The Motivations and Outcomes of Consumer Engagement with Online Sexual Health Communities

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Declaration

This statement and the accompanying publications have not previously been submitted by the candidate for a degree in this or any other university.

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Abstract

The continuous improvement in living standards has resulted in increasing attention being paid to personal health. The definition of health nowadays no longer refers only to physical or mental health, it also includes sexual health. Sexual health is not only understood in a narrow sense as Sexually Transmitted Diseases (hereafter STDs), but also the enjoyment and satisfaction of having sex with partners. Positive sexual experiences are beneficial to both physical and mental health (Hensel et al., 2016). Although, despite it being an important part of our lives, sometimes sexual health is difficult to discuss due to the stigmatization and discrimination associated with STDs, which can affect patients' intention to seek a doctor's advice, leading those patients in need to ignore their illness for fear of unfair treatment which in turn can lead to serious physical outcomes and psychological burdens.

The National Health Services (NHS) is under enormous pressure from an increasing demand for consultation; in 2020 more than 60 million people were listed as registered with the NHS (NHS Digital, 2020). This sometimes results in patients not being able to seek medical attention promptly or having only a short consultation time, which is sometimes not sufficient to properly address an individual's health concerns, and more specifically their concerns about STDs. By gathering users from multiple backgrounds and experiences to form a virtual online community, Online Sexual Health Communities (OSHCs) provide a platform for information sharing and the exchange of emotions (relating to sexual health). Combining the advantages of a virtual environment such as unrestricted time and space, OSHCs not only provide a convenient and effective consultation with users who may have similar health issues but also reduce the pressure on the NHS (Nagendra et al., 2020).

Despite the relevance of health communities in today's societies, the reasons why consumers engage with OSHCs has rarely been studied, nor has the consequences of such engagement on consumers' psychological and physical wellbeing.

This study believes that learning about the motivations and outcomes of OSHC engagement is conducive to enriching the existing engagement literature in the field. From a practical point of view, it provides a more comprehensive guide for those establishing, or seeking to establish, OSHCs. Accordingly, a clear understanding of a user's motivation for engaging with an OSHC can better help the founders of sexual health forums in improving their online communities. Furthermore, understanding the outcome of their engagement can help public organizations understand their influence on individuals' wellbeing. Scholars are calling for qualitative research on the impact of social media on consumer behaviour and societal wellbeing (Davis et al., 2016; Shensa et al., 2017). The present study lies within transformative consumer research, which focuses on significant social issues and challenges (Davis and Ozanne, 2019). Interviews were chosen for data collection due to their ability to uncover underlying motivations, beliefs, attitudes, and feelings (Rubin and Rubin, 2005), particularly in discussions involving sensitive or embarrassing topics (for example, body image concerns and self-esteem) (Malhotra et al., 2007). The author of this thesis conducted semi-structured interviews with 20 participants from one of the most popular OSHCs on Facebook namely *PrEp Facts: Rethinking HIV Prevention and Sex.* Data were analysed through both manual coding and NVivo. Ten themes emerged from the interviews including eight motivations and two consequences of engagement, which enabled the development of a conceptual framework of engagement with OSHCs

The contributions of this study can be viewed from both a theoretical and practical perspective. Theoretically, this study provides a conceptual framework regarding the motivations and consequences of consumer engagement. This study sheds light on eight motivations: information quality, information quantality, social support, fear, source credibility, convenience, online community quality, and privacy concerns. There are two outcomes of consumer engagement with OSHCs (health empowerment and entertainment), which contribute to the existing literature. Specifically, this study offers a comprehensive understanding regarding consumer engagement towards OSHCs, which can help online community moderators develop a better virtual environment based on consumer demands. Future research around this subject should use quantitative research methods to further verify the model developed in this study.

