The Privacy-Personalization Paradox in the Context of the Online Mental Health Care Industry

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ABSTRACT (EN)

The rapid delvelopment of digital technologies created a shift in the mental health care industry and the demand for online acces is rising. The goal of this research was to explore the privacy-personalization paradox in the context of online mental health care websites, to examine its effects on trust, perceived usefulness and likelihood of use. The paradox states that personalization requires consumer data, but the data collection creates data privacy concerns among consumers, thus inhibiting the personalization of services.

It was hypothesized that high personalization and low privacy concern have positive effects on trust, perceived usefulness and likelihood of use, compared to low personalization and high privacy concern. This is explored under the lens of the social exchange theory. A survey was conducted using a mixed-subject design, where participants were either assigned to a *high* or *low privacy concern condition* (between-subject), then, both were exposed to a *personalized*, as well as a *non-personalized* condition (within-subject).

Findings showed that *personalization* has a significant positive effect on trust, perceived usefulness and likelihood of use, compared to *no personalization*. Additionally, *low privacy concern* increases *trust* and *likelihood of use*, thus suggesting a paradoxical relationship. However, *privacy concern* has no significant effect on *perceived usefulness,* suggesting an absence of the paradox. These findings are relevant for practitioners to understand and balance the paradox when offering e-mental health care to customers.

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KEYWORDS: privacy-personalization paradox; personalization; online mental health care; mental health; privacy concern; trust; perceived usefulness; likelihood of use; paradox

ABSTRACT (PT)

O objetivo desta pesquisa foi explorar o paradoxo entre privacidade e personalização no contexto de serviços de saúde mental on-line explorando suas influências nas variáveis de confiança, percepção de utilidade e probabilidade de utilização. O paradoxo afirma que a personalização só pode ocorrer por via da coleta de informação pessoal dos consumidores, gerando preocupação nos mesmos assim inibindo o processo de personalização dos serviços.

Foi feita a hipótese de que um alto nível de personalização e um baixo nível de preocupação com a privacidade têm efeitos positivos na confiança, na percepção da utilidade e na probabilidade de utilização, em comparação com um baixo nível de personalização e um alto nível de preocupação com a privacidade. Isto é explorado a fundo na teoria de social exchange. Foi realizado um inquérito utilizando um mixed-subject design que apresentou aos participantes um alto ou baixo risco de preocupação no que toca à privacidade (between-subject), tendo em seguida os mesmos sido expostos tanto a um exemplo não-personalizado como a um com alto nível de personalização (within-subject).

Os resultados mostraram que a personalização tem um efeito positivo sobre as três variáveis dependentes, em comparação com nenhuma personalização. Além disso, a baixa preocupação com a privacidade aumenta a confiança e a probabilidade de utilização. No entanto, a preocupação com a privacidade não tem um efeito significativo na percepção da utilidade, sugerindo uma ausência do paradoxo. Estas conclusões são relevantes para os profissionais compreenderem e equilibrarem seus serviços para oferecer o melhor suporte aos seus clientes.

TÍTULO: O Paradoxo entre Personalização e Privacidade na Indústria da Saúde Mental Online

AUTOR: Kelly Maret

PALAVRAS-CHAVE: Paradoxo privacidade-personalização; personalização; cuidados de saúde mental online; saúde mental; preocupação com a privacidade; confiança; percepção da utilidade; probabilidade de utilização; paradoxo

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To me personally, finishing this dissertation is a big milestone in my life. It's our largest submission, our longest project, our final work, but most and foremost, it marks the end of a chapter of our lives.

From now on, I'll leave my student life behind and focus on what life has to offer beyond my experience as a student.
And the fact that I had such a good experience with this last milestone as a student, makes me finish my student career on a really positive note.

Here's to new adventures and a new chapter of our lives,

Thank you all so much!

CHAPTER 1 : Introduction

The 21st century is shaped by technology and innovation, which are redefining marketing and service deliveries, including the health sector. The rapid evolvement of online technologies are driving a lot of services online, thereby creating an entire new space for firms and consumers to meet, especially in the space of mental health.

The Covid-19 pandemic accelerated this digital shift tremendously (Bucatariu & George, 2020). As a result of the pandemic, mental health issues could no longer be ignored and are increasingly addressed by society and governmental organizations. This created high demand for online mental health care platforms and websites, offering remote access to therapy. As a result of this high demand, online mental health care platforms gained in popularity, and so did the rest of the mental wellness industry. Nowadays, there are 10,000 mental health apps available, amongst around 250,000 health and wellness platforms (Lustgarten, Garrison, Sinnard & Flynn, 2020). However, only a few of these services are evidence-based. This implies that there is a large gap for research to explore these services and their related issues.

Nevertheless, 450M people worldwide are estimated to suffer from mental illnesses (Mannan, Ahamed & Zaman, 2019), astonishingly, less than a third of them receive adequate treatment. This is partially due to the many barriers, such as stigma, lack of accessibility, or financial constraints.

The large shift to online technologies has resulted in new marketing opportunities, but also raised some concerns (Mannan et al., 2019). Generally, service providers acknowledge the improvement of results when using personalized offerings (Awad & Krishnan, 2006). Engaging customers through personalized services has become a common business practice and is often preferred among consumers (Lee & Cranage, 2011). However, personalization is not free from controversy.

Although personalization can be a successful strategy in mental health care (Nguyen et al., 2020), the new technologies created a new major barrier to service adoption: data privacy concern. On one hand, customers looking for remote mental health care are interested in receiving personalized treatment, but are simultaneously highly reluctant to sharing vulnerable and sensitive data with online mental health companies (Martin & Murphy, 2017). The data collection creates feelings of concern, fear and mistrust and leads to lower willingness to adopt the service. Consequently, this creates what is known as the "privacy-personalization paradox" (Kaaniche et al., 2020). Based on social exchange theory (Chellappa & Sin, 2005), this paradox

is explored and aimed to be further understood on the so-called privacy calculus: understanding how perceived benefits of personalization are outweighing the fear attached to data sharing, especially with the use of privacy assurance statements as a strategy to foster lower levels of concern among consumers. Privacy statements are a proven way to communicate feelings of safety to consumers and reduce the amount of hesitation the patients have towards online mental health care websites (Hui et al., 2007; Bansal et al., 2015). In the digital world, it is almost unavoidable to remain competitive while meeting consumer needs, without collecting data. The question remains, how can online mental health care websites balance this paradox?

1.1 Literature Gap

Although there have been numerous studies on the privacy-personalization paradox, the intersection with this paradox and online mental health platforms still remains largely underexplored (Mirabito et al., 2022). Additionally, personalization is an understudied field and deserves more attention, especially in relation to online mental health providers. Also, it remains unclear how users and service providers can balance the privacy-personalization paradox, and further underlying mechanisms remain to be understood (Liu & Tao, 2022).
It is still unclear to what extend privacy concerns are affecting people's usage of online mental health platforms if they find personalization to be valuable (Chellappa & Sin, 2005). Finally, privacy statements are great tools to increase privacy assurance, but are understudied in literature.

This research will aim to fill these gaps in literature by analyzing the privacy-personalization paradox in the online mental health care industry, specifically for online mental health care websites that match and connect patients with licensed professionals based on the patients' needs. This will be done in connection with privacy statements, to examine how states of privacy concern or assurance interact with personalization and influence consumers' perception of the service.

A practical contribution of this research is to offer a better understanding of the balancing act between the antagonistic relationship between privacy concern and personalization. Also, it offers insights on how privacy assurance strategies can help balancing the paradox and create better behavioral outcomes for customers. In order to fill this gap in literature, the following research question is proposed:

What are the effects of privacy concern and personalization on levels of trust, perceived usefulness and likelihood of use, for online mental health care websites?

The research is divided into multiple chapters. First, a literature review is presented to explore relevant prior research findings. Then, the methods chapter explains the design and procedure of the experimental research, and the analysis of the findings will be presented in the results section. Finally, the last chapter presents a discussion of the findings, theoretical and managerial implications, as well as future research suggestions, and a final conclusion.

CHAPTER 2 : Literature Review

2.1 Online Mental Health

In this chapter, the role of personalization and data privacy in the online mental health care industry is analyzed, as well as their effects on trust levels, perceived usefulness and likelihood of using online mental health care websites. The research is centered around online mental health care websites and will be abbreviated as "e-mental health care" in this study.

In the 21st century, the internet and technology have revolutionized almost every aspect of our lives (Lustgarten et al., 2020). Consequently, technology is also redefining the way mental health care is delivered (Liu & Tao, 2022). A new opportunity are the online mental health care services (e-mental health care). Due to the rapid expansion of digital solutions, online mental health care has grown in popularity and made treatment more accessible and efficient, thereby surmounting many barriers related to traditional face-to-face mental health care (Lustgarten et al., 2020).

Research on clinical psychology defined mental health as "*a state of wellbeing in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community*." (Mirabito et al., 2022, p.565), encompassing emotional, psychological, as well as social well-being (Mirabito et al., 2022; Bucatariu & George, 2020). Although there is more conversation about mental health care, only a minority of people receive appropriate treatment (Chan, Farrer, Gulliver, Bennett & Griffiths, 2016).

Mental health has not only become a major societal problem, it has become a public health problem (Andreasen, 2004). Notably during the Covid-19 pandemic in 2020, mental health issues have reached a striking high and resulted in a dramatic surge in anxiety and depression rates worldwide (Mirabito et al., 2022). Despite the rising need for treatment options, there are major barriers causing hesitancy towards seeking help, namely: stigma, privacy and confidentiality concern, and lack of financial and geographical accessibility (Sweeney, Donovan, March & Forbes, 2019; Kauer, Mangan & Sanci, 2014). To tackle this problem, solutions need to be tangible, effective and rapid (Andreasen, 2004). One way in which mental health care has been revolutionized is through innovation and technology.

Mental illnesses affect around 450M people worldwide, stretched across all socio-economical groups and this continuously growing population is seeking adequate support (Mannan et al., 2019). In high-income countries, between 35-50% of people suffering from mental illness do not get treatment, in low-income countries this percentage doubles (Mannan et al., 2019). Technology and digital alternatives empowered service providers and created a lasting change in the industry (Robledo Yamamoto, Voida & Voida, 2021).

The Covid-19 pandemic required a challenging and rapid evolvement of online mental health therapy. Due to contact restrictions, most service providers were forced to shift their services online, around 80% of therapists offered remote therapy during the pandemic (Robledo Yamamoto et al., 2021).

Due to the rapid increase in demand of e-mental health care, online mental health care has since presented a lucrative market opportunity**.**

There are diverse digital ways to deliver e-mental health care, such as mobile applications, websites, forums or community groups and numerous names to describe these services, such as: e-mental health, teletherapy, telehealth, online mental health care. (Robledo Yamamoto et al., 2021; Mannan et al., 2019; Price, Yuen, Goetter, Herbert, Forman, Acierno & Ruggiero, 2014). In this study, online mental health care is defined as "*the use of remote technology to specifically conduct synchronous, clinical therapy sessions with clients who are not physically collocated with their mental health therapist"* (Robledo Yamamoto et al., 2021, p.1) and is abbreviated as "e-mental health care". The focuses is on websites providing online mental health services which are defined as "*delivering [mental] health services and [mental] health-related information through [websites] to the clients*" (Mannan et al., 2019, p.558).

