chapter 2, *Theoretical framework*, contributes to examining and discussing the proposed research questions of this thesis. The latter takes place in Chapter 6, *Discussion*.

5.1 Preconditions

This section analyzes which factors have influenced Lovisenberg to adopt and implement Braive as an ordinary treatment offer, provided at two of the center's underlying units – clinic A and clinic B. There are essentially two main factors that have been identified as the main catalysts for the initial adoption and the progressing implementation process, namely – early management commitment and public policy adjustments.

5.1.1 Early management commitment

Lovisenberg's journey of implementing a digital psychotherapy service started with an invitation to join an EU-funded research project, the ALEC-project, *Adjusted Level of Effective Care: closing the access and treatment gaps in mental healthcare*¹¹. The representative management group at Lovisenberg enthusiastically describes that innovation and technology are high on the hospital's agenda and adds that they perceive digitization within mental healthcare as an important tool to streamline paper-based processes. For example, already in 2014, the center implemented a digital symptom mapping system. Furthermore, when the center was invited to participate in ALEC, the management group

¹¹ The ALEC-project aimed to “design and validate a patient-centric mHealth system to deliver personalized, symptom-aware Cognitive Behavioral Therapy (CBT) content via Braive's e-learning method. Braive's core will be integrated into FRISQ Care (...). Through ALEC, we will enable a resource-efficient stepped care model, supported by low-threshold treatment programs for self-administered CBT, thus improving care access (...) (Era-Learn, n.d.).

believed that the “timing was right” to “finally” utilize a technology that could improve the center’s delivery of mental health treatment and reach an even broader range of patients. Here, it should be noted that the practitioners on the other hand, rarely emphasize “innovation” or “technology”. Nor do this group seem to view the latter as something prioritized in their *daily* work. However, as we shall see, there are indeed some differences between practitioners’ perspectives at clinic A and practitioners’ perspectives at clinic B. Nevertheless, let us first establish a better overview of what the ALEC-project was and how Lovisenberg’s participation in this particular project influenced their decision to adopt and implement Braive.

In all interviews with the management, and occasionally during conversations with practitioners, the ALEC-project is presented as the center’s initial entrance to adopt a digital psychotherapy service. In addition, it appears evident that the management group made this particular decision. According to the project description of ALEC available at EU’s official website (Era-Learn, n.d.), ALEC was an EU-funded research project including the private digital psychotherapy provider Braive, FRISQ Care (a Swedish digital patient involvement system), and Lovisenberg Community Mental Health Center. Moreover, according to the management group, ALEC lasted from 2018 to January 2020. In this project, Lovisenberg functioned as the clinical research partner, meaning that the center facilitated an arena, or as described by Informant 6 – “*a laboratory for practically testing Braive’s platform with real patients*”. Furthermore, the management group indicates that they recognized the potential of digital psychotherapy from early on and seemed eager to integrate the service as part of their routine practice after the ALEC-project:

“We saw the project (ALEC) as a unique opportunity to prepare for an infrastructure designed to include e-therapy at our clinics simply because the naked truth is that we, or the Norwegian psychiatric care, are not able to provide enough help with traditional treatment. There are too many people with mental health problems, and we are not at all close to being able to treat those who need it” (Informant 6, management group).

It becomes clear that for the management, this new type of treatment method is understood as a *direct* solution to the broader structural and systemic challenges, similar to the information I presented in Chapter 4, *The research background and case*. Moreover, “*Prepare for an*

infrastructure” seems to include new allocations in the organization. For example, in September 2018, the center recruited an additional role to the management group – coded as “Informant 7” in the present study. This particular action reflects the management’s commitment to enhance in-house knowledge in mental healthcare technologies, as Informant 8 explains that they were looking for a person (Informant 7) with “great expertise” and experience with digital psychotherapy in *clinical practice*. Interestingly, only four individuals applied for this new position, which is rare, because according to the management group, Lovisenberg usually receives over 100 applications when recruiting new employees. The number of applications perhaps illustrate the scarcity of professional and practical experiences with digital treatment methods within Norwegian psychiatric care. Luckily, Informant 7 met all the criteria for this new position. Informant 8 describe the employment of Informant 7 as follow:

“We didn’t want the project or the service to end up in the project cemetery and hired “Informant 7” asap to make sure that e-therapy actually could become something sustainable at Lovisenberg” (Informant 8, management group).

Moreover, Informant 6 views the employment of Informant 7 as essential because *“It is so important to have someone to be a super-user or a role-model for the practitioners that were going to use Braive”*. In other words, the employment of Informant 7 can be understood as one of the management groups’ early strategy to implement Braive and indicates that developing a team dedicated to implementation was an important precondition. As we shall see later in this chapter, Informant 7 is certainly perceived as a motivating supporter by both clinic A and clinic B practitioners.

The period between September 2018 and January 2019 was mainly devoted to organization and preparations that later should facilitate clinic B’s integration of Braive. In preparing for the implementation, the management group, and particularly Informant 7, spent time to become familiar with each treatment program offered in Braive’s platform. For instance, Informant 7 assessed the content and professional quality of each module within every program, and eventually, Lovisenberg got the opportunity to contribute to some of Braive’s programs. Both Informant 6 and Informant 7 agree that even if Braive was an externally developed and privately owned service, they instantly felt more “attached” to the service when they had a representative (Informant 7) that contributed to some of the services’

content. From Braive’s perspective, the representative state the following about Lovisenberg’s contributions:

“Feedbacks from Lovisenberg have been important for how we develop our service. I feel that we have more of a collaborative relationship rather than a supplier-buyer relationship” (Informant 9, Braive).

In this sense, the collaborative relationship between Lovisenberg and Braive enhanced the managements’ involvement in Braive. The latter seemed to further enhance the management groups’ perception of the innovations’ value. When the management group describes the opportunity to participate in ALEC, the informants firstly expressed a robust belief in e-therapy. Moreover, it seems that the belief in Braive increased as they became more involved in editing the content in Braive. In addition, the particular employment of Informant 7 during the early phases of ALEC indicates a dedication to continuing with e-therapy after the ALEC project ended.

Finally, in February 2019, the first patients were recruited from clinic B’s waiting list to receive treatment in Braive. Parallel with introducing this new service to waiting list patients at clinic B, Lovisenberg established and adjusted various local routines and procedures customized to the “online way” of delivering mental health treatment. The latter will be detailed in sub-section 5.2.1, *Practical and professional considerations*. The next paragraphs first highlight two other prominent factors referred to as “momentums” by the management group, which have influenced Lovisenberg’s implementation process.

5.1.2 Public policy adjustments

There are precisely two *external* developments that seem to have had a significant influence on the respective implementation process: (1) the official method approval of digital psychotherapy as ordinary mental health treatment, and (2) adjustments in the public funding system for digital psychotherapy practices.