Keywords: Consumer Engagement; Online Community; Engagement Motivations; Engagement Outcomes; Qualitative Research; Online Sexual Health Community (OSHC); Sexual Transmitted Disease (STDs); Facebook

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A Chinese proverb says, 'When his parents live, a son should not go for abroad.' It is about cherishing every moment while we still have time to be with our families. Hence, I would like to say a profound apology to all my family members. First, my beloved grandma, Wei Ding. She is not only my grandmother but also my mentor. She teaches me to love life and be benevolent and guides me to be a kind person. My grandfather Zhong Du. A former railroad engineer, he has written three literary novels about his life. It is hard for me to forget Grandpa's earnestness and concentration when writing at his desk. I think it is such a spirit of concentration that drives me to complete my research. And of course, my parents, my mom, Aihong Qi. I do not know how to express my gratitude. Without your unconditional support and love, I would not have finished my study. And my dad Bo Du, the man who taught me wherever I am, never give up. Even though he was far away, the strong emotional bond never ended. Of course, my lovely cousins, as the eldest brother in the family. I hope I am a good role model to them. Thanks to all my family members for their understanding and support, which allowed me to do everything without hesitation and fear.

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When one chapter ends, another always begins.

To my beloved dog Brooklyn, the little prince who was by my side as I completed my research.

Table of Content

List of Abbreviations

Abbreviations	**Full words**
AIDS	Acquired Immunodeficiency Syndrome
BMA	British Medical Association
CE	Consumer engagement
COVID-19	Coronavirus
GP	General Practice
GDPR	General Data Protection Regulation
HIV	Human Immunodeficiency Viruses
LGBTQ	Lesbian, Gay, Bisexual, Transgender, Queer
MSM	Men who have sex with men
NHS	National Health Service
OHC	Online health community
OSHC	Online sexual health community
ONS	Online networking sites
RM	Relationship marketing
SCT	Stem cell therapy
SDT	Self-determination theory
S-DL	Service-dominant logic
SET	Social exchange theory
SDTs	Sexually Transmitted Diseases
WHO	World Health Organization
WOM	Word of mouth

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CHAPTER 1. INTRODUCTION

1.1. Chapter Overview

This chapter aims to provide the overall rationale and background behind this study, which investigates the motivations and outcomes of consumers' engagement with OSHCs. The thesis begins by stating the significant pressure that the NHS is facing due to the huge number of patients and the lack of healthcare providers, and, in section 1.2, how the relationship between doctors and patients has changed through the engagement with OHCs. Rapidly increasing health-related internet usage indicated by the emergence of OHCs is presented in section 1.3. Section 1.4 describes the stigmatisation of some STDs which has increased the difficulties in solving the issues and concerns associated with sexual health, which in turn emphasises the effectiveness of OSHCs, discussed further in section 1.5. The main purpose, objectives and the research questions of this study will be presented in section 1.6. The research methodology adopted in this study will be briefly described in section 1.7. Lastly, a summary of this chapter will be offered in section 1.8.

1.2. The Doctor-Patient Relationship in the Internet Era

Over the past two decades, there has been a dramatic increase in the number of consultations with general practitioners (GPs), which has increased pressure on the NHS in the UK. Up to 1 December 2020, there was a total of 60,570,367 patients registered at GP practices, an increase of 41,921 patients compared to 1 November 2020 (NHS Digital, 2020). According to the British Medical Association's (BMA) quarterly survey, in 2019, a total of 2.23 million patients were waiting more than 28 days for a GP appointment. There were also 213,000 fewer same-day GP appointments because of the lack of medical professionals. In addition, 87% of GP partners worked or trained outside of their regular hours (BMA, December 2020). Because of the limited capacity and high demand over the winter months, more than 78% of medical/dental staff and over 83% of consultant-level staff were working extra hours, unpaid, and junior doctors had been moved away from specialist trainings to face frontline demand, which damaged not only their professional development, but also their mental health (Clarke and McKee, 2017). The sudden outbreak of Coronavirus (COVID-19) in 2020 has made things worse for the NHS, and it now finds itself under the most severe pressure in its 70-year history

(BMA, December 2020). The impact of COVID-19 on the NHS is huge, cumulative and persistent; the increasing number of COVID-19 patients has seriously affected the provision of primary care (Propper et al, 2020). According to the BMA (December 2020), non-Covid-19 patients are deprived of priority treatment and therefore must wait longer – the overall number of patients waiting more than a year is 123 times higher than in 2019. The increased waiting times mean that it is possible to accumulate health problems which have severe consequences.