According to numerous authors, online mental health care generates effective results, comparable to traditional offline treatment (Sweeney et al., 2019; Robledo Yamamoto et al., 2021). The most common illnesses that are treated in online settings are depression, anxiety and panic disorders, PTSD (post-traumatic stress disorder), OCD (obsessive compulsive disorder) and substance abuse, which are what most websites and their professionals offer support for (Mannan et al., 2019).

Nowadays, online therapy is most likely here to stay (Robledo Yamamoto et al., 2021). Mental health care has been in high demand before, throughout and after the pandemic, and offering adequate mental health solutions will remain essential moving forward.

Despite the initial transitional barriers (Lustgarten et al., 2020), the popularity of e e-mental health care may be attributed to its various benefits such as: increased accessibility, lower cost, higher time efficiency, more anonymity, avoidance of stigma, and greater

convenience (Chan et al., 2016; Horgan & Sweeney, 2010; Mannan et al., 2019; Kauer et al., 2014; Chang, 2005). The remote delivery of treatment offers a unique opportunity for increased engagement and educational mechanisms, as well as better post-treatment options for patients to continue parts of their treatment after it ends (Guo, Zhang & Sun, 2016; Price et al., 2014). Especially in low-income countries, the possibilities of expanding these services are extensive (Guo et al., 2016).

In contrast, rapid technological advancements are creating new challenges for service provider as well as clients (Lustgarten et al., 2020). Among the most prevailing barriers are data privacy and confidentiality concerns, lack of quality control, limited clinical data security, lower trust, communication difficulties, lack of individualization, overwhelm of vast amounts of online information, and insufficient awareness of online resources (Bucatariu & George, 2020; Chan et al., 2016; Price et al., 2014; Mannan et al., 2019; Kauer et al., 2014; Lustgarten et al., 2020).

Numerous studies have shown that, in comparison to non-personalized tools, personalized online mental health information creates more favorable patient outcomes (Nguyen, Bol & King, 2020). Unlike offline mental health care, e-mental health care services collect information which ensures the firm's differentiation and helps to optimally meet the patient's unique needs (Chellappa & Sin, 2005). Not only are consumers more inclined to use a personalized e-mental health care service, they are also more likely to trust and use the service when they perceive that their needs have been taken into consideration by e-mental health care providers (Liu & Tao, 2022). Overall, studies suggest that personalization has a higher effectiveness on online mental health care outcomes (Nguyen et al., 2020).

Throughout literature, privacy concern is undoubtedly the most common and challenging barrier to overcome. Despite the internet being a prosperous ground of opportunities, consumers are aware of their online vulnerability and the risks of data breaches and the threats that come with providing their information online (Lustgarten et al., 2020).

Consequently, soaring patient concerns are central to these data privacy breaches (Lustgarten et al., 2020).

Due to the sensitive and vulnerable nature of information that e-mental health care services require, the concerns are even greater (Kaaniche, Laurent & Belguith, 2020). In addition, patients are increasingly skeptical about the quality and generalizability of their treatment, fearing that the treatment is not individualized enough (Chan et al., 2016). To mitigate this growing concern, the personalization of online mental healthcare services has become a

recurrent solution, which brings about numerous benefits which will be presented in the upcoming section of the literature review (Chan et al., 2016).

2.2 Personalization and Data Privacy in e-Mental Health Care

2.2.1 Personalization

In marketing literature, personalization is traditionally defined as "*a customer-oriented marketing strategy that aims to deliver the right content to the right person at the right time to maximize immediate and future business opportunities*" (Serrano-Malebrán & Arenas-Gaitán, 2021, p.4). Prior research identified three phases of personalization: learning, matching and evaluating (Sheng, Nah & Siau, 2008). Following this logic, the company first has to learn about the consumer by acquiring information about them, match them with the product or service that is best suited for their need, and evaluate the results of the match-making.

Chellappa & Sin (2005) pointed out that personalization is dependent on two aspects: first, the service providers' "*abilities to acquire and process customers' information; and [second] customers' willingness to share information and use personalized services*" (Chellappa & Sin, 2005, p.181). Offering a personalized experience first requires information to be collected, analyzed and leveraged past its initial purpose (Serrano-Malebrán & Arenas-Gaitán, 2021). By collecting information about past user behavior, online services can increase relevance, usefulness, value, satisfaction and loyalty of consumers through personalization (Serrano-Malebrán & Arenas-Gaitán, 2021; Bansal, Zahedi & Gefen, 2015; Chellappa & Sin, 2005).

Personalization strategy typically involves targeting and consumer profiling, combined with AI and various other information evaluation techniques (Lee & Cranage, 2011; Kaaniche et al., 2020). By creating detailed consumer profiles, companies can upgrade the information they communicate to customers based on previously acquired data, and as a consequence, better respond to customer needs (Chellappa & Sin, 2005). Due to its numerous benefits, personalization was also adopted in e-mental health care websites.

2.2.2 Personalization & e-Mental Health Care

According to author Liu & Tao (2022), personalization is positively linked to consumers' behavioral intentions. It increases convenience, efficiency, engagement, value, usefulness, attitude towards the business (Lee & Cranage, 2011; Martin & Murphy, 2017; Serrano-Malebrán & Arenas-Gaitán, 2021; Bansal et al., 2015). In addition, personalized services are

commonly preferred over non-personalized ones (Lee & Cranage, 2011). The anticipated benefit of personalization is a main driver for consumers to share information online, regardless of confidentiality concerns (Awad & Krishnan, 2006).

Nevertheless, the effects of personalization are controversial according to literature. Despite their benefits, personalization strategies commonly cause increased levels of privacy concerns as a result of the requested information, and in turn, decrease behavioral intentions (Lee & Cranage, 2011).

Guo et al. (2016) define e-mental health personalization as the "*degree to which smart healthcare services can provide specific health services based on consumers' own health information and condition*s" (Liu & Tao, 2022, p.2). Due to the healthcare industry's personalized nature, the services create increased value by delivering personalized services to their patients based on respective (mental) health conditions (Liu & Tao, 2022).

Prior studies have demonstrated that offering personalized services in online healthcare is one of the key components for service providers to remain competitive (Liu & Tao, 2022; Guo et al., 2016). By doing so, companies communicate personalized health information to patients, which in this study is defined as "*communication intended to reach one specific [patient], and thus involves adjusting [mental health] information in such a way as to match unique individual [conditions and symptoms] related to outcomes of interest*" (Nguyen et al., 2020, p.32). The goal of personalized mental health information (MHI) is to increase relevance, satisfaction and deliver higher quality patient care (Liu & Tao, 2022; Guo et al., 2016).

However, in order to provide a personalized service we have established that companies first need to collect data and personal information from patients. On the flipside of personalization, heightened privacy concerns and lack of control over sensitive data are creating new challenges (Liu & Tao, 2022). Unfortunately, personalization strategies are unrealizable without some degree of privacy loss (Chellappa & Sin, 2005).

2.3. Data Privacy

Individuals' data privacy refers to determining "*for themselves when, how, and to what extent information about them is communicated to others"* (Bansal et al., 2015, p.626). In the online context, this is redefined as "*individuals' concern about the 'threat to their information privacy' when submitting their personal information on the Internet*" (Bansal et al., 2015, p.626). It is among the biggest fear of consumers and the largest barrier for patients to use e-

mental health care service websites (Liu & Tao, 2022). To overcome this barrier, so-called "privacy preservation requirements" (Kaaniche et al., 2020) are increasingly implemented in the online data collection process, which include: anonymity, data minimization, unlinkability and unobservability, of the information required from consumers online (Kaaniche et al., 2020).

Nowadays, consumers are constantly introduced to new technologies and in turn, are progressively more concerned about sharing online information, 84% acknowledging that a firm's privacy policy and statements create feelings of either trust or concern (Martin & Murphy, 2017). Internet privacy concern is defined as "*the degree to which an Internet user is concerned about website practices related to the collection and use of his or her personal information*" (Hong & Thong, 2013, p. 276) and is the most commonly used proxy in literature to unveil online consumers' attitudes and behaviors towards data privacy (Cloarec, Meyer-Waarden & Munzel, 2022; Martin & Murphy, 2017).

When consumers perceive to have control, they feel safer and less vulnerable, which decreases their privacy concern and increases their willingness to share information online **(**Dinev & Hart, 2004**).** By allowing e-mental health care websites to collect their data, patients can profit from numerous opportunities, such as a more accurate match-making process between the patients' condition and the professional, more accurate treatment options, and additional personalized services over the course of the treatment (Kaaniche et al., 2020).

In contrast, high levels of patient privacy concerns are negatively associated with behavioral responses (Lee & Cranage, 2011). Patients with higher concern and feelings of vulnerability try to minimize this concern by paying more attention to policy statements (Dinev & Hart, 2004; Bansal et al., 2015). Online consumers' reasons for concern are varied, ranging from fear of invasion, identity theft, to customer profiling, lack of data control, and distrust regarding privacy policies of companies (Martin & Murphy, 2017; Bansal et al., 2015; Awad & Krishnan, 2006). As every online interaction leaves "electronic footprints detailing their behavior and preferences" (Wu et al., 2012), people's concerns about the transmission of information to third-parties are reinforced, as the consumer usually lacks control over the data handling (Wu, Huang, Yen & Popova, 2012).

In the context of online mental health care websites, data privacy is even more crucial. As the level of privacy concern is largely context-dependent, and the information requested by e-mental health care websites is generally sensitive, stigmatized and vulnerable, patients experience higher concerns and lower willingness to disclose sensitive data (Martin & Murphy, 2017; Dinev & Hart, 2004). These feelings are also unfavorable for data collection, storage and

analysis. Especially precise behavioral data collection contributes to the increased concern (Kaaniche et al., 2020).

Due to the lack of control over e-mental health care websites usage of patient information, consumers are more hesitant to use the websites, as a result of an increased risk of being identified or misuse of vulnerable information (Guo et al., 2016; Kaaniche et al., 2020). This is the key problem for online mental health care websites (Guo et al., 2016).

Therefore, privacy assurance is a relevant strategy to increase value whilst reducing the perceived risk among consumers. Privacy assurance is "*as mechanisms that directly or indirectly provide customers with assurances and guarantees that their private information will be protected and kept private by the website*" (Bansal et al., 2015, p.625). It is carried out through privacy statement or privacy enhancing technologies (PET) (Kaaniche et al., 2020). By reducing the perceived risk, the concern decreases and feelings of safety, security, control and trust are communicated instead (Lee & Cranage, 2011). It is crucial that the consumer will be informed about the limitations of data security and can make a deliberate and conscious choice about whether to disclose information or not (Wu et al., 2012). Individuals with higher privacy concerns are more attentive to privacy statement compared to people with low levels of concern (Bansal et al., 2015).

To date, there is only limited literature investigating the effect of privacy statements, although they are crucial to increase trust levels among consumers (Bansal et al., 2015). Privacy statement empower patients to make a correct judgement of the risks associated with disclosing information (Hui, Teo & Lee, 2007) and communicate a feeling of control and predictability over what happens to their online data, for example through informing the encryption of consumers' data (Bansal et al., 2015). Thus, if privacy assurance statements are used on websites, consumers are more inclined to share personal information by increasing trust and reducing levels of concern (Hui et al., 2007). However, a lack of privacy assurance will increase the patient's perceived risk, and thus decrease trust and willingness to use the online service.