As presented in Chapter 3, section 3.3, *Potential benefits of technology*, The National System for the Managed Introduction of New Health Technologies (Beslutningsforum for nye metoder) officially approved digital psychotherapy as a legitimate method to conduct and deliver mental health treatment in 2019 . At that time, Lovisenberg, or more specifically,

clinic B, had already tested Braive with some waiting list patients. This method approval seems to have boosted the center's confidence in continuing with digital psychotherapy after ALEC was going to end in January 2020. For example, Informant 8 from the management group states the following:

“It has been very crucial for us that there was a decision coming from the government that internet treatment is approved as an ordinary treatment. At that time, the documentation basis was considered so thorough and so good that there was no longer any reason to call e-therapy experimental. I think we can all agree that this momentum, among other things, made it possible for us to offer e-therapy as ordinary treatment courses” (Informant 8, management group).

In other words, the management group perceived this method approval as an event that increased the legitimacy of e-therapy, and hence, beneficial for their long-term investment in digital psychotherapy. Similarly, Informant 7 from the management group express that this particular “momentum” gave Lovisenberg “a solid ground” to stand on. In addition, several clinic A and clinic B practitioners emphasize this official method approval when asked about the rationale behind the center's decision to integrate a digital treatment method. In this sense, this external development can be viewed as a highly crucial precondition for the center's implementation process of Braive. The latter also means that if not this method approval had taken place in 2019, Lovisenberg might not have been able to continue with Braive after the research project ended in 2020.

Interestingly, the management group highlights another factor that has influenced the center's decision to invest in digital psychotherapy. Participants from the management group explain with relief that developments in the public funding system for digital psychotherapy have made it more “economic beneficial” for Lovisenberg to offer internet-based treatment programs. For example, Informant 6 states the following about this topic:

“The idea of running internet treatments is also very much about creating a better relationship between the cost and the benefit of the offer. Just some years ago, the financial landscape for internet treatments was a joke. For us, it has been an enormous success criterion that while the project (ALEC) was ongoing, changes took place in the tariff system which made it more profitable for us to carry out treatment

programs in digital platforms. I mean, if there is going to be increased investment in the use of technology in mental healthcare, the funding needs to be in proportion to what it actually costs to carry out the technology” (Informant 6, management group)

To gain a better understanding of what the informants mean, the following paragraph seeks more details by drawing upon documents produced by the Norwegian health authorities.

The Norwegian healthcare funding system can essentially be divided into two parts: (1) The Basic Annual Funding (BAF) (Basisbevilgning) that supports the overall operation of healthcare services underlying the RHA, and (2) the so-called Activity-based funding (ABF) (Innsatsstøtt finansiering). The latter is a funding allocation that provides grants distributed by the RHA's to the specialized health care psychiatric care (The Norwegian Directorate of Health, 2019a). The ABF system is fundamentally based on a coding system called Diagnosis-related group (DRG). DRG is a patient classification system where hospital stays, or outpatient consultations are categorized into condition specific patient groups. Hospitals and community mental health centers (underlying RHAs) receive their reimbursement based on fixed DRG rates. Hence, the pre-set DRG rates indicate the amount of ABF allocation (The Norwegian Directorate of Health, 2019b).

The function of ABF within community mental health centers is to provide compensations for different types of consultations throughout the treatment course. The latter include telephone consultations, video appointments, and psychical consultations. Today, digital psychotherapy is *separately* financed under a so-called Special service group (SSG) (Særtjenestegruppe). This means that in addition to receiving general ABF allocation, Lovisenberg gets paid for each completed internet-based treatment programs (e.g., program for anxiety or depression).

Furthermore, the SSG too, is based on the DRG system. Numbers provided by the Norwegian directorate of health shows that the DRG index related to internet-based treatment programs for mental health disorders have increased significantly since 2018. For instance, in 2018, the DRG rate for internet-based treatment programs was 0,214 (The Norwegian Directorate of Health, 2017), and today, the DRG rate is 0,401 (The Norwegian Directorate of Health, 2019a). In practice, the nearly doubled DRG rate means that Lovisenberg receives a much higher reimbursement today than just two years ago. In this sense, a better financial landscape

for digital psychotherapy has made it more attractive for Lovisenberg to consider continuing with Braive after the ALEC project ended in 2020.

Through this section, we have seen that:

- Lovisenberg's participation in the ALEC-project reflects an early management commitment to implement digital psychotherapy and surface the management groups' perception that such a treatment method contributes to expanding access to mental health treatment in Norwegian psychiatric care.
- The official method approval of digital psychotherapy made it more legitimate for the center to provide such treatment.
- The positive change in the public tariff system for digital psychotherapy is believed to make it more economically beneficial for the center to conduct internet-based mental health treatment.

All in all, these underlying factors above are viewed as essential preconditions for the implementation process of Braive at Lovisenberg Community Mental Health Center. The next section describes how Lovisenberg *organized* the implementation of Braive.

5.2 Organization

As mentioned in the previous section, the respective center established and adjusted various local routines and procedures to “*prepare for an infrastructure designed to include e-therapy*”, as formulated by Informant 6. Organizing the implementation of Braive appear to be a dynamic process, or a “back and forth” act, as the respective center tested out solutions, made improvements, adjusted another solution, and so on. Essentially, it becomes clear that in order to implement Braive, Lovisenberg had to (1) face and handle various uncertainties, (2) recruit practitioners, and subsequently, (3) provide them training in digital psychotherapy and Braive.

5.2.1 Professional and practical assessments

Lovisenberg encountered different challenges parallel with gaining more experience of using Braive. For example, a significant uncertainty initially emerged was the center's

responsibility for their patients when the treatment course was moved to a digital format. As described by both the management and practitioner group, offering therapy through an online platform means that patients produce sensitive data at unpredictable times, all depending on when *they* decide to work with the programs. Informant 8 explains why this was perceived as a challenge:

“Who was actually responsible if patient data indicated a worsened condition? Or most importantly, what do we do if patient data imply suicidal thoughts on a Saturday evening, and we are not in the same room?” (Informant 8, management group).

Interestingly, this particular challenge eventually influenced Braive to develop and integrate an additional feature in the platform – an *alert-system*. The latter further mirror the collaborative relationship between Lovisenberg and Braive. Informant 9, the representative from Braive, describes this feature as follow:

“We created an alert-system that immediately and automatically notified a psychologist and a back-up psychologist if a patient indicated a worsened condition through the frequent questionnaires they answer. In addition, the system reminds the patient of emergency lines. This feature has been super useful for Braive, but especially critical for Lovisenberg since they are a part of the specialized public healthcare” (Informant 9, Braive).

The management group all agree that the alert-systems’ establishment has been crucial for Lovisenberg to continue using Braive. Moreover, speaking of patient-data, another related concern was that sensitive patient-data is produced in a platform owned by a commercial provider with programmers and developers located in different countries. Informant 8 and Informant 6 from the management group explain that this concern was a *“time-consuming process”*. The center had to make several risk assessments in collaboration with the hospital’s IT department and the data protection department. Furthermore, Informant 8 describes that the latter felt “new and uncertain”, as the center usually does not consider such issues related to digital privacy and possible data misuse. Informant 8 describe how they attempted to increase the safety for Lovisenberg’s patients that were going to use Braive:

“It was a time when the IT manager at our hospital considered to end the whole project. That was when he discovered that one of the services’ programmers were located in Vietnam. Yes, our assessments were at that level of detail. So, our IT manager said that if we were going ahead with this project, he demanded that it would be absolutely necessary that all programmers and everyone who has access to patient data, regardless of what kind of roles they have, must be within the EU countries”
(Informant 8, management group).