From these statistics, it is not difficult to find out that due to the high demand on its services, the lack of professional medical staff and the need for necessary medical supplies, the NHS is under enormous pressure (NHS Digital, 2020). Hence, over time, patients showed lower satisfaction with health providers, mainly due to not getting enough information regarding their health issues during their consultations (Oxtoby, 2010; Salisbury, 2019). Due to the increasing number of patients, a GP is asked to carry out a 10-minute consultation for each patient, presenting with one health concern. However, according to the Lawson (2019) published on the British Journal of General Practice, the current 10-minute consultation is not long enough for patients to understand their illness and the treatment prescribed by their doctors. Warnings from GP leaders have outlined that it is impossible to manage patients over the age of 18 within a10-minute consultation due to the increasing number of patients and the complexity of their diseases. Multimorbidity refers to co-occurring diseases which correspond to life-threatening diseases such as cancers or sexual health-related illnesses. Patients suffer not only physical discomfort, but their mental health suffers too. Therefore, a limited 10-minute consultation cannot solve a patient's concerns, rather a sufficient amount of time and detailed consultation with health professions is urgently needed. Fortunately, the development of internet technology has changed the way people obtain health information and advice. Because of limited capacity and the difficulty of getting an appointment with local GPs, many patients and those seeking health information have begun using the internet to search for health-related information and advice associated with their symptoms (Cole et al., 2016). Online GP counselling was also found to be a coercive measure used to relieve pressure on the NHS during the outbreak, wherein non-COVID-19 patients and staff are required to be protected by conducting GP consultations remotely (BMA December 2020).

Traditionally, health information and advice were acquired by direct interaction (face-to-face) in the context of institutional health services with doctors, nurses, physicians, therapists (Fan et al., 2014). Doctors usually make a diagnosis using medical tools after listening to the patient describe their symptoms. Thereafter they prescribe a medicine or treatment if, needed (Banerjee and Sanyal, 2012). In the traditional doctor-patient relationship, patients were required to follow their doctors' decision regarding on their illness, and patients rarely questioned the decisions made by the health professional, because knowledge related to health and diseases was not easily accessible and was seen as the 'intellectual property' of the doctors. Furthermore, a patient inherently trusted doctors because they believed they had the right knowledge, expertise and training. Doctors occupy a dominant position in traditional medical relationships, while patients are more likely to follow the doctor's instructions, take their medication on time, and return regularly.

As time has passed, the doctor-patient role has evolved (Tan and Goonawardene, 2017). The ubiquity of the internet and the democratisation of information access has enabled an increasingly high number of people to search and obtain various information online, including health-related information and health education (Broom, 2005; Singh and Banerjee, 2019). And the development of the internet has been further utilised greatly during the COVID-19 lockdown time. Hollebeek et al., (2020) addressed the effect of lockdown-imposed socially distant, essential service interactions on promotion customers' brand engagement. In the case of health services, as one of the crucial essential service, health consultancy with doctor-patient direct interaction (face-to-face) has been limited with the severe lockdown, therefore, patients are expected to seek consultancy by engaging with such essential service in alternate ways, including through platform-mediated interactions (for example, by registering on the NHS' website or interacting with online health communities to optimise their experience during lockdown). With such the gap of constraints in direct interaction between doctor and patients by lockdown time, the motivation for patients' participant in online health communities can even rise to greater level.