On the other hand, a way for firms to create positive behavioral responses is to use privacy as strategy, a "*terminology for the firm phenomena of using their consumer information protection approaches as competitive differentiation*" (Martin & Murphy, 2017, p.136). Data privacy and safety offers an opportunity to be a differentiating strategy. By prioritizing the security of consumer data, authentic privacy promotion, transparent communication about information handling and thereby addressing consumer concerns appropriately (Martin & Murphy, 2017). Ultimately, this commitment to safety assurance can even result in financial benefits for the firm (Wu et al., 2012).

Based on the Social Exchange Theory (SET), consumers are sharing information as long as the consequences of providing personal information are perceived to be smaller than the anticipated benefits from sharing the information (Martin & Murphy, 2017; Chellappa & Sin, 2005). In other words, sharing information online is a risk-benefit calculation (Wu et al., 2012; Chellappa & Sin, 2005). In literature this is known as the privacy calculus, "*an evaluation of the costs and benefits of sharing information*" (Lee & Cranage, 2011, p. 991). This phenomena is at the base of the privacy-personalization paradox.

2.4 Privacy - Personalization Paradox

Personalized services are usually associated with positive customer responses and positive behavioral responses, such as an increased willingness to disclose information or make a purchase (Lee & Cranage, 2011) As previously established, personalization is the most effective when users are in control of their data and have a feeling of information privacy (Martin & Murphy, 2017).

The companies' aim is to create detailed customer profiles based on patient data (Lee & Cranage, 2011) to deliver personalized services. However, this collection and profiling results in high concerns among patients and consequently decreases their feelings of trust, willingness to disclose information and use the online service (Kaaniche et al., 2020). This is what is known in literature as the "privacy – personalization paradox".

On one side, consumers prefer personalized e-mental health care websites, but at the same time, they want to take advantage of the associated benefits while giving away as little information as possible to avoid privacy risks, skepticism and feelings of fear (Liu & Tao, 2022, Guo et al., 2016). As the data requested for mental health services is especially sensitive, it can be uneasy for patients to share information (Lee & Cranage, 2011). In that case, too much personalization creates suspicion and increases hesitation and reluctance to sign up on the websites (Martin & Murphy, 2017), as too detailed personalization often reveals evidence of prior behavioral tracking (Lee & Cranage, 2011).

Nevertheless, the anticipated added value of personalization still incites consumers to share information in hopes of the future benefits, despite the concerns (Sheng, Nah & Siau, 2008). According to the Social Exchange Theory, it is regarded as a trade-off: if you want to enjoy the benefits of personalization, you have to give up a certain amount of privacy in exchange (Cloarec et al., 2022; Sheng et al., 2008; Awad & Krishnan, 2006). This antagonistic

relationship between privacy and personalization creates a dilemma for consumers and makes it challenging for e-mental health care providers to create a personalized and unique experience without creating negative feelings among customers (Sheng et al., 2008). The paradox creates a conflicting situation and makes it difficult for e-mental health care websites to recognize the thin line between enough personalization and too much privacy concern.

These opposing needs can be balanced through a few strategies. First, privacy assurance is essential to increase feelings of security when offering personalized services. When personalization is important to consumers, creating privacy assurance stimulates lower concern and increases the perceived value from personalization (Lee & Cranage, 2011).

Secondly, Lee & Cranage (2011) also found that when online websites are transparent in their communication of privacy policies, the effect on consumers leads to more positive outcomes as it increases consumers perceived trust and honesty in the website. In agreement, with Guo et al. (2016) it is believed that trust is a balancing tool in this paradoxical relationship between privacy and personalization. So, if privacy is assured, consumers have higher feelings of trust, lower concern and are consequently more inclined to share information online more easily to perceive the service as useful and make use of it (Chellappa & Sin, 2005). Ultimately, this will lead to higher perceived usefulness and willingness to use the services.

Balancing this paradox in the context of online mental health services is yet to be entirely understood (Liu & Tao, 2022). This study analyzes the effect of the paradox on three dependent variables: *trust*, *perceived usefulness*, and *likelihood of use*.

2.5 Trust

In the online mental health care context, trust is defined as "*the degree to which an individual perceives that smart healthcare services are dependable, reliable, and trustworthy in supporting one's healthcare activities*" (Liu & Tao, 2022, p.4). Nowadays, with the increase in technology and digital services, establishing trust is crucial for a firms' credibility and proven respect of privacy practices (Guo et al., 2016; Lee & Cranage, 2011).

As previously stated, personalized services give consumers the feeling that their personal needs were considered, thus increasing their trust in the website (Liu & Tao, 2022) Numerous authors confirmed that privacy statements can help overcome mistrust and favor trust in online MHC website (Hui et al., 2007; Bansal et al., 2015; Wu et al., 2012). According to Lee & Cranage (2011), privacy concerns and trust are negatively correlated when making

online transaction as it increases perceived vulnerability (Bansal et al., 2015). Thus, we hypothesize that personalization of e-mental health care websites leads to higher levels of trust than no personalization and high feelings of privacy concern about e-mental health care websites create lower trust than conditions of low privacy concern:

H1a: Personalization leads to higher trust than no personalization.
H1b: High privacy concern leads to lower trust than low privacy concern.
H1c: Personalization leads to higher trust when privacy concern is high compared to when privacy concern is low.

2.6 Perceived usefulness

Perceived usefulness is defined as " *the degree to which an individual believes that using smart healthcare services would improve the performance of his/her [online mental] healthcare activities*" (Liu & Tao, 2022, p.2). According to Lee & Cranage (2011), perceived usefulness among consumers creates a positive behavioral response to an online service. The other way around, the personalization of e-mental health care websites also has a positive effect on perceived usefulness (Lee & Cranage, 2011). On the other hand, according to numerous studies, data concern was found to be one of the major factors that leads to lower perceived usefulness of e-mental health care websites. Therefore, we hypothesize that:

H2a: Personalization leads to higher perceived usefulness than no personalization.
H2b: High data concern leads to lower perceived usefulness than low data concern.
H2c: Personalization leads to higher perceived usefulness when privacy concern is high compared to when privacy concern is low.

2.7 Likelihood of use

Lastly, when talking about likelihood of use, the firm anticipates an indication of potential future leads. In the online mental health context, e-health literacy is an important step which precedents help-seeking (Mannan et al., 2019). With high levels of e-health literacy, people are more capable to identify the presence of a mental illness and thus, more inclined to seek out help and use online mental health services (Mannan et al., 2019).

Personalization has a positive influence on people's willingness to use a service as it is expected to meet their personal needs more accurately (Liu & Tao, 2022). In contrast, privacy and confidentiality issues remain to be the major barriers that keep patients from using online mental health services. According to (Sheng et al., 2008), the higher the concern, the lower the willingness to use. Since personalization has a positive effect on likelihood of use, and data concern has the opposite effect, we hypothesize that:

H3a: Personalization leads to higher likelihood of use than no personalization.

H3b: High data privacy concern leads to lower likelihood of use compared to low data privacy concern.

H3c: Personalization leads to higher likelihood of use when privacy concern is high compared to when privacy concern is low.

CHAPTER 3 - Methods

3.1 Research Strategy

3.1.1 Objective & Motivation

The objective of this experimental research is to provide an answer to the aforementioned research question ""*What are the effects of privacy concern and personalization on levels of trust, perceived usefulness and likelihood of use, for online mental health care websites?"*, test the related hypotheses, the conceptual and analyze the influence of the control variable *general privacy concern*. The control variable *general privacy concern* was included to ensure that there is no alternative explanation to the effect and to see whether participants pre-existing levels of general privacy concern had any influence on their responses.

A quantitative experimental research study was conducted using the online survey platform Qualtrics and was later analyzed in IBM SPSS Statistics. The online survey allowed to collect a large number of responses in a short amount of time and was non-location bound. It allowed to test two different experimental conditions and the questions were strategically ordered.

3.2 Participants & Sampling

3.2.1 Target Population

The survey was targeted at a general population. Research shows that mental health issues are present across all age groups, genders and backgrounds. Especially post-pandemic, mental health issues are widely spread across society. Therefore, in the context of this research, the target population is not limited to a specific social group.

3.2.2 Sampling Procedure & Size

To recruit participants, the online survey was send out to fellow students of Católica Lisbon School of Business and Economics, as well as to co-workers, family members and other people in my environment through convenience sampling. The survey was also shared across various social media platforms. The survey was accessible through an anonymous link and participation was voluntary. Participants were encouraged to share the survey with other peers, thereby applying the snowballing sampling technique. A diverse sample was welcomed as higher diversity allows for higher possible generalizability.

The survey aimed to collect 60 total respondents, 30 per condition, due to the limited time frame. It was active for 14 days and reached a total of 97 responses (45 for the "High Concern" version and 52 for the "Low Concern" version). After data cleaning and eliminating all invalid or incomplete responses, 54 number of responses were left and used for the analysis (28 for each condition of privacy concern). Although 97 responses were collected, the number of valid responses decreased to 54. Based on the central limit theorem, a minimum of 30 per condition, is usually recommended to assume normality. However, due to this large number of incomplete responses, the research was left with 28 valid responses per condition.

3.3 Design

The experiment had a 2 Personalization x 2 Privacy Concern mixed subjects design (Personalization vs. no personalization; high concern vs. low concern). The study used a within-subject design for *personalization*, and a between-subject design for *privacy concern*.

This means that participants were either allocated to the high or low concern group but within those groups, both were exposed to personalized and non-personalized conditions and asked to give their judgement towards them. Thereby, the experiment can directly compare the effect of privacy concern on different levels of personalization.

3.4 Materials & Measurement Instruments

3.4.1 Scenario

The stimuli for the experiment were 4 different visual materials (Appendix 1.1) that mimic e-mental health websites. The participants see a page which simulates their experience of a website, and the potential signing up process on the particular websites.

3.4.2 Independent Variables

There were two conditions of personalization, and two stimuli: the welcome statement and the type of information presented. In the *personalized* condition, participants were presented with a welcome statement "*Welcome, let's find your personalized match"* as well as an example of personalizable questions that the patient will be asked when signing up on the website and starting their mental health journey (*feelings of hopelessness, sleep irregularities, extreme tiredness, negative self-perception, concentration problems, medication, prior experience with*

therapy). These were derived from the PHQ9 depression scale (Kroenke, Spitzer & Williams, 2001). In the *non-personalized* condition, participants saw a general welcome statement "*Welcome, let's get started!"* and no examples of personalizable information.

There were two conditions of data concern, and only one stimuli: a statement explaining what will happen to consumers' data. In the *high concern* condition, the statement said: "*Your data WILL be collected, stored and shared with our partners and third parties"*, in order to create a state of high data concern. The *low concern* condition presented participants with the same stimuli, stating: "*Your data is encrypted and will NOT be collected, stored or shared with any third parties".* This aimed to create a state of data safety and assurance.

3.4.3 Dependent Variables

To measure the three dependent variables (trust, perceived usefulness and perceived likelihood of use), and the control variable, general privacy concern, different measurement scales were used. The items were measured on a rating scale from 1 to 7, and were operationalized based on measurement scales and items that were previously used in literature (Chau & Ho, 2008; Liu & Tao, 2022; Kamis, Koufaris & Stern, 2008).