It becomes clear that uncertainties related to patient security and functionalities in Braive’s platform were something that gradually got solved and improved, reflecting how there are different *processes* within the implementation process as a whole.

5.2.2 Recruitment of practitioners

Recruiting practitioners can be understood as one of the most essential parts of the implementation process of Braive, as practitioners are the people who were going to use the innovation. The recruitment process at Lovisenberg seems rather casual – in contrast to the archetypical perception of the health sector as highly formal and “rule-based” in *everything* they do.

As mentioned earlier, the ALEC project was initially grounded at clinic B, meaning that there were two practitioners (Informant 4 and Informant 5) involved from the very start. Today, there are four practitioners at clinic B, including Informant 4 and Informant 5, that use Braive. The management group told me that clinic A practitioners’ recruitment process started with Informant 7 visiting the underlying units at the center. Informant 7 shared information about the role of technology in mental health treatment; digital psychotherapy; Braive; and personal experiences with using technology in clinical practice. In other words, it was somewhat random that it was the practitioners from clinic A who were recruited.

The management group expresses that the underlying agenda behind sending Informant 7 to disseminate information about technology and digital psychotherapy was to recruit practitioners to a new organizational structure within the center, namely, an *e-health team*. In addition, the management group envisioned that this team was going to implement Braive with a long-term perspective and commit to using this service 40% of their working week. For the practitioners representing clinic B, this was both obvious and perceived as an essential

way of organizing the implementation of Braive. However, for the practitioners representing clinic A, this particular message was rather unclear. The management group told me that they strategically recruited practitioners in an informal way because they did not want practitioners to feel “forced” to become a part of the e-Health team:

“It has been voluntary to join the e-health team. We didn’t target specific persons to join the team and never required people to report their interest. I don’t think it would have been wise to force someone who wasn’t interested, so I think everyone who signed up to this has to some extent been motivated or at least curious about e-therapy” (Informant 6, management group).

Informant 7 adds that they wanted practitioners who had prior knowledge about cognitive-behavioral therapy (CBT) – the psychological approach that Braive is based on. However, as eventually acknowledged by the management group through the interviews, and stated by the practitioners, this criterion was never explicitly stated in the informal invitation to join the e-health team. Nor were there actually any criterion at all, as the management groups’ strategy was to recruit practitioners based on *voluntary interest*. Informant 7 told me that it was not perceived necessary to overtly state that they looked for someone with knowledge about CBT as this is a prevalent psychological approach. Ultimately, the management group hoped that disseminating an open invitation would trigger interest in many practitioners. However, in reality, fewer individuals made contact than what was initially expected. The latter can be due to the somewhat unclear communication of the intention behind what the management group perceived as a recruitment process and what the clinic A practitioners perceived as “getting information about what technology can do”. Informant 2, a practitioner representing clinic A, express the following about the recruitment process:

“Eventually, we were told that this was a pilot project and something that we could take part in. It was unclear at first what the framework and intention of this were. Then, it turned out that from the management’s side, they wanted to establish a team, an e-health team at Lovisenberg. It also became clear that the idea was that we would spend 40% of our time on e-therapy. So, we all became a bit like, “wow, we did not expect that”. When we expressed the confusion, the management further adjusted the plan said that the 40% was more a goal than a requirement. Anyway, I am definitely

not close to the 40% target in my work. It is too difficult to motivate my patients”
(Informant 2, clinic A).

It seems like the confusion of what was a goal and what was a requirement made clinic A practitioners less motivated to use Braive in the beginning. Moreover, even when clarification was established, clinic A practitioners express that they were nonetheless afraid that their work would “get replaced by the digital” and felt uncertain because they were not trained to deliver treatment in such way. Here, it also becomes clear that balancing between *requirements, goals, and flexibility* is an important factor in such implementation process. When practitioners from clinic A were recruited to the e-Health team, four practitioners were already using Braive at clinic B.

The management’s initial plan was to expand the use of digital psychotherapy during autumn 2020. However, when the Covid-19 occurred, the management decided to expand the service use much earlier than planned. Informant 8 from the management group express that it was *“obvious that e-therapy had to become a new measure when we couldn’t meet our patients face-to-face”*. At first, the occurrence of Covid-19 decreased the number of patient referrals from GPs, which meant that Lovisenberg suddenly had more capacity to train practitioners in using Braive. While both the management group and clinic A practitioners perceived it as necessary to turn to digital tools in the wake of Covid-19, clinic A practitioners describe the recruitment process as haste:

“When I signed up for this, the idea was that I could see what this was, but suddenly I became a part of the e-health team. It was also stated in the document that e-therapy should be 40% of what I do. I immediately thought, “what, I didn’t sign up for this?”. In the beginning, everything was very vague, and I felt kinda insecure. But since it was Covid, I felt I had to just do it” (Informant 3, clinic A).

Covid-19 is frequently brought up by clinic A practitioners as a factor that made them continue with being part of the e-health team. Moreover, while clinic B practitioners saw a clear advantage of providing Braive to their patients, clinic A practitioners initially *wanted to* join the e-health team because they were curious about e-therapy, and felt they *had to* utilize Braive because of Covid-19.

To summarize this sub-section, two clinic B practitioners were invited to be part of the ALEC-project from the very beginning, meaning that at the time I interviewed them, they had already been using Braive in about two years. Moreover, they were also aware of the management group's desire to establish an e-health team. On the other hand, clinic A practitioners were recruited to the e-Health team after the ALEC-project ended. The relatively sudden recruitment of clinic A practitioners was based on the external pressure of Covid-19, and the process was organized in a rather informal way. Although the management group strategically invited clinic A practitioners to be part of the e-health team based on voluntary interest, there were initially some misconceptions among clinic A practitioners related to goals and expectations. Nevertheless, since the Covid-19 made it challenging to continue with the usual face-to-face interventions, clinic A practitioners believed that it was important to try this new digital service.

5.2.3 Training of practitioners

Now that the e-health team started to take form, the next step was to provide training in using the service. The training essentially included three overlapping parts: (1) an introduction to digital psychotherapy based on presentations and reviews of existing clinical research, in addition to presentations of previous evaluation studies of digital psychotherapy implementations in Scandinavia. The two practitioners from clinic B had some knowledge about digital psychotherapy before the ALEC-project. Furthermore, two of the three included practitioners from clinic A told me that they have heard about *e-Meistring* at the university during a brief introduction to e-therapy. However, none of the practitioners were familiar with Braive before the ALEC-project, nor did any practitioners have any previous experience with digital psychotherapy in practice. Subsequently, the second part of the training included (2) physical demonstrations of the various programs in Braive, mainly provided by Informant 7 and Informant 9 – the representative from Braive. In addition, the practitioners got access to a so-called *clinical manual* – a step-by-step guide to how to navigate as a practitioner in Braive's digital platform. Informant 9 describes the clinical manual as "*sort of a syllabus for the practitioners – but in a digital form*".