First, the variable *trust* is defined as *"attitude that an agent will help achieve an individual's goals in a situation characterized by uncertainty and vulnerability."* (Liu & Tao, 2022) and was measured using three measurement items which were operationalized based on the research of Liu and Tao (2022): (1) *This online mental healthcare website is secure ;* (2) *This online mental healthcare website is reliable ;* (3) *Overall, I can trust this online mental healthcare website.* The Cronbach alpha was reported at $\alpha = 0.86$.

Secondly, *perceived usefulness* is defined as *"the degree to which an individual believes that using smart healthcare services would improve the performance of his/her healthcare activities"* (Liu & Tao, 2022, p.2). The variable was measured using a four item scale, also operationalized based on Liu and Tao (2022): (1) *Using this online mental healthcare service improves my mental health management* ; (2) *Using this online mental healthcare service increases my productivity for my mental health management* ; (3) *Using this online mental healthcare service enhances my effectiveness in my mental health management* ; (4) *Using this online mental healthcare service is useful in my mental health management*. The reliability of the scale was proven by a Cronbach alpha level of $\alpha = 0.84$.

Lastly, *likelihood of use* is defined by this research as *"the possibility of a consumer actively signing up and using a website"*. Based on Kamis, Koufaris & Stern (2008), three items were operationalized: (1) *After seeing this online mental health care website, I'm interested in signing up* ; (2) *After seeing this online mental health care website, I'm want to pay for a session with a therapist* ; (3) *After seeing this online mental health care website, I'll probably sign up on the website*. They reported a Cronbach alpha of $\alpha = 0.84$.

3.4.4 Control Variable

In this study, *general privacy concern* was used as a control variable to assess participant's general concerns and hesitations towards online privacy. This allows to reveal whether this prior concern has any influence on their exposure to either high or low concern conditions.

3.4.5 Manipulation Checks

The manipulation check for personalization was done using the question "*In which extent, does the information required by this service deliver a personalized message to you ?"*, and checked whether the personalization manipulation was perceived as effective among participants.

For privacy concern, the manipulation check was done using a question related to their perceived *level of concern or safety*, measured on a 7-point rating scale.

3.5 Procedure

Participants were provided a consent form and were told they would be participating in a study about "online mental health care services and how we make judgements based on certain information*"*.

Participants were then randomly assigned to one of the two conditions of privacy concern (High Concern vs. Low Concern). In both cases, the experiment started with manipulation of the privacy concern, in order to put participants in a state of either concern, or safety. In the condition *High Concern*, the participants saw facts and percentages about data breaches, as well as a rhetoric question about whether they have had recent data breach concerns. In the *Low Concern* condition, a statement about data safety and security was presented, also accompanied with a rhetoric question about the safety that participants have felt when sharing data online. The information was supposed to be triggering for them to feel either, highly concerned, or more safe about online data sharing. This was followed by a question

about their perceived *level of concern* or *safety* when sharing information online, measured on a 7 point rating scale (1 = not concerned/safe at all, 7 = extremely concerned/safe).

After the manipulation of privacy concern, participants were presented with the health scenario. They were asked to imagine that they are looking for online mental health care services that match them with a professional psychologist, as they are currently experiencing more difficult emotions. They were told that they would be asked to explore two services, each corresponding to one if the personalization conditions (personalization vs. no personalization). At this point of the survey, the above mentioned stimuli visual materials of the e-mental health care websites are shown with their respective adaptations of the additional stimuli (welcome statement, provided information, safety/concern statements).The safety/concern statement was used to reinforce the condition of the privacy concern they were assigned to at the beginning of the survey, thereby reinforcing the corresponding feeling. The visual materials can be consulted in Appendix 1.1.

For each condition of personalization, participants were presented with the website and the subsequent questions related to the depend variables: trust, perceived usefulness and likelihood of use, as well as the manipulation check for personalization.

After answering the questions in the personalization, as well as the no personalization condition, all participants were asked to evaluate the control variable: *general data concern*, based on a 7 point rating scale (1 = *extremely concerned*, 7 = *not concerned at all*).

Lastly, demographical data was collected, on age, gender and occupation, to create a better overall understanding of the participants. Before finalizing the survey, participants had the opportunity to leave any comments or concerns.

The two survey conditions can be found in Appendix 1.2.

CHAPTER 4 : RESULTS & ANALYSIS

The goal of this chapter is to test the proposed hypotheses and analyze the findings of the survey to give an answer to the research question.

4.1 Participants

The descriptive statistics of the demographics, age, gender, and occupation showed the following results:. It shows that 78.2% of the sample were between 18 and 34 and female participants outnumbered males, 67.3% compared to 32.7%. Most respondents were students, 47.3%, 38.2% were either part-time or full-time employed. The exact values of the demographics of the participants can be found in Table 1.

Table 1:
Descriptive Statistics: Demographics (N = 56)

Variable	Frequency	Valid Percent
Age		
Under 18	1	1.8
18-24	25	45.5
25-34	18	32.7
35-44	1	1.8
45-54	1	1.8
55-64	8	14.5
65-74	1	1.8
Gender		
Male	18	32.7
Female	37	67.3
Occupation		
Student	26	47.3
Employed part-time	6	10.9
Employed full-time	15	27.3
Retired	8	14.5

4.2 Assumptions – Repeated Measures ANOVA

Before proceeding to the analysis, the seven assumptions of the Repeated Measures ANOVA were tested.

First, the dependent variables should be measured on a continuous scale. As all variables were measured on a rating scale form 1 to 7 (*not likely at all – extremely likely*), it infers the use of an interval scale, and thus confirming the assumption.

Then, the within-subject factors (independent variables) should consist of two categorical, related groups that have experiences two conditions through the course of the experiment. In this research, participants experienced two different conditions of personalization within the survey, once the presence and once the absence of personalization, thus meeting the criteria of this assumption.

Also, the between subject factors (independent variables) should be composed of at least two categorical and independent groups. Here, the study was split into two experimental groups: high concern and low concern.

Additionally, Field (2013) suggests to avoid having outliers in the within or between-subject factors. This was tested by visually representing outliers using the explore function and no outliers could be identified.

Moreover, the dependent variables should be normally distributed which was visually confirmed by extracting P-P Plots for each dependent variable. Although the participant pool is small, the assumption was met.

The homogeneity of variance was confirmed by Levene's test which showed that there is homogeneity of variables for all dependent variables, as $p > .05$.

Finally, there should be sphericity among the groups of the within-subject factors as well as the between-subject factors. Using Mauchy's test, all epsilon values were reported at 1, thereby not violating the assumption of sphericity.

4.3 Reliability of Scales

To ensure the reliability of the items, previously tested items from literature were used for this research. Field (2013) suggests that Cronbach's alpha should be superior to .70 in order to be considered reliable. For Trust, $\alpha = .86$ for three items measured. Perceived usefulness was measured by 4 items with an $\alpha = .84$. Lastly, Likelihood of Use has an Cronbach's alpha of $\alpha = .95$ for three items.

4.4 Analysis of Main Dependent Variables - ANOVA

In order to test the hypotheses, this research performed a Repeated Measures ANOVA as it included a within-subject (Personalization), as well as a between-subject (Privacy Concern) design. A Repeated Measures ANOVA was performed for each dependent variable. The original output can be found in Appendix 2**.** The Repeated Measures ANOVA was run 3 times, once for each dependent variable. The within-subject factor was the independent variable "Personalization", measured on two levels: 1 = no personalization, and 2 = personalization. Then, each dependent variable was measured on both levels.

4.4.1 Trust

First, a Repeated Measures ANOVA 2 Personalization x 2 Privacy Concern was performed with *Trust* as the dependent variable. The analysis showed a significant main effect of the within-subject factor Personalization (F (1, 53) = 16.68, $p < .001$, Partial Eta Squared = .236) indicating that the presence of *personalization* leads to higher levels of Trust (M = 4.32, *SD = 1.85*), than *no personalization* (M = 3.4, *SD = 1.68*). This confirms hypothesis H1a.

Also, there is a significant main effect of the between subject factor *Privacy Concern* (F (1, 53) = 6.59, p = .013, Partial Eta Squared = .109) indicating that Low Concern (*Mean Low Concern* = 4.37, *SD Low Concern = 1.71)* leads to higher Trust than levels of High Concern (*Mean High Concern* = 3.35, *SD High Concern = 1.69).* Thereby, hypothesis H1b is confirmed.

There was no significant interaction between Personalization and Privacy Concern (F (1, 53) = .506, p = .48). Thus, hypothesis H1c is rejected.

Table 2:

Descriptive Statistics - Trust

	PRIVACY CONCERN	Mean	Std. Deviation	N
TRUST – No Personalization	Low Concern	3.99	1.624	28
	High Concern	2.81	1.549	28
	Total	3.40	1.681	56
TRUST - Yes Personalization	Low Concern	4.75	1.802	28
	High Concern	3.89	1.837	28
	Total	4.32	1.854	56

4.4.2 Perceived Usefulness

Next, a Repeated Measures ANOVA 2 Personalization x 2 Privacy Concern was performed with *Perceived Usefulness* as the dependent variable. The analysis showed a significant main effect of the within-subject factor Personalization (F (1, 53) = 26.54, p < .001, Partial Eta Squared = .33) indicating that the presence of personalization leads to higher levels of *Perceived Usefulness* (M = 4.74, *SD = 1.86*), than no personalization (M = 3.35, *SD = 1.48*). So, hypothesis H2a is confirmed.

There is no significant effect of the between subject factor Privacy Concern (F (1, 53) = 2.53, p = .118, Partial Eta Squared = .045) indicating that the level of Privacy Concern has no effect on Perceived Usefulness (*Mean Low Concern* = 4.32, *SD Low Concern = 1.72; Mean High Concern* = 3.76, *SD High Concern = 1.59).* This implies that H2b is rejected.

There was no significant interaction between Personalization and Privacy Concern (F (1, 53) = .771, p = .384) and H2c is rejected.

Table 3:

Descriptive Statistics - Usefulness

	PRIVACY CONCERN	Mean	Std. Deviation	N
USEFULNESS – No Personalization	Low Concern	3.75	1.481	28
	High Concern	2.95	1.400	28
	Total	3.35	1.485	56
USEFULNESS – Yes Personalization	Low Concern	4.90	1.955	28
	High Concern	4.57	1.794	28
	Total	4.74	1.866	56

4.4.3 Likelihood of Use

Finally, a Repeated Measures ANOVA 2 Personalization x 2 Privacy Concern was performed with *Perceived Usefulness* as the dependent variable. The analysis showed a significant main effect of the within-subject factor Personalization (F (1, 53) = 22.4, p < .001, Partial Eta Squared = .293) indicating that the presence of Personalization leads to higher levels of *Perceived Usefulness* (M = 4.43, *SD = 1.91*), than no Personalization (M = 3.22, *SD = 1.64*). This finding confirms hypothesis H3a.

There is also a significant effect of the between subject factor Privacy Concern (F (1, 53) = 9.51, p = .003, Partial Eta Squared = .15) indicating that *Privacy Concern* has an effect on *Perceived Usefulness* (*Mean Low Concern* = 4.4, *SD Low Concern = 1.7; Mean High Concern* = 3.25, *SD High Concern = 1.68),* showing that lower concern leads to higher likelihood of use, while high concern decreases likelihood of use. Thus, H3b is confirmed.

There was no significant interaction between Personalization and Privacy Concern (F (1, 53) = .215, p = .645) and H3c is rejected.

Table 4:

Descriptive Statistics – Likelihood of Use

	PRIVACY CONCERN	Mean	Std. Deviation	N
LIKELIHOOD OF USE – No Personalization	Low Concern	3.86	1.551	28
	High Concern	2.58	1.490	28
	Total	3.22	1.638	56
LIKELIHOOD OF USE – Yes Personalization	Low Concern	4.95	1.845	28
	High Concern	3.92	1.874	28
	Total	4.43	1.915	56

4.5 Control Variable

Based on an Independent Sample T-Test, no significant differences were found among the between-subject experimental groups High Concern (M = 5.36, *SD = 1.36)* and Low Concern (M = 5.18, *SD = 1.66*) for the control variable *General Privacy Concern* (t (53) = .44, p = .662). This suggests that the control variable *General Privacy Concern* does not change depending on the level of concern.

4.6 Manipulation Checks

Using a Repeated Measures ANOVA, the manipulation check revealed that there is a significant differences between the within-subject conditions of Personalization, *No Personalization* (M = 2.79, *SD = 1.78*) and *Personalization* (M = 4.63, *SD = 2.04*) in the measures of the manipulation check "*Perceived Match"* (t (53) = 25.4, p < .001, Partial Eta Squared = .32) indicating that the manipulation of the independent variable *Personalization* was effective. For the manipulation of *privacy concern*, the participants selected the condition which corresponded to their condition, indicating that the manipulation check was effective.

CHAPTER 5 : DISCUSSION

5.1 Discussion & Summary of Results

This research aimed at gaining a better understanding of the privacy-personalization paradox in the online mental health care industry. The insights produced by this research intend to offer guidance to marketers and mental health firms, to get a better understanding on the constant paradoxical interplay between personalization and privacy, and how to balance it, specifically, for online mental health care websites.

First, it was hypothesized that personalization leads to higher trust compared to no personalization. This research confirmed the hypothesis H1a and found a main effect of personalization on trust. In accordance with Liu & Tao (2022), this research identified personalization as a powerful and relevant tool to increase trust levels among consumers. It suggests that e-mental health care websites can increase trust levels among their patients when using a personalization strategy, as opposed to a non-personalization strategy, which was also shown by Nguyen et al. (2020). This underlines the powerful influence that personalization has on trust-building, especially in an online service environment.

On the contrary, privacy concern was hypothesized to have a negative effect on trust levels compared to no privacy concerns. Hypothesis H1b was also confirmed by this research and a main effect of privacy concern on trust was revealed. This is in line with what was highlighted in previous research (Dinev & Hart, 2004), which presented privacy concern as one of the most inhibiting factors in the e-mental health care environment as it creates vulnerability and thereby decreases trust in the service. This showcases that building a solid foundation of trust through lower privacy concern, or privacy assurance strategy, is even more crucial in the online service environment. This accentuates the suggestion to use privacy assurance as a strategy to lower levels of concern and increase trust in e-mental health care (Bansal et al., 2015).

No interaction was found, thereby rejecting the interaction hypothesis H1c meaning that personalization leads to higher trust when privacy concern is high compared to when privacy concern is low.

Secondly, perceived usefulness was hypothesized to be higher in personalized conditions versus non-personalized conditions. In line with the predictions, this research confirms the main effect of personalization on perceived usefulness and H2a is confirmed. This implied that personalization creates a positive behavioral response to perceived usefulness (Lee & Cranage, 2011). As (Andreasen, 2004) stated, services that are personalized are perceived to be more relevant and more capable of meeting customer needs. A lack thereof, is commonly perceived as a failure to meet customer needs and goals. This reinforces the important effect of personalization on consumer's perception about the usefulness of e-mental health care websites. Thereby, this finding is in accordance with literature.

On the other hand, high privacy concern was predicted to reduce perceived usefulness compared to low privacy concern, but hypothesis H2b was rejected, indicating that there is no main effect of privacy concern on perceived usefulness. Unlike numerous authors, this research did not find a significant difference in the effect of high or low concern on perceived usefulness. This suggests that, in this study, the conditions concern did not significantly change people's perception of the usefulness of the e-mental health care service.

In contrast to previous studies, these participants have shown that perceived usefulness is independent of a website's privacy policy and statements. This infers that participants did not base the capability of the e-mental health care website on the website's privacy statements, which is an interesting finding**.** There is separation between the benefits that a firm can offer, and the privacy policy under which they operate. Although consumers are aware of the privacy concerns, it does not affect their perceived quality and usefulness aspect of the service.

The interaction hypothesis H2c was rejected, suggesting that personalization leads to higher perceived usefulness when privacy concern is high compared to when privacy concern is low.

Thirdly, a main effect of personalization on likelihood of use was found, thereby confirming H3a. In agreement with Liu & Tao (2022), it was confirmed that personalized e-mental health care services lead to higher likelihood of use compared to non-personalized services. A personalized service is often perceived as more efficient in meeting customer needs and goals, therefore incentivizing them to use the service. Especially if the benefits of the personalization appear to outweigh the non-personalized service, likelihood of use increases. Thus, it is crucial for e-mental health care websites to meet customer needs in a more customized and tailored way to increase the adopt rates which is in line with (Andreasen, 2004).

In contrast, high privacy concern was hypothesized to lower the likelihood of use compared to low privacy concern. This hypothesis, H3b, was confirmed by the results of this research. Privacy and confidentiality issues were highlighted as major barriers to adoption by Sheng et al. (2008) and are inhibiting factors to consumers for using an online service. Strong feelings of privacy concern in e-mental health care are perceived as a risk and consequently, reduced peoples' intention to use the service. Therefore, a privacy assurance strategy is pivotal as it creates lower privacy concern and in turn, increases the likelihood of use, for example through privacy assurance statements, as in this study.

There was no significant interaction effect, rejecting H3c, which stated that personalization leads to higher likelihood of use when privacy concern is high compared to when privacy concern is low.

For the control variable, *general privacy concern*, this research showed no significant difference between the high and low concern group. This finding suggests that the general privacy concern of consumers is most likely already pre-established and cannot be easily manipulated. The observed differences between privacy concern are not due to general privacy concerns regarding e-mental health care, but due to our manipulations. The lack of differences also suggests that the concern associated with a website is not sufficiently strong to change participants general privacy concern. So, they have made their minds up about how concerned they generally feel about data privacy, and are less susceptible to alterations of that feeling.

Finally, to answer the research question, this research suggests that within the context of the privacy-personalization paradox, personalization is preferred over non-personalization in relation to trust, perceived usefulness and likelihood of use. Moreover, the study showed that low levels of privacy concern are necessary to increase trust and likelihood of use. However, differences in privacy concern levels show no effect on perceived usefulness of e-mental health care websites. This implies that consumers are not deriving the usefulness of the services based on its privacy policy, although, it lowers their willingness to use the service.

Lastly, to better understand the paradox in the context of e-mental health care websites, this study showed findings that are aligned with the paradoxical privacy-personalization effect on trust and likelihood of use, but not on perceived usefulness. Thereby, it is important for firms to know what variables are pivotal to them and which one to focus on. According to our findings, when trying to improve trust and likelihood of use, companies should make

personalization efforts in combination with privacy assurance strategies, such as privacy statements, to decrease the influence of the paradox. When it comes to perceived usefulness, there was no paradoxical relationship found. Although personalization does not affect perceived usefulness, this research recommends to ensure low privacy concern to increase perceived usefulness. This can be done through privacy statements, as in this research, or a privacy assurance strategy, as well as privacy enhancing technologies (PET), to give the clients a feeling of decreased fear and increased control over their information handling.

5.2 Theoretical Implications

This research contributes to further understanding the paradox in the recently emerged industry of online mental health care. Although literature is gradually exploring the importance of the privacy-personalization paradox, it remains to be largely underexplored in the online mental health care industry (Liu & Tao, 2022).

The findings of the study were primarily aligned with previous research suggestions about the paradox, however, new results were also established.

It included the variable *privacy concern* and the manipulation of privacy statements within the research of the paradox, which are still underexplored, but shown to be a relevant variable to be further analyzed (Bansal et al., 2015). Also, a contradictory finding was uncovered regarding *privacy concern* and *perceived usefulness*, showing that perceived usefulness of online MHC websites does not change with the level of privacy concern.

Also, this research was aligned with previous studies on the importance of personalization. Although personalization is not always guaranteed the amount of importance it deserves, this study uncovered a significant role of personalization in e-mental health care websites, which offers new possibilities for research to deepen that knowledge and acknowledge the strong influence of personalization in this newly emerging industry.

Thereby, this research uncovered a new interesting intersection between *privacy concern* and consumers' perceptions about the usefulness of e-mental health care services, as well as a dominant role of personalization in e-mental health care, which both deserve more attention in research. This research set a foundation for other literature to build on, and further explore the topic.

5.3 Managerial Implications

This research contributes to e-mental health care providers' understanding of how to balance the antagonistic relationship between personalization and privacy concerns, which are two crucial variables for the competitiveness of the firms.

Companies and marketers in the online mental health care industry are encouraged to carefully consider the privacy-personalization paradox, as it is an influential factor for determining business performance and customer relationships. They can do so by evaluating how they incorporate personalization strategies and address their privacy practices and strategically communicate them.

As personalized experiences have shown more positive outcomes compared to non-personalized ones, firms should not neglect this in their business practices. As the demand for e-mental health care is high in the post-pandemic environment, personalization should not be neglected by firms as a driver to increase value, trust and decrease fear, as well as any associated risks. It gives patients the impression that their needs have been considered.

Also, this research shed light on the importance of privacy assurance when trying to balance the paradox. When collecting customer data, privacy assurance is essential to decrease perceived concern and help increase the value of the personalization efforts. In turn, this low concern can lead customer to be more willing to share information, which allows for more personalization, creating a "*positive viscous circle"* between privacy and personalization. Companies can assure privacy through transparent privacy statements or a privacy assurance strategy, and thereby strengthen consumer trust.

With that said, higher trust decreases perceived vulnerability and is the most important balancing factor of the paradox. Thereby, firms can benefit from financial opportunities, as higher trust in e-mental health care websites is predicted to increase the adoption rate.

Overall, managing the paradox creates an opportunity to go beyond the barriers of online mental health care. Companies can reach more patients through improved accessibility and patient data management and create an overall better customer experience. Understanding and balancing the paradox is a challenge, but it ultimately helps e-mental health care firms and most importantly patients, to receive the mental health treatment that they seek. Both firms and patients can derive enormous value by learning how to balance the paradox.

5.4 Limitations

Although most hypotheses were supported, the limitations of this research need to be acknowledged.

First, the size of the research sample was relatively small (N=56) as a large number of survey respondents did not complete the survey. A larger sample could result in more accurate and generalizable results, and may potentially show an interaction between the variables. As the effect of *privacy concern* on *perceived usefulness* was not significant, we could speculate whether a larger sample could potentially change the significance level as it is close to the significant *p*-value of $p < .05$. The research had time and resource constraints and could therefore not be explored to its full potential or under more complex experimental conditions.

Also, this study mostly reached young respondents between 18 and 34 years, therefore making the findings unable to be generalized across all age groups. As online mental health care is relatively new, different age groups have different familiarity with the technology. As younger people are automatically more inclined to look for services online, older generations may not be aware of the opportunities that are available online.