Generally, the practitioners all seem to perceive the physical demonstrations of Braive as necessary and valuable. Furthermore, two of the practitioners additionally state that they perceive the clinical manual as useful in situations where they have to double-check the aim behind certain features included in the programs' modules:

“I sometimes check the manual if I feel uncertain about the intention behind a certain component, whether a video or an audio track. It is so important that I as a psychologist, fully understand the various features in the content in order to stay prepared for potential questions from patients” (Informant 5, clinic B).

Similarly, Informant 4 explains that the clinical manual is useful in the way that:

“Everything is logically explained right in front of me, so I don’t need to remember all the details as I can log into my therapist account whenever and find the descriptions” (Informant 6, clinic B).

In addition to the overview of digital psychotherapy, the demonstration of the relevant service, and access to the clinical manual, the training also included (3) administrative and professional guidelines. The latter included information about how treatment courses in Braive should be registered in the local patient system, how this type of treatment should be coded (ref. DRG, see section 5.1.2 *Public policy adjustments*), and how such treatment courses should be invoiced. These guidelines were gradually established by the management group, as described in section 5.2.1 *Professional and practical assessments*. Furthermore, the introduction of these guidelines was perceived as new, as the practitioner previously only had to relate to an administrative “recipe” applicable to the standard face-to-face interventions.

Like most psychiatric treatments at Lovisenberg, the practitioners were reminded to individually assess whether digital psychotherapy is a method suitable for the relevant patient. Subsequently, the training also involved discussions about how to best structure the communication with patients. Using Braive means that the treatment course contains fewer actual conversations between the practitioners and the patients. Like many other digital psychotherapy services, the communication with patients through Braive includes telephone dialogues (typically 20-minute call, the frequency depending on patients’ needs), and text-based feedback on patient’s “homework”. Both clinic A and clinic B practitioners perceive such way of communication that inherently comes with digital psychotherapy as an *“unusual and special way of conducting psychological follow-ups”*.

Eventually, since none of the practitioners had any previous experiences with delivering treatment online, all practitioners seem to agree that the training has been beneficial, especially the review of clinical research and the physical demonstrations of Braive's programs. Interestingly, it becomes clear that perhaps the most valuable part of the training was to gain confidence in this new "role" that came with the use of Braive. Clinic A practitioners indicates that building a sense of *reassurance* was important:

"I had no clue how to behave as a digital psychologist, so the training was much needed to clarify the many uncertainties I had in mind. However, the technical stuff was actually not that surprising, as the design of Braive is very intuitive. At first, I doubted the effects of e-therapy, and to be honest, I kinda still am uncertain – with some patients. But, "Informant 7" has done an excellent job in taking care of us and making us feel more reassured (Informant 1, clinic A).

Relatedly, another practitioner from clinic A states the following:

"Going through the programs in plenary made it less overwhelming to deal with the service. And when I look back, I believe that the positive energy from "Informant 7" helped to settle some of our skepticism little by little"
(Informant 3, clinic A).

Eventually, the practitioners told me that they never really gave any formal or structured feedback on the training quality. However, it seems that the management group caught the perceived value of the psychical demonstrations, especially the *plenary discussions* that followed. Nevertheless, the management group decided to continue with the psychical gatherings and subsequently established monthly e-health team meetings. Once a month, the team meets for a 3-hour extended gathering to discuss experiences and challenges. These meetings are highly appreciated by both the management group and the practitioner group:

"In the monthly meetings, we open for discussions related to what the practitioners can do if the patients do not answer messages in the platform, or what they can do if they recognize a decrease in patients' motivation. It is also common that we discuss what types of programs best suit different mental health conditions. I think such low-threshold meetings remind us that we're on the same page (Informant 7, management group).

“These meetings build a sense of community. To be honest, I sometimes feel very lonely working as a psychologist. I have to make many decisions and assessments alone without actually having someone to overwatch or guide me. And e-therapy makes it even more lonely, as I see my patients less frequently. It feels very safe to meet everyone once a month” (Informant 2, clinic A).

The “sense of community” is a repetitive description of these monthly meetings. To my understanding, the latter seems to represent a direct link to the “gaining more confidence in e-therapy” aspect. And accordingly nurture the practitioners’ confidence in being a “digital psychologist”. Furthermore, some of the informants also mention that in addition to these team meetings, the e-health team also has a digital communication group (“Slack”). As described by Informant 7 and Informant 9 (when the ALEC-project was still ongoing), there was much activity in this group in the beginning. However, Informant 5 from clinic B adds that they do not remember the last time they checked this group, as they have so much other patient-related issues to consider and follow up. Similarly, Informant 1 from clinic A express that they forget that this group actually exists as there are so many new guidelines and practices to face in light of this implementation.

To summarize this category, it seems that the main parts of the training can be understood as reviews of existing clinical research on digital psychotherapy and the physical demonstration of Braive’s programs – provided by Informant 7 and Informant 9. Moreover, as none of the practitioners have had any practical experiences with delivering treatment through an online platform, the introduction of Braive and the new “roles” and guidelines that come with the implementation have, not surprisingly, been perceived as new and described by some of the informants as “overwhelming”. Moreover, additional supporting training was access to Braive’s clinical manual, which clinic B practitioners perceived as helpful in situations where they are uncertain about the intention of specific features in the program’s content. On the other hand, clinic A practitioners seem to perceive the development of confidence in e-therapy as the most valuable aspect of the training. Hence, the later established monthly team meetings facilitate an arena for open discussions and sharing of experiences, which is believed to enhance the practitioners’ “sense of community”.

5.3 Using the service

Since organizational innovation implementation is much about employees' consistent use of the innovation (Helfrich et al., 2007; Klein et al., 2001), this section analyzes the practitioners' experiences with using Braive in practice. Through the analysis, I found that in this particular case, using a new service comes with *new tasks and responsibilities* that appear connected to the available *time* and development of *motivation*.

5.3.1 New tasks and responsibilities

Although clinic A practitioners express more skepticism towards digital psychotherapy than clinic B practitioners, clinic A practitioners eventually envisioned that the implementation of Braive would lead to a less heavy workload and that patients would seamlessly become more independent in the treatment course. While the latter is described as the current situation for practitioners at clinic B, the reality clinic A describes seems distant from what they initially pictured – or at least hoped.

The goal (not requirement) of working 40% with Braive is achieved by the two practitioners from clinic B, where Informant 5 states that half of the week is dedicated to Braive patients, and Informant 4 explains that they seldom work *less* than 40% with Braive. I was further interested in the situation among the other practitioners from clinic B that were not included in this thesis. However, when I asked the management group about how much the other clinic B practitioners commonly used Braive, they seemed unsure as the answers were “*It is up to them how they schedule their work*”, and, “*I think each practitioner here has a couple of Braive patients, but I don't have the overview of the total patients each practitioner have in Braive*”. In this sense, it seems that the practitioners and the management group rarely share such detailed information, albeit the monthly team meetings.