Additionally, the materials of this study tried to replicate the paradox in the best way possible, however, they were limited to visual materials of example websites. Future research could create a more realistic and immersive experience by for example showing a demo website to participants, which would allow them to get a more complete, detailed and accurate understanding of the experience. The visual materials left a lot of room for personal interpretation of the participants of what the e-mental health care experience would look like.

Moreover, although this research tested what it intended to, only a limited number of variables were tested. It would be relevant to look at satisfaction, perceived effectiveness and loyalty rates to have a better understanding of patients experience after receiving e-mental health care, and not just anticipated experiences..

Finally, this study did not differentiate between participants that have prior experience with mental health care, online or offline, or not. The questions only focused on an "anticipated reaction" to an experience and participants gave their answers based on hypothetical scenarios that they may have no relation to. It would be relevant to replicate this study with participants that have prior experience with mental health care, to examine whether these respondents show a different reaction towards the paradox and the related dependent variables, as they have a tangible personal experience that they can relate to.

5.5 Future Research

In the future, this research could be replicated by collecting data from a larger and more diverse sample, to ensure generalizability.

Also, future research should disentangle the results on usefulness and examine the relationship between privacy concern and perceived usefulness more closely to understand how consumers perceive their interplay.

It could also be of academic interest and relevance to manipulate the type of information that participants are asked to provide in the "personalization" condition. By for example asking participants to provide information about their prior mental health diagnosis, suicidal attempts or psychiatric visits, could be perceived to be very sensitive and create stigmatizing feelings among patients. Stigma is one of the main barriers for help-seeking in mental health care. Therefore, by better understanding information that creates higher stigma, e-mental health care can try to reduce feelings of stigma, so that more people are inclined to using online MHC websites if they perceive them to be less inclined to stigma when collecting data for personalization purposes. There, it could be interesting to look at stigmatizing versus non-stigmatizing information and observe which one patients are more likely to use.

Moreover, this research was limited to analyzing its effect on three variables, but future research could take more variables into account and analyze the effect of the paradox on variables such as satisfaction, perceived effectiveness or loyalty rates. It is important to understand how concern and personalization influence user experience. In that case, variables such as loyalty, satisfaction and perceived effectiveness should be assessed. This would imply that participants have already had an experience with e-mental health care. This would allow to explore the perspective of existing patients on the paradox and lead to different findings.

Also, it would be interesting to do a generational comparison and see if different age groups have different responses to the privacy-personalization paradox which could be relevant for targeting the right audiences with the right strategies.

Lastly, it may be interesting to examine whether privacy policies and perceived usefulness and effectiveness are perceived to be independent of one another, or whether they go hand in hand in consumers' minds.

5.6 Conclusion

This research aimed to answer the question "*What are the effects of privacy concern and personalization on levels of trust, perceived usefulness and likelihood of use, for online mental health care websites?".*

To examine this question, the interrelationship between personalization and privacy concern, and their effect on trust, perceived usefulness and likelihood of use, was investigated through an experimental research, where personalization was manipulated as a within-subjects factor and privacy concern as a between-subjects factor.

Findings suggest that, overall, personalization is preferred over non-personalization and its presence has a significant positive main effect on all dependent variables included in this study, confirming H1a, H2a and H3a. Additionally, privacy concern has a negative main effect on trust and likelihood of use, which confirmed H1b and H3b. However, no significant effect of privacy concern on perceived usefulness was found, rejecting H2b. This study found no interaction hypotheses, and rejected H1c, H2c and H3c.

The findings of this research are in line with the paradox for trust and likelihood of use, and need to be carefully balanced by practitioners to achieve the desired positive outcomes for online mental health care services. This study recommends practitioners to use personalization in combination with a low privacy concern strategy, such as a privacy assurance strategy, privacy statements or privacy enhancing technologies, to reduce the influence of the paradox and achieve improved results.

REFERENCES

Andreasen, A. R. (2004). A social marketing approach to changing mental health practices directed at youth and adolescents. *Health Marketing Quarterly*, *21*(4), 51-75.

Awad, N. F., & Krishnan, M. S. (2006). The personalization privacy paradox: an empirical evaluation of information transparency and the willingness to be profiled online for personalization. *MIS quarterly*, 13-28

Bansal, G., Zahedi, F. M., & Gefen, D. (2015). The role of privacy assurance mechanisms in building trust and the moderating role of privacy concern. *European Journal of Information Systems*, *24*(6), 624-644.

Bucatariu, L., & George, B. (2020). Consumer behavior and customer relationship management in mental health services. *Upravlenec*, *11*(3).

Chan, J. K., Farrer, L. M., Gulliver, A., Bennett, K., & Griffiths, K. M. (2016). University students' views on the perceived benefits and drawbacks of seeking help for mental health problems on the Internet: a qualitative study. *JMIR human factors*, *3*(1), e4765.

Chang, T. (2005). Online counseling: Prioritizing psychoeducation, self-help, and mutual help for counseling psychology research and practice. *The Counseling Psychologist*, *33*(6), 881-890.

Chellappa, R. K., & Sin, R. G. (2005). Personalization versus privacy: An empirical examination of the online consumer's dilemma. *Information technology and management*, *6*(2), 181-202

Cloarec, J., Meyer-Waarden, L., & Munzel, A. (2022). The personalization–privacy paradox at the nexus of social exchange and construal level theories. *Psychology & Marketing*, *39*(3), 647-661

Corrigan, P. W., & Watson, A. C. (2002). The paradox of self-stigma and mental illness. *Clinical psychology: Science and practice*, *9*(1), 35.

Dinev, T., & Hart, P. (2004). Internet privacy concerns and their antecedents-measurement validity and a regression model. *Behaviour & Information Technology*, *23*(6), 413-422.

Field, A. (2013). *Discovering Statistics Using IBM SPSS Statistics*. SAGE

Guo, X., Zhang, X., & Sun, Y. (2016). The privacy–personalization paradox in mHealth services acceptance of different age groups. *Electronic Commerce Research and Applications*, *16*, 55-65

Horgan, A., & Sweeney, J. (2010). Young students' use of the Internet for mental health information and support. *Journal of psychiatric and mental health nursing*, *17*(2), 117-123.

Hui, K. L., Teo, H. H., & Lee, S. Y. T. (2007). The value of privacy assurance: An exploratory field experiment. *Mis Quarterly*, 19-33.

Kaaniche, N., Laurent, M., & Belguith, S. (2020). Privacy enhancing technologies for solving the privacy-personalization paradox: Taxonomy and survey. *Journal of Network and Computer Applications*, *171*, 102807.

Kauer, S. D., Mangan, C., & Sanci, L. (2014). Do online mental health services improve help-seeking for young people? A systematic review. *Journal of medical Internet research*, *16*(3), e3103.

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of general internal medicine*, *16*(9), 606-613.

Lee, C. H., & Cranage, D. A. (2011). Personalisation–privacy paradox: The effects of personalisation and privacy assurance on customer responses to travel Web sites. *Tourism Management*, *32*(5), 987-994.

Liu, K., & Tao, D. (2022). The roles of trust, personalization, loss of privacy, and anthropomorphism in public acceptance of smart healthcare services. *Computers in Human Behavior*, *127*, 107026.

Lustgarten, S. D., Garrison, Y. L., Sinnard, M. T., & Flynn, A. W. (2020). Digital privacy in mental healthcare: current issues and recommendations for technology use. *Current opinion in psychology*, *36*, 25-31.

Mannan, M., Ahamed, R., & Zaman, S. B. (2019). Consumers' willingness to purchase online mental health services. *Journal of Services Marketing*.

Martin, K. D., & Murphy, P. E. (2017). The role of data privacy in marketing. *Journal of the Academy of Marketing Science*, *45*(2), 135-155.

Mirabito, A., Adkins, N. R., Crosby, E., Farrell, J., & Machin, J. (2022). Guest editorial: Mental health and the marketplace: a research agenda. *Journal of Consumer Marketing*, *39*(6), 565-568.

Nguyen, M. H., Bol, N., & King, A. J. (2020). Customisation versus personalisation of digital health information: Effects of mode tailoring on information processing outcomes. *European Journal of Health Communication*, *1*(1), 30-54.

Pavlova, A., & Berkers, P. (2022). “Mental Health” as defined by Twitter: Frames, emotions, stigma. *Health Communication*, *37*(5), 637-647.

Price, M., Yuen, E. K., Goetter, E. M., Herbert, J. D., Forman, E. M., Acierno, R., & Ruggiero, K. J. (2014). mHealth: a mechanism to deliver more accessible, more effective mental health care. *Clinical psychology & psychotherapy*, *21*(5), 427-436.

Robledo Yamamoto, F., Voida, A., & Voida, S. (2021). From therapy to teletherapy: Relocating mental health services online. *Proceedings of the ACM on Human-Computer Interaction*, *5*(CSCW2), 1-30.

Serrano-Malebrán, J., & Arenas-Gaitán, J. (2021). When does personalization work on social media? a posteriori segmentation of consumers. *Multimedia Tools and Applications*, *80*(30), 36509-36528.

Sheng, H., Nah, F. F. H., & Siau, K. (2008). An experimental study on ubiquitous commerce adoption: Impact of personalization and privacy concerns. *Journal of the Association for Information Systems*, *9*(6), 1

Sweeney, G. M., Donovan, C. L., March, S., & Forbes, Y. (2019). Logging into therapy: Adolescent perceptions of online therapies for mental health problems. *Internet interventions*, *15*, 93-99.

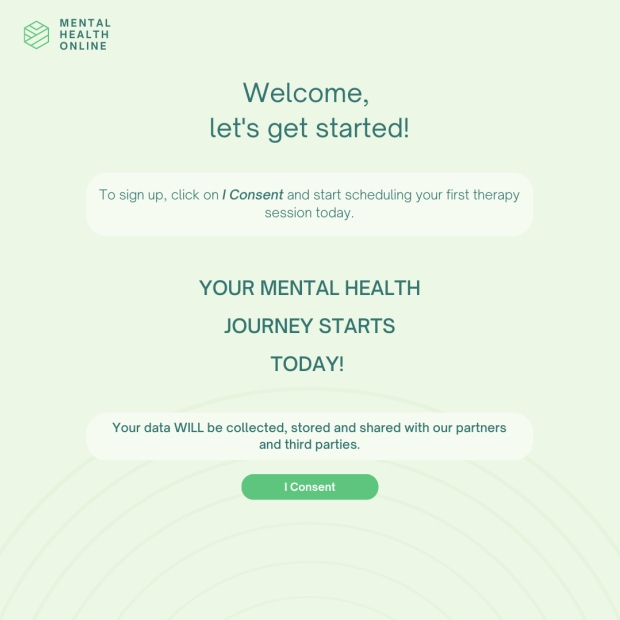
Wu, K. W., Huang, S. Y., Yen, D. C., & Popova, I. (2012). The effect of online privacy policy on consumer privacy concern and trust. *Computers in human behavior*, *28*(3), 889-897.