Eventually, the included practitioners from clinic A told me that attempting to reach the 40% goal has been a challenge and that the latter is perceived to bring on more work. It becomes clear that the two clinics treat *different* patient groups, which might explain why the same training and support for both these clinics have led to such different outcomes. The patient group at clinic A has heavier symptoms and a lower functioning than the patients who receive treatments at clinic B. Hence, clinic A patients commonly need more face-to-face support in addition to using Braive, while patients at clinic B often complete the digital treatment course with less practitioner support. Clinic A practitioners further describe that the usual 20-minute

telephone conversation or the short text follow-ups are seldom perceived as enough for their patients. The latter means that clinic A patients often need a blended treatment course, where they meet for face-to-face interventions in addition to working in Braive. Such blended treatment course is described by clinic A practitioners as a challenge as much of the time in physical consultations goes to motivating the patients to work more in Braive. Accordingly, less time is used on *actual* therapy. *“I thought this would make my position easier, but honestly, I feel that I have a million new things to consider”*, says Informant 1 from clinic A. Similarly, another practitioner from clinic A states the following:

“You do not get the organizational benefits of e-therapy if the patients themselves do not bother to work in such service. Right now, it is just a bunch of extra work because this is not just online treatment, it is also checking what patients have done in the platform, writing feedbacks, and on top of that, regular treatment. All with one single patient” (Informant 2, clinic A).

Relatedly, another practitioner from clinic A states the following about delivering online treatment:

“Offering treatment in this way, or as I view it, providing guidance to the patients, is about signing into my therapist account in Braive and assess what they have been working on since last time, and comment on their work. To comment on their work, I need to have more experience with the program, and I need to become fully knowledgeable on how to work with text. I’m not used to text. I’m used to communicating verbally and understand their conditions through non-verbal signs in psychical appointments. Now I actually spend more time evaluating their work and think about how I should formulate my textual feedback” (Informant 3, clinic A).

On the other hand, clinic B practitioners perceive Braive as a tool that helps them to get a holistic overview of the treatment course:

“I find it valuable that both my patients and I can see the recovery progress so clearly in Braive. In this way, I gain a much better overview of my patients’ challenges and where we are in the process” (Informant 5, clinic B).

Another new task that came with the implementation of Braive was that all practitioners had to register the time they use in Braive. The latter include formally registering when they sign into the platform and checking patients' results, the time spent on writing feedback, and so on. Naturally, for clinic B practitioners who already did this in 2018, the latter appear to be a routine they remember to do in 2020. However, for clinic A practitioners who experienced somewhat unclear communication when recruited to the e-health team, all these new tasks and responsibilities seem more of a challenge. For example, during the interview with Informant 3 from clinic A, they said:

“Oh, speaking of checking patients' result, I came to remember that there are actually many hours I have forgotten to register” (Informant 3, clinic A).

The above statements indicate a difference in how clinic A and clinic B practitioners perceive the use of Braive in their work. While clinic A practitioners perceive the integration of this service as something that leads to more work (e.g., writing feedbacks, motivating the patient, register work hours in a new way), and explains that they find it challenging to reach the 40% goal, clinic B practitioners with more time at hand (due to less ill patients), perceive that such service enhance the overview of the patients' recovery process. Furthermore, as we shall see in the next sub-section, *time and motivation* are two interlinked factors that influence practitioners' innovation use.

5.3.2 Time and motivation

The management group describes that the practitioners ultimately get the freedom to decide how much time they are willing to spend in getting familiar with Braive, and how much time they spend on Braive treatments (albeit the 40% goal). Informant 7 explicitly states that the practitioners have to *“organize their own schedule and make time for this”*. Eventually, while the management group expresses that the purpose of allowing such freedom is to enhance practitioners' flexibility and sense of autonomy, the practitioners, on the other hand, describe that:

“There are constantly many issues with patients that I can and should dig deeper into, so I can't magically make up more time to become familiar with the programs. If, for example, my boss said, “you get fewer patients than the others because you should spend Mondays to get familiar with Braive”, then

I think it would have been more motivating for me. Now, I'm thinking that I can spend time on this (Braive) at any time, but also spend time on anything else, which is just as important” (Informant 2, clinic A).

The same informant told me that they received some coupons from Braive, which they used to “treat” family members and practice feedback writing skills – outside of usual worktime. The latter reflects some degree of commitment, albeit the statement that the current situation is somewhat less motivating than anticipated.

According to Informant 2 from clinic A, every practitioner received such coupons. However, the rest of the included practitioners from clinic A told me that they never managed to squeeze in any time to practice or use the coupons. The issue of time is not surprising, as Lovisenberg Community Mental Health Center, and especially clinic A, is a very fast-paced and busy unit. Compared to clinic B that treats a patient group with milder symptoms, clinic A practitioners have less time to experiment with the service. Informant 8 from the management group states the following about the connection between the patient group and time to use Braive:

“Clinic B does not have psychosis patients and serve suicidal patients or personality disorder patients. In this sense, clinic B doesn't deal with the most complex cases that clinic A does. Such complex cases often take a lot of time, so I think perhaps it has been more challenging for clinic A to get used to Braive” (Informant 8, management group)

Furthermore, time seems to affect the practitioners' motivation in using Braive directly. For example, Informant 1 from clinic A says that:

“The little time we have available makes this such a burden that somehow disturbs the idea of what digital psychotherapy is and how this can help to treat more patients” (Informant 1, clinic A).

In this sense, it can be understood as essential for the management group to consider the balance between the freedom to schedule time and the requirement of innovation use.

Overall, every included informant believes that digital psychotherapy and Braive have the *potential* to treat more patients. However, the management group and clinic B practitioners seem surer of the latter than clinic A practitioners. One informant from clinic B told me that they are motivated to use Braive because they see it as part of the solution to the resource obstacles in the Norwegian healthcare system:

“My experience with using a digital service in therapy is very positive. Patients are usually satisfied, and I am interested in solving the Norwegian healthcare systems’ resource issues. Today, we have too many patients and too little capacity. I genuinely believe digital psychotherapy can be a sustainable solution” (Informant 5, clinic B).

Interestingly, it becomes clear that what clinic A practitioners are most skeptical about is the psychological approach (CBT) that Braive is built on, and not necessarily digital psychotherapy as a method itself:

“I think my motivation is influenced by the fact that I’m not sure of the long-term effects of cognitive-behavioral therapy, and most importantly, I am very relation oriented in my practice, and I’m not sure if cognitive-behavioral therapy is the best approach for the illest patients” (Informant 1, clinic A)

In other words, it seems that the use of this service is perceived as something that might take away some of the human relation aspect that is particularly emphasized by clinic A practitioners. However, another informant from clinic A describes that albeit the skepticism towards CBT, they eventually become motivated in using Braive when they witness a positive patient recovery progression:

“Although I do not favor cognitive-behavioral therapy, I certainly believe that this is a very efficient method for some patients. It makes me more willing to suggest Braive for future patients when existing patient gives me positive feedback. It reminds me that “I’m not always the expert after all!” (Informant 3, clinic A)

Positive experiences with using Braive are consistently mentioned by both the management and the practitioner groups in the context of patients’ motivation and satisfaction. In this sense, patients’ experiences can be understood as one of the largest factors affecting

practitioners' motivation to use such a service. While clinic B practitioners argue that their patients feel more involved in the treatment course by taking responsibility for their own recovery process, clinic A practitioners often struggle to motivate their more ill patients:

“Patients are commonly eager at first, but this slips out during the course. That is difficult for us as psychologists. If we use Braive in combination with psychical appointments, much of the focus in the face-to-face meeting goes to reminding them of using the service. That balance is quite challenging” (Informant 1, clinic A).

This chapter has presented a detailed description of the innovation implementation process of Braive at Lovisenberg Community Mental Health Center. In the next chapter, the most essential factors that emerged from the analysis are discussed in light of the theoretical framework and the proposed research questions.

6 DISCUSSION

6.1 RQ 1: Which factors affected Lovisenberg's decision to adopt Braive?

The theory conceptualizes adoption as part of the implementation process (Helfrich et al., 2007; Klein & Sorra, 1996; Rogers, 2003), or sometimes even as the very first decision that drives the dynamic constitution of an innovation specific *implementation climate* – the abstraction of employees' shared views of whether the given innovation is perceived as supported and/or rewarded in the organization (Helfrich et al., 2007; Klein & Sorra, 1996). In reality, adoption and implementation prove to be two highly interrelated concepts that include many overlapping mechanisms.

Through the analysis, it becomes clear that the adoption of Braive was nonetheless an “authority-based decision process” (Rogers, 2003, p. 436), where the management group decision to participate in the EU-funded ALEC-project as the clinical research partner, can be viewed as the center's initial entrance to digital psychotherapy. Furthermore, the management group viewed ALEC as a unique opportunity to gain practical experiences with digital psychotherapy, which is viewed as part of the center's vision to invest in a long-term implementation of such treatment method. Eventually, it becomes apparent that there were additionally two external developments that affected the center's decision to adopt Braive.

To my understanding, the combination of (1) the official method approval of digital psychotherapy (Ørjasæter Elvsaas et al., 2018) and (2) the positive changes in the tariff system (The Norwegian Directorate of Health, 2017, 2019b) increased the management groups' perception of the innovation's *relative advantage*, that is, the degree to which the innovation is understood as compatible with the center's vision, or the extent to which the innovation is perceived as something that brings benefits to existing practices (Greenhalgh et al., 2004; Rogers, 2003). According to the theoretical underpinnings represented in Helfrich and colleagues' framework (2007), both these developments can be understood as *resource availability* that contributes to drive the implementation process.

Interestingly, when these external developments took place, the management indicates a perception of the innovation as something that would (1) make it even more legitimate for Lovisenberg to offer digital psychotherapy and (2) more economically beneficial for the center and the general hospital to conduct digital psychotherapy courses. In other words, these

events contributed to a more evident relative advantage that Braive represents in the local context at Lovisenberg. In turn, the apparent relative advantage made the center more confident in providing digital psychotherapy as part of their ordinary treatment offer. Moreover, the latter certainly reflects the theoretical argumentation that innovation adoption and implementation in healthcare organizations are most often driven by scientific evidence and policies (Länsisalmi et al., 2016).

Although it is apparent that the participation in the ALEC-project and the two external developments have been crucial factors that together affected the center's decision to adopt and subsequently implement Braive, I argue that another important factor influencing the management group's decision is rooted in their perception that digital psychotherapy and Braive alike, is understood as a solution to today's service accessibility challenges that Norwegian psychiatric care face. For example, both the management and the practitioner groups frequently view their local actions as part of the larger system. They indicate that they believe such utilization of digital solutions within mental healthcare produces values for their patients. In other words, patients' expectations and needs are highly emphasized at Lovisenberg, the community mental health center that is a part of the public healthcare system.

6.2 RQ 2: How do the management and 'champion' influence the implementation process?

From a theoretical point of view, actors in the management group can be understood as *change agents*, that is, individuals who have the formal authority to direct and guide organizational change (Rogers 2003). In this case, organizational change refers to the introduction and implementation of Braive. As we have seen through the analysis, the process of implementing a brand-new service indeed required substantial changes in the center's usual practice. The implementation of Braive, in the local context at Lovisenberg, represents new tasks and responsibilities that are discontinuous with previous ways of delivering mental health treatment (Greenhalgh et al., 2004, p. 582). Besides, the latter required a combination of various implementation policies and practices (IP&Ps). Subsequently, the management group has played an essential role in mediating crucial IP&Ps, such as the establishing new administrative and practical guidelines and the extension of the training to include the monthly e-health team meetings. Interestingly, Weiner and colleagues (2008) recognized, in-person employee training might be more effective than text-based manuals of how to use the

innovation. As we have seen through the analysis, the initial psychological demonstrations of Braive's programs were generally perceived as more valuable than the clinical manual provided in Braive's platform.

According to the theory, the more IP&Ps that is established by the management group, the better are the chances to achieve employees' consistent use of the given innovation (Helfrich et al., 2007; Klein & Sorra, 1996; Knight & Klein, 2005; Weiner et al., 2008). However, in this particular case, and I believe, in the context of other fast-paced healthcare organizations, "the more, the merrier" approach might not always be beneficial. As we have seen through the analysis, several IP&Ps was rather perceived as overwhelming. For example, clinic A practitioners described that they struggled to experience the intended benefits of, for example, the flexible work schedule and the digital communication group. Eventually, I believe that establishments of innovation specific IP&Ps require careful evaluation by the management group.

Furthermore, it is essential to emphasize the importance of clear communication of the intention and goals behind both the innovation implementation and the given IP&Ps (Birken et al., 2013, 2015). For example, when clinic A practitioners were recruited to the e-health team, a high degree of ambiguity surrounded them. The management groups' intention and expected goals were perceived by clinic A practitioners unclear, which rapidly led to confusion when clinic A practitioners realized that they were now part of a brand-new team. Hence, the balance between what should be presented as goals and what should be presented as requirements can be understood as an important aspect to consider.

The management group has essentially influenced the implementation process mainly through a combination of task and relation behaviors (Birken et al., 2013, 2015). In this case, it becomes apparent through the analysis that the relation behavior, that is, the management's behavior of empowering the frontline employees, has perhaps been one of the most critical factors. For example, an essential finding resulted from the analysis is the great value and appreciation of the monthly e-health team meetings. All included informants indicate that these meetings help to nurture the sense of community. The latter is particularly emphasized by clinic A practitioners as something that enhances their sense of reassurance.

Furthermore, the managements' early commitment to implementation that is partly reflected in their decision to employ Informant 7 has significantly impacted the implementation process. Firstly, Informant 7 can be understood as a middle manager that functions as the link between the other actors in the management group and the practitioner group (Birken et al., 2013, p. 31). Secondly, Informant 7 can be perceived as an *innovation champion* that supports the implementation process by motivating and encouraging practitioners to use Braive (Helfrich et al., 2007; Klein & Sorra, 1996). Through the analysis, we have seen that Informant 7 is viewed by the management group as a valuable resource contributing to pushing forward the implementation process by disseminating their own experiences of technology use in clinical practice. Moreover, it becomes apparent that Informant 7 has influenced the process positively by functioning as a supporter of the practitioners when facing doubts and uncertainties. It would have been interesting to see how a champion might have influenced such an implementation process if the champion were one of the practitioners and not in the management group.

6.3 RQ 3: How do practitioners' innovation-values fit influence the implementation process?

It becomes apparent in the analysis that none of the included informants from the practitioner group had any previous experiences with practically using digital psychotherapy or Braive. According to the theoretical argumentation, in light of innovation implementation, employees are likely to experience uncertainty and form judgments about the extent to which the given innovation is compatible with their existing beliefs and values (Hurst, 1982; Jalonen, 2011; Rogers, 2003). Indeed, the latter was predominant in the respective implementation process too.