APPENDIX

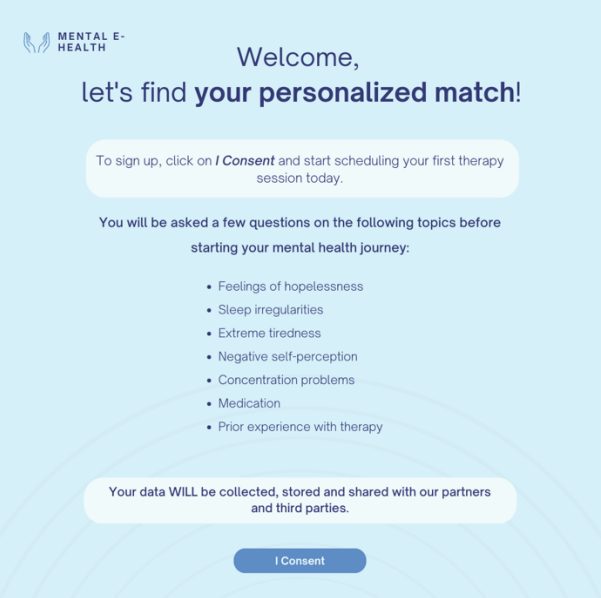
1. Chapter 3

1.1 Survey Visual Materials

1.1.1 High Concern Condition

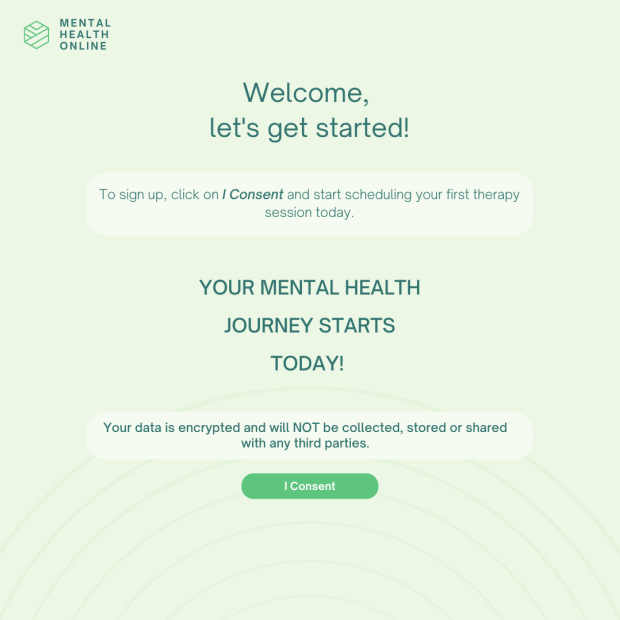


Graphic 1.1 : *No personalization & High Concern*

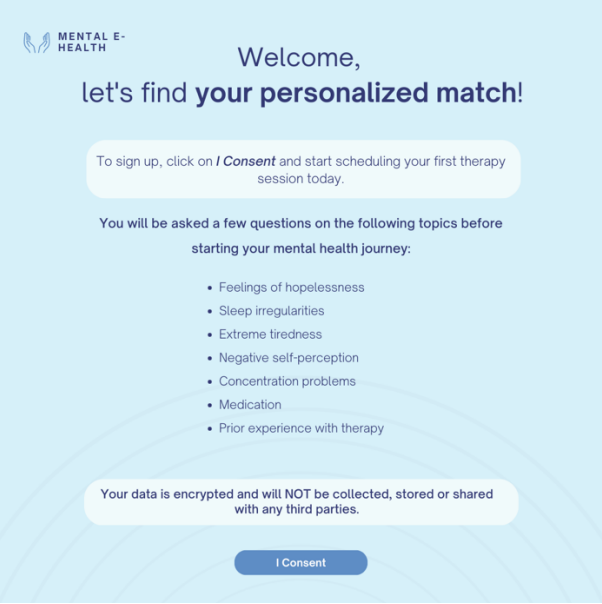


Graph 1.2: *Yes Personalization & High Concern*

1.1.2 Low Concern Condition Survey



Graphic 2.1: *No personalization & Low Concern*



Graph 2.2: *Yes Personalization & Low Concern*

1.2 Survey

1.2.1 High Concern Condition Survey

Start of Block: Introduction Text

Introtext Welcome and thank you for taking part in this survey!

As part of my Master in Strategic Marketing at Catolica School of Business and Economics I am doing research in the field of Health and Well-being Innovation. I am interested in analyzing online mental health care services and how we make judgements based on certain information.

Please remember that all information is confidential and anonymous, participation is voluntary.

The duration of the survey should be no longer than 5 minutes.

Thank you for participating in this study!
If there are any questions or concerns, please send an email to s-kmaret@ucp.pt.

End of Block: Introduction Text

Start of Block: High Privacy Concern

Page Break

Q Data Security W1
The number of **data breaches increased by almost 70%** in 2021, 50% of businesses have already been affected and the **consequences can be devastating** for individuals.

Do you remember the last time you were concerned about the data you inserted on a website? In this study you'll see two different **e-Health websites** and will be asked to pay attention to the presented situations.

Please pay attention and give us your honest opinion.

Page Break

Level of concern How concerned do you feel with potential breaches of your own data?

- ○ Not concerned at all 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ Extremely concerned 7 (7)

Page Break

Scenario After Covid-19 and with the increasing digitalization, mental health care is more commonly offered online.

We are interested in your opinion as potential user of these services. Please imagine the following scenario:

This is a website that is offering **online mental health care services** by licensed professionals. After filling out a survey and assessing your needs, **you're matched with a professional psychologist** who is most likely to fit your needs and a therapy plan is suggested.

Imagine you have been experiencing **more difficult emotions in the past days** and that your problems seem heavier and more difficult to deal with. Because of these feelings, you feel you would benefit from having some support.

To change your mood and feel better, **you decided to use an online mental health care service**. You will be given the opportunity to **explore two services**.

It is important that you pay attention to all the topics of the following websites.

Please look at the following scenarios carefully and answer the following questions.

End of Block: High Privacy Concern

Start of Block: X2 - Low Personalization

Q42 Please, take a look at the following website for online mental health, where you can have a **general service**.

Please take a look at the homepage carefully so you can have a well informed opinion and answer the following the questions.

Page Break

Graph X2/W1

Personalization To what extent, does the information required by this service ...?

	1 Not at all (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 Extremely (7)
Meet your personal needs (1)	○	○	○	○	○	○	○
Deliver a personalized message to you (2)	○	○	○	○	○	○	○
Enable you to customize the information according to your personal needs (3)	○	○	○	○	○	○	○

Trust Please rate the ad in terms of the following scale:

	1 Extremely unlikely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 Extremely likely (7)
This online mental healthcare website is secure. (1)	○	○	○	○	○	○	○
This online mental healthcare website is reliable. (2)	○	○	○	○	○	○	○
Overall, I can trust this online mental healthcare website. (3)	○	○	○	○	○	○	○

Perceived usefulness Please rate the ad in terms of the following scale:

	1 Extremely unlikely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 Extremely likely (7)
Using this online mental healthcare service improves my mental health management. (1)	○	○	○	○	○	○	○
Using this online mental healthcare service increases my productivity for my mental health management. (2)	○	○	○	○	○	○	○
Using this online mental healthcare service enhances my effectiveness in my mental health management. (3)	○	○	○	○	○	○	○
Using this online mental healthcare service is useful in my mental health management. (4)	○	○	○	○	○	○	○

Likelihood of use Think of the website you just explored (Mental Health Online). How interested are you in ...?

	Not interested at all 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Extremely interested 7 (7)
Getting more information about the website (1)	○	○	○	○	○	○	○
Signing Up (2)	○	○	○	○	○	○	○
Actively using the service (3)	○	○	○	○	○	○	○

End of Block: X2 - Low Personalization

Start of Block: X1 - High Personalization

Q40 Please, take a look at the following website for online mental health, where you can have a **personalized service**.

Please take a look at the homepage carefully so you can have a well informed opinion and answer the following the questions.

Page Break

Graph X1/W1

Personalization To what extent, does the information required by this service ...?

	1 Not at all (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 Extremely (7)
Meet your personal needs (1)	○	○	○	○	○	○	○
Deliver a personalized message to you (2)	○	○	○	○	○	○	○
Enable you to customize the information according to your personal needs (3)	○	○	○	○	○	○	○

Trust Please rate the ad in terms of the following scale:

	1 Extremely unlikely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 Extremely likely (7)
This online mental healthcare website is secure. (1)	○	○	○	○	○	○	○
This online mental healthcare website is reliable. (2)	○	○	○	○	○	○	○
Overall, I can trust this online mental healthcare website.. (3)	○	○	○	○	○	○	○

Perceived usefulness Please rate the ad in terms of the following scale:

	1 Extremely unlikely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 Extremely likely (7)
Using this online mental healthcare service improves my mental health management. (1)	○	○	○	○	○	○	○
Using this online mental healthcare service increases my productivity for my mental health management. (2)	○	○	○	○	○	○	○
Using this online mental healthcare service enhances my effectiveness in my mental health management. (3)	○	○	○	○	○	○	○
Using this online mental healthcare service is useful in my mental health management. (4)	○	○	○	○	○	○	○

Likelihood of use Think of the website you just explored (Mental E-Health). How interested are you in ...?

	Not interested at all 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Extremely interested 7 (7)
Getting more information about the website (1)	○	○	○	○	○	○	○
Signing Up (2)	○	○	○	○	○	○	○
Actively using the service (3)	○	○	○	○	○	○	○

End of Block: X1 - High Personalization

Start of Block: Data Privacy Concern

Data Privacy I am concerned that online mental healthcare websites will...

	1 Extremely unlikely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 Extremely likely (7)
Collect too much personal information from me. (1)	○	○	○	○	○	○	○
Use my personal information for other purposes without my authorization. (2)	○	○	○	○	○	○	○
Share my personal information with other entities without my authorization. (3)	○	○	○	○	○	○	○

End of Block: Data Privacy Concern

Start of Block: Demographics

Age Please indicate your age.

- ○ under 18 (1)
- ○ 18 - 24 (2)
- ○ 25 - 34 (3)
- ○ 35 - 44 (4)
- ○ 45 - 54 (5)
- ○ 55 - 64 (6)
- ○ 65 - 74 (7)
- ○ 75 - 84 (8)
- ○ 85 or older (9)

Gender Please indicate your gender.

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary (3)
- ○ Prefer not to identify (4)

Occupation Please indicate your current occupation.

- ○ Student (1)
- ○ Employed part time (2)
- ○ Employed full-time (3)
- ○ Unemployed (4)
- ○ Retired (5)

End of Block: Demographics

Start of Block: Thank you

Q32 Thank you for participating in my survey!

If you have any comments feel free to share them below:

_____

_____

_____

_____

_____

End of Block: Thank you

1.2.2 Low Concern Condition Survey

This section only includes the few parts of the survey that were changed for this condition, compared to the *high concern* condition.

Start of Block: High Privacy Concern

Page Break

Q Data Security W1 Research shows that there is significant **progress in data safety** and the safety algorithms are **very effective**. Through data, people are not only profiting from more customized experiences, better (online) products, and lower crime rates but can also share important information with the **confidence** that it will be **safely stored**.

Do you remember if you felt safe the last time you insert your data on a website?
In this study you'll see two different **e-Health websites** and will be asked to pay attention to the presented situations.

Please pay attention and give us your honest opinion.

Page Break

Level of safety
How safe do you feel with sharing your own data online?

- ○ Not safe at all 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ Extremely safe 7 (7)

Page Break

Scenario After Covid-19 and with the increasing digitalization, mental health care is more commonly offered online.

We are interested in your opinion as potential user of these services. Please imagine the following scenario:

This is a website that is offering **online mental health care services** by licensed professionals. After filling out a survey and assessing your needs, you're **matched with a professional psychologist** who is most likely to fit your needs and a therapy plan is suggested.

Imagine you have been experiencing **more difficult emotions in the past days** and that your problems seem heavier and more difficult to deal with. Because of these feelings, you feel you would benefit from having some support.

To change your mood and feel better, **you decided to use an online mental health care service**. You will be given the opportunity to **explore two services**.

It is important that you pay attention to all the topics of the following websites.

Please look at the following scenarios carefully and answer the following questions.

End of Block: High Privacy Concern

Start of Block: X2 - Low Personalization

Q42 Please, take a look at the following website for online mental health, where you can have a **general service**.

Please take a look at the homepage carefully so you can have a well informed opinion and answer the following the questions.

Page Break

The upcoming parts of the survey are identical the the *high concern condition* which can be found in the previous section.

2. Chapter 4

2.1 Dependent Variables

2.1.1 Trust

Table 5:
Tests of Within-Subjects Contrasts

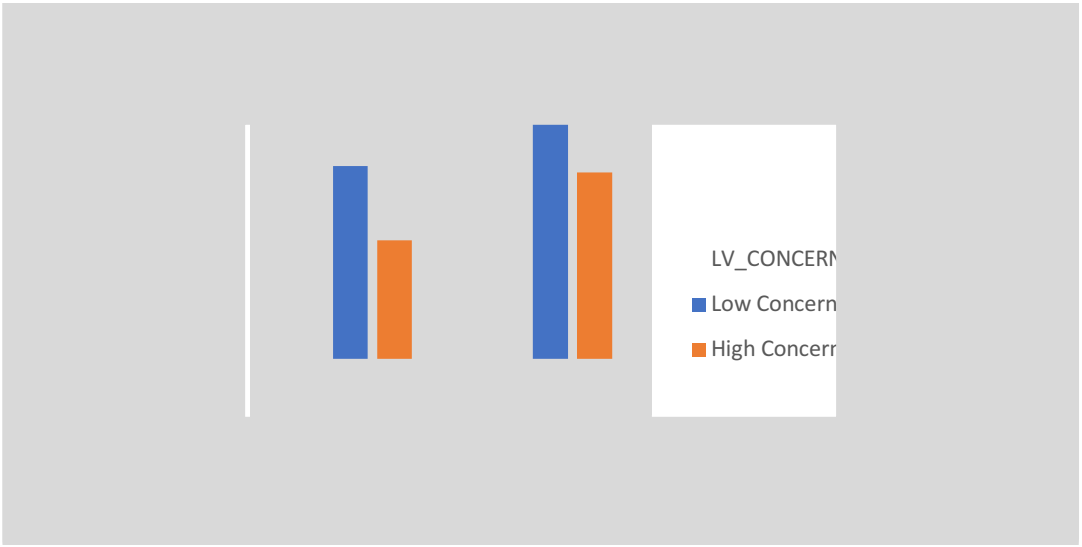
Measure: TRUST

Source		Personalization	df	Mean Square	F	Sig.	Partial Eta Squared
Personalization		Linear	1	23.834	16.679	<.001	.236
Personalization * LevelofConcern_IV		Linear	1	.723	.506	.480	.009
Error(Personalization)		Linear	54	1.429			

Table 6:
Tests of Between-Subjects Effects

Measure: TRUST

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	1	1668.858	379.233	<.001	.875
LevelofConcern_IV	1	29.009	6.592	.013	.109
Error	54	4.401			



Graph 3: *Estimated Marginal Means of TRUST*

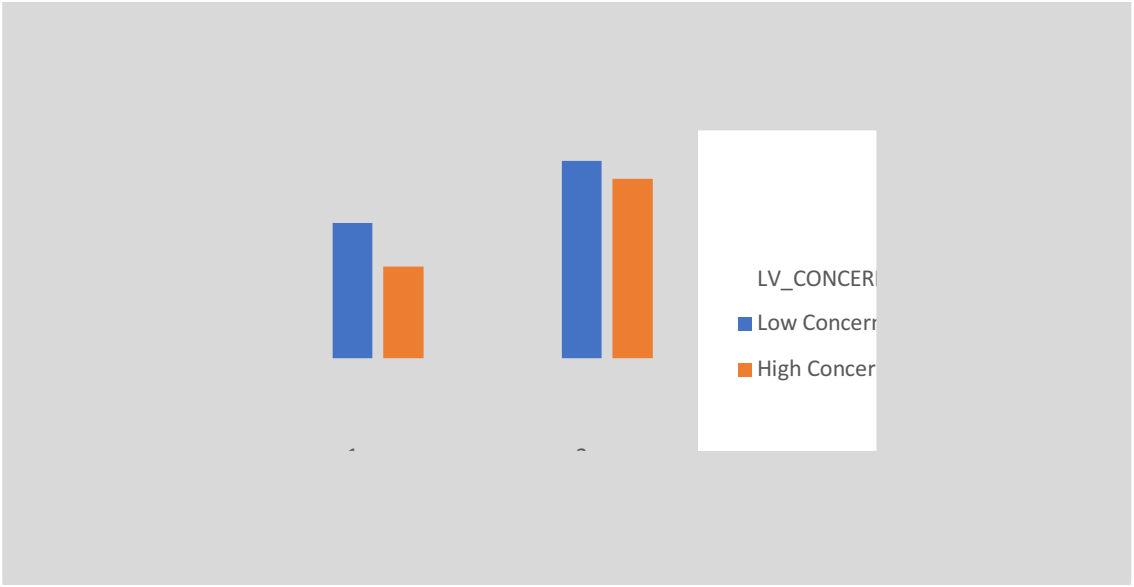
2.1.2 Perceived Usefulness

Table 7:
Tests of Within-Subjects Contrasts - Usefulness

Measure: USEFULNESS						
Source	Personalization	df	Mean Square	F	Sig.	Partial Eta Squared
Personalization	Linear	1	53.974	26.544	<.001	.330
Personalization * LevelofConcern_IV	Linear	1	1.568	.771	.384	.014
Error(Personalization)	Linear	54	2.033			

Table 8:
Tests of Between-Subjects Effects - Usefulness

Measure: USEFULNESS						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	1830.201	1	1830.201	513.696	<.001	.905
LevelofConcern_IV	9.001	1	9.001	2.526	.118	.045
Error	192.392	54	3.563			



Graph 4: *Estimated Marginal Means of USEFULNESS*

2.1.3 Likelihood of Use

Table 9:

Tests of Within-Subjects Contrasts – Likelihood of Use

Measure: USEFULNESS

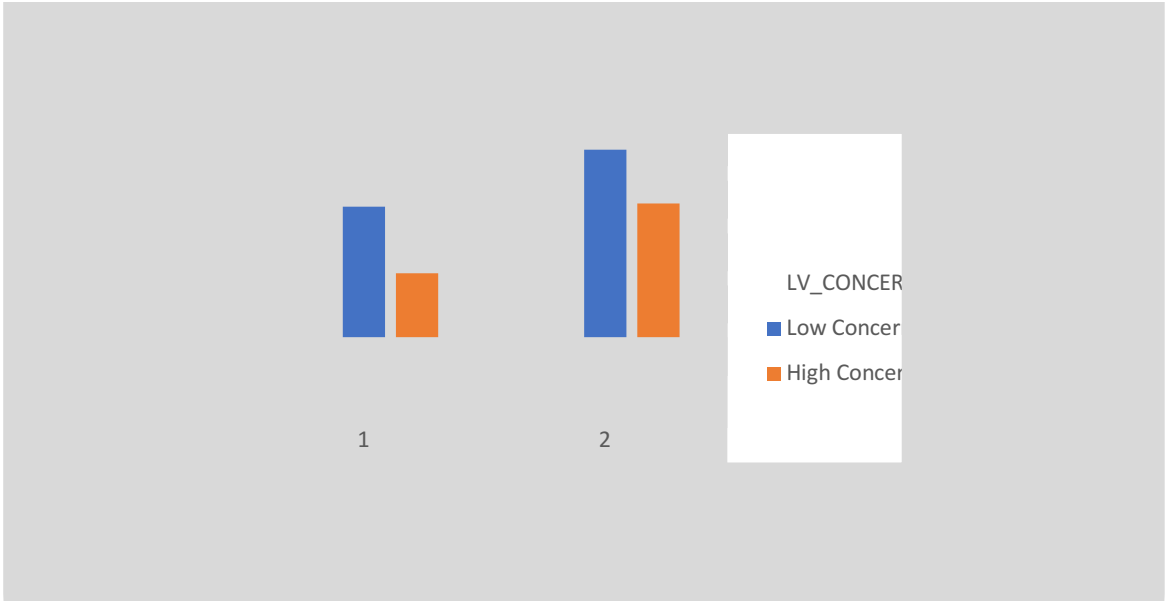
Source	Personalization	df	Mean Square	F	Sig.	Partial Eta Squared
Personalization	Linear	1	41.286	22.397	<.001	.293
Personalization * LevelofConcern_IV	Linear	1	.397	.215	.645	.004
Error(Personalization)	Linear	54	1.843			

Table 10:

Tests of Between-Subjects Effects – Likelihood of Use

Measure: LIKELIHOOD OF USE

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	1640.671	1	1640.671	417.703	<.001	.886
LevelofConcern_IV	37.337	1	37.337	9.506	.003	.150
Error	212.103	54	3.928			



Graph 5: *Estimated Marginal Means of LIKELIHOOD OF USE*

2.2 Control variable t-test

Table 11:

Independent Samples Test – Control Concern

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p			Lower	Upper
Control_Concern	Equal variances assumed	.767	.385	.440	54	.331	.662	.179	.406	-.635	.992
	Equal variances not assumed			.440	52.047	.331	.662	.179	.406	-.636	.993

Table 12:

Group Statistics – Independent Sample T-Test – Control Concern

	LV_CONCERN_GROUP	N	Mean	Std. Deviation	Std. Error Mean
Control_Concern	1	28	5.36	1.364	.258
	0	28	5.18	1.659	.314

**Group 1= High Concern, 2= Low Concern*

2.3 Manipulation Check Tables

Table 13 :

Descriptive Statistics – Manipulation Check

	LV_CONCERN_GROUP	Mean	Std. Deviation	N
PerceivedMatch_2_NP	Low Concern	3.04	1.990	28
	High Concern	2.54	1.527	28
	Total	2.79	1.776	56
PerceivedMatch_2_YP	Low Concern	4.75	2.066	28
	High Concern	4.50	2.046	28
	Total	4.63	2.041	56

Table 14*:*

Tests of Within-Subjects Contrasts – Manipulation Check

Measure: PerceivedMatch_Item2

Source	Personalization	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Personalization	Linear	94.723	1	94.723	25.405	<.001	.320
Personalization * LevelofConcern_IV	Linear	.438	1	.438	.117	.733	.002
Error(Personalization)	Linear	201.339	54	3.729			

Table 15:

Tests of Between-Subjects Effects – Manipulation Check

Measure: PerceivedMatch_Item2

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	1537.723	1	1537.723	421.852	<.001	.887
LevelofConcern_IV	3.937	1	3.937	1.080	.303	.020
Error	196.839	54	3.645			