On the one hand, the innovation-values fit between the management group and Braive, as well as between clinic B practitioners and Braive mirror a solid innovation-values fit in the sense that both these groups perceive digital psychotherapy as something that supports the fulfillment of their professional values, and also support the broader vision of a more accessible mental healthcare (Helfrich et al., 2007; Klein & Sorra, 1996). The fit between management groups' values and Braive becomes evident in their descriptions of the perceived relative advantages of the innovation, as well as in their commitment to implement this service by establishing IP&Ps that contributed to the innovation specific implementation climate, and accordingly, reflected the center's vision of a long-term investment in digital

psychotherapy. Furthermore, the fit between clinic B practitioners and Braive appear when they expressed their belief in the service and indicated a consistent innovation use as they both achieved the 40% goal of using Braive. However, it should be noted that the management group does not supervise how often the practitioners' practice in Braive, or the status of how many Braive patients the practitioners have.

On the other hand, the innovation-values fit between clinic A practitioners and Braive seem vaguer, as this group's views indicate more doubt. The innovation theory suggests that healthcare professionals work evidence-based in almost everything they do. Through the analysis, we have seen that the evidence-base supporting digital psychotherapy has increased all informant's belief in such a treatment method. However, we have also seen that scientific evidence support alone is not sufficient alone in terms of motivation to further drive the organizational innovation implementation process. As stated by Ramanujam and Rousseau (2006), healthcare challenges are "organizational not just clinical".

It is interesting to see that the same IP&Ps established by the management group influence the implementation process differently at clinic A and clinic B. However, such differences between organizational groups are expected, as recognized by Klein and colleagues (1996) and supported by Helfrich and colleagues (2007). In this case, we have seen in the analysis that one explanation of the difference can be that these underlying clinics treat different patient groups. For example, while clinic A practitioners deal with a more ill patient group that is understood as more "complex cases" that require more time, clinic B practitioners, on the other hand, have more time at hand as their patients have milder symptoms. In addition, it becomes clear that it is more challenging to motivate patients with heavier symptoms to work independently in a digital platform. Another explanation of the differences between clinic A and clinic B is that these groups were introduced to Braive at different times in the implementation process.

While included practitioners from clinic B were involved in the ALEC-project from the start, clinic A practitioners got recruited to the e-health team later in the process and earlier than planned due to the occurrence of Covid-19. In this way, it makes sense that clinic B practitioners had more experience using Braive, which made them more used to the new roles, routines, and practices that came with the innovation. Although it does not show in the raw data nor the analysis, I believe that it can be likely that clinic B practitioners experienced

uncertainty in the very beginning at the implementation too. However, when asked about the latter, clinic B practitioners did not provide any fruitful descriptions, perhaps because they have been influenced by their fresh and positive experiences with Braive, and that those memories of what they felt in 2018 naturally fade.

Clinic B practitioners view the relative advantage of the innovation as something that helps overcome the barriers to face-to-face interventions related to time and accessibility.

Moreover, they also emphasize the design of Braive as organized, practical, and clear.

Interestingly, through the analysis, it becomes clear that the fit between the given innovation and practitioners' values can be understood in many *layers*.

The first layer is digital psychotherapy, the relatively novel psychological treatment *method* that Braive represents. Clinic A practitioners generally emphasize the value of digital psychotherapy in expanding access to mental healthcare. However, in the local implementation process at Lovisenberg, such a method is rather perceived as challenging to utilize due to the struggle of motivating the more complex patient groups. The second layer is cognitive-behavioral therapy (CBT), the grounded psychological *approach* that Braive is built on. Clinic A practitioners recognize such an approach as beneficial in general; however, they believe a more *relational approach* is often more valuable for their lower functioning patient group.

Given the challenge to motivate their patients, the current situation is that they often have to combine face-to-face interventions with Braive, which is rather perceived as exhausting. The third layer, interlinked to the two others, is the new tasks that comes with *delivering* treatment online. For example, the practitioners have to become familiar with text-based feedback, which is quite discontinuous with their previous practice. As stated by one of the informants, they are trained in verbal communication, and not structured text-based comments. Again, as clinic B have practiced the latter since 2018, they seemed comfortable with such practice at the time when the interviews took place. However, for clinic A practitioners, these new roles, tasks and responsibilities that comes with Braive is still perceived as new. The latter in turn influence their innovation-values fit, which again, influence the implementation process in the way that they use the innovation less frequently than what the management group anticipates. Again, it should be noted that the balance between what is required and what should remain flexible seem essential to consider.

It should also be noted that innovation-values fit is dynamic because the perception of the innovation's relative advantage changes much determined by patients' experience and feedback. When patients indicate positive recovery progress using Braive, all practitioners seem to become more motivated to recommend such treatment method to future patients.

7 CONCLUDING REMARKS

Digitalization within mental healthcare continues to become a significant development that contributes to expanding access to mental health treatment and overcoming citizens' obstacles to seeking professional help (Andersson et al., 2014, 2016; Arnberg et al., 2014; El Alaoui et al., 2015). Against this background, this thesis has argued that it is crucial to understand better how various technologies become implemented in the traditionally "offline" and fast-paced mental healthcare.

The purpose of this study has been to explore the implementation process of the digital psychotherapy service Braive at the Oslo-based Lovisenberg Community Mental Health Center. The specific intention has been to share an understanding of how the management, the champion, and the practitioners that were directly involved in the implementation, has experienced the process of utilizing a brand-new service. In order to do so, I examined the overall research question: *"How do organizational factors influence the implementation process of a digital psychotherapy service in a Norwegian community mental health center?"* – through three underlying research questions:

RQ1: Which factors affected Lovisenberg's decision to adopt Braive?

RQ2: How do the management and 'champion' influence the implementation process?

RQ3: How do practitioners' innovation-values fit influence the implementation process?

Through RQ1, we have seen that the initial decision to adopt Braive was rooted in Lovisenberg's participation in the EU-funded ALEC-project. This particular project is thus conceptualized as Lovisenberg's entrance to the later implementation of Braive at clinic A and clinic B. Moreover, we have seen that the official method approval of digital psychotherapy (Ørjasæter Elvsaas et al., 2018) influenced Lovisenberg in the sense that this event made it more legitimate for the center to provide digital psychotherapy. Besides, another external development, that is, funding system changes for digital psychotherapy (The Norwegian Directorate of Health, 2017, 2019b), were perceived favorable as this event made it more economically beneficial for the center to conduct digital treatment courses. These factors are additionally believed to contribute positively to the perception of the innovation's

relative advantage, which, in turn, proves to enhance the management groups' confidence in implementing Braive with a long-term perspective.

Through RQ2, we have seen that the management groups' early commitment to implementing Braive is reflected through their employment of Informant 7 and the establishment of supporting IP&Ps. The latter has influenced the process by constituting a climate for implementation (Helfrich et al., 2007; Klein & Sorra, 1996). Moreover, we have seen that some IP&Ps had more significant effect than others. In addition, we have seen that Informant 7, viewed as the innovation champion (Helfrich et al., 2007; Rogers, 2003), has contributed positively to the implementation process by being a supportive actor that motivated the practitioners to use Braive. However, the management groups' overall goal of the implementation and the intention behind the given IP&Ps were perceived unclear by clinic A practitioners, which brought uncertainty and doubt among this group, which in turn, partly influenced their attitude towards the implementation. Given the high degree of uncertainty, it also became clear that the most critical value of the managements' role in the process was to nurture the practitioners' sense of community that made them feel more reassured and more committed to the belief of providing Braive.

Through RQ3, we have seen that a robust innovation-values fit contributes positively to the implementation process by making the practitioners more committed to innovation use (Helfrich et al., 2007; Klein & Sorra, 1996). However, to date, clinic B practitioners indicate a more consistent innovation use than clinic A practitioners. Moreover, we have also seen that innovation-values fit can be understood in many layers. I argue that the innovation comes with different "coats" of new tasks, practices, and responsibilities. However, for both clinic A and clinic B, the motivation in using the given innovation is largely determined by patients' feedback and experiences.

Given that clinic A practitioners treat patients with heavier symptoms, it is perceived more challenging to motivate patients at this clinic to work independently. On the other hand, in this specific case, Braive is experienced by clinic B practitioners as suitable for their patient group with milder symptoms. Perhaps such service, in this specific case, might produce the most value as a preventive offering for waiting list patients or patients with milder symptoms that can recover with less direct communication with practitioners. However, the latter is not any final argumentation, and therefore needs further examination. Nevertheless, I believe that

the implementation process of Braive at Lovisenberg Community Mental Health Center can be understood as an ongoing process. Just as how the center adapted, adjusted, and established various routines and practices parallel with gaining more experience with using Braive, I believe that the respective implementation process is a process that is continuously evolving and changing.

7.1 Implications for practice

Through exploring the innovation implementation process at Lovisenberg, I have learned that such a process requires holistic approaches and careful coordination between different levels of organizational units. Telepsychiatry implementation projects include staff from both the management, IT department, and other underlying clinics. The latter means that those in charge of organizing and guiding the process must find ways to integrate different skills, priorities, and knowledge to facilitate the collaborative process. I have the following suggestions for future E-mental health innovation implementation practices:

Firstly, decision-makers (those in charge of organizing the process) should form an organizational team dedicated to the practical implementation. In a process where frontline employees are most likely going through phases of uncertainty, acceptance, doubt, and adaptation – building a sense of community has proven to nurture employees’ motivation to use the given innovation. Ultimately, moral support and empowerment are suggested to be important factors to consider.

Speaking of motivation, the second suggestion is to facilitate sufficient time for employees to become familiar with the given innovation. Decision-makers should recognize the layers of “newness” that comes with the innovation and understand how this affect frontline employees’ daily work. One way to build familiarity is to arrange regular team-meetings where experiences and issues can be shared and discussed. Also, perhaps parts of the meeting should be dedicated to practically exercising in the given service.

Thirdly, the different interests among organizational groups should be recognized, respected, and managed. Identifying various groups’ needs will, therefore, be beneficial to ensure a lean implementation process. The latter is also related to a clear articulation and definition of goals, responsibilities, and expectations to avoid misconceptions, which can be a barrier for consistent innovation use.

Finally, *know your champions*. I suggest it would be beneficial to identify individuals who can “champion” the implementation process by advocating for *change* and function as a direct link between the hospital or clinic’s executives and frontline employees.

7.2 Limitations of thesis and suggestions for future research

When critically considering the present thesis, there are several methodological and theoretical limitations I would like to highlight. Eventually, I believe the limitations of this thesis can function as a starting point for future research.

Firstly, concerning the methodological limitations, the modest subject sample of participants included nine informants. Although the sample size is viewed as representative in the sense that included participants have central positions at Lovisenberg and were directly involved in the implementation process of interest, I believe that it would be valuable to examine the perspectives and experiences of other actors at Lovisenberg, such as the colleagues of the included practitioners’, the IT department, and the data protection department. In addition, it would have been valuable to include perspectives of representatives of the broader healthcare system such as political decision makers, GPs, and of course, patients.

Moreover, the single-case study design this thesis represents limits the applicability of the findings. For future research, I believe that it would be valuable to compare findings from this study with similar implementation processes within Norwegian mental healthcare. Also, it is recognized that qualitative analyses naturally have the potential to be influenced by coder bias. Hence, I would like to note that my interpretations of the data may not be shared correctly by the included participants. Nonetheless, by applying an inductive approach to analyze the data, I attempted to stay faithful to the informants’ stories. Also of note, the semi-structured interviews were designed specifically for this case study, and there is therefore a possibility that the findings might have varied if different questions were asked. For future research, it is also believed that using different data collection strategies may help to develop a more holistic view of digital psychotherapy implementations.

Last but not least, due to the present thesis’ scope, limited attention was paid to the collaborative partnerships that took place in the ALEC-project. As Norwegian healthcare actors often collaborate with private service providers, I argue that studying such partnerships from an innovation perspective could be an interesting topic for future research.

Secondly, concerning the theoretical limitations, the present thesis has focused on organizational-level theories. Although the chosen theories are viewed as appropriate for the given purpose and the stated research question, I would like to remind the reader that an implementation process of digital psychotherapy or other technologies is likely to be presented differently depending on both the theory applied, the local context, and the relevant healthcare system. Some theories put less emphasis on the dynamics between the different organizational groups and more emphasis on, for example, the technical aspects of the given innovation. Such factor is believed to impact the understanding of the implementation process differently from what has been presented in this study.

Research on digital psychotherapy implementation in the Norwegian healthcare system is still scarce, and further understanding is needed to improve practical implementation processes. Hence, it is believed valuable to examine organizational factors involved in the implementation process with different theoretical conceptualizations. Moreover, since this is a relatively new field, I believe that we can also benefit from future research concerning the broader social, cultural, economic, and regulatory context relevant to Norwegian mental healthcare.

Lastly, I hope this thesis will inspire other master students to contribute to Norwegian mental healthcare in this emerging digitalization field.

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Appendix A

Interview guide. Translated from Norwegian to English.

INTERVIEW GUIDE

- Can you describe how you use Braive in your everyday work?
 - How do you experience Braive compared to previous practices?
 - How often is it used? (and why?)
 - What tasks are you responsible for?
 - Any previous experience with such an approach?

- Can you elaborate on how it all started? (Taking Braive into use at Lovisenberg)
 - Who was in charge of guiding the process?
 - What expectations did you have? (versus now?)
 - Can you describe your experiences throughout the process?
 - What has been important throughout the process?
 - What has been more puzzling throughout the process?

- How would you characterize the center's decision to include Braive?
 - Why do you think this has happened?
 - What is the purpose?

- Can you describe how those who were in charge of the process have operated?
 - Training? (how was it?)
 - Knowledge? (what?)
 - Support? (how?)
 - And in what way have their behavior influenced your work?

- How do you feel Braive is working?
 - What is working well?
 - What could be better?
 - Do you share experiences with colleagues?

- What have you learned throughout the process?

- Is there anything I haven't asked about that you want to share?

Appendix B

Data structure model. Reproduced inspired by Gioia and colleagues (2013).