Patients engage with the internet to access health-related information regarding their disease in order to make treatment decisions and to discuss treatment strategies with their health providers. Unlike in the past, the patient is no longer simply a follower of a treatment plan, but a co-participant in the decision (Griffiths et al., 2012). By enabling individuals to access health-related information, the internet has empowered the patient who is now more in control of their health status (Zoghlami et al., 2020; Szulc and Duplaga, 2020). This empowerment has thereby greatly helped patients prepare for a doctor's appointment make a treatment decision (Small et al., 2013; Boivin et al., 2018). However, there are concerns regarding health professionals' attitudes towards health-related information gleaned from the internet, which can harm the doctor-patient relationship. This study underlines the doctor dominant position in the doctor-patient relationship; most patients have no medical background and should use the information they find online to discuss their treatment options with their doctors, but they should not use information gained from the internet to replace decisions and advice made and given by doctors.

1.3. Health-Related Internet Usage

The way people use the internet is constantly changing. The World Wide Web was first introduced in 1989 by Tim Berners-Lee (Boulos et al., 2007), and has since evolved through three distinct phases: Web 1.0, Web 2.0 and Web 3.0 (Anderson, 2007). Web 1.0 is sometimes also described as 'read-only' web and is viewed as the early version of the internet spanning the period from late 1996 until 2004, and represents a time when webpages were built mainly to provide information (Berners-Lee, 1998). Users could only browse pages rather than transfer information, and communication was always one-way, so the consumer could not interact with the information provided by websites (Choudhury, 2014).

The emergence of Web 2.0, sometimes known as the 'read-write' web spanned the period from 2004-2016 and changed the structure of webpages as well as users' online behaviours (Berners-Lee, 1998). Distinct from Web 1.0, Web 2.0 webpages were developed to provide bi-directional communications, which facilitated consumers' interaction and participation in online discussions and blogs, further helping to gather collective intelligence (O' Reilly, 2006; Choudhury, 2014).

The emergence of Web 3.0 is undoubtedly a milestone in developing network technology and is also viewed as the 'executable' web. Based on a multi-user virtual environment, Web 3.0 means that information or data can be reused and transferred through application, enterprise, and community boundaries (Berners-Lee et al., 1999; Jane et al., 2003). Information is shared within a common online community where a multi-directional interaction between the members accelerates the speed of information dissemination so that solutions to problems can be found more quickly from the information provided by different users (Choudhury, 2014).

The internet provides a platform for individuals to access health-related information. Patients have started to use the internet to obtain information in preparation for a doctor’s visit, to obtain routine information such as drug dosages, and for self-diagnosis and care (Rains, 2008). Since patients were often unable to obtain sufficient information or to thoroughly discuss their health issues during short face-to-face interaction with doctors, practice nurses, or other health professionals, they started to search for additional information over the internet. Due to the fact that patients may lack medical knowledge, they need more time to learn, but the time for patients to discuss their health issues with a doctor is limited. In this context, the internet has allowed, for the first time, consumers to search, be aware of, and to gauge the health-related information that facilitates their health-related decision making (Cunningham and Johnson, 2016).

The development of internet technology has facilitated consumers’ engagement towards online health communities in order to reduce anxiety and stress related to a lack of health knowledge, they also seek to minimise depending on potentially misleading information (McMullan et al., 2019). According to the Office for National Statistics (ONS, 2019), a total of 63% of adults engaged with the internet for health-related information in 2019, an increase of 11% from the previous year. Within this 63% of adults, 68% were women compared to 59% of men. Health information-seeking has become one of the fastest-growing internet activities in the UK. By using internet communities, patients are improving their knowledge and taking independent decisions about their health, rather than just waiting for a doctor’s decision. The ongoing shift from traditional face-to-face interaction with qualified medical staff to instead seeking health-related information through online health communities is making patients’ lives more convenient, and it has the benefit of relieving the pressure on local GPs.

The use of internet technology even showed its significance in terms of health-related concerns during COVID-19 outbreak. With its worldwide spread, COVID-19 has affected all aspects of people’s life and economy. To reduce virus transmission, travel restrictions have been implemented and tightened worldwide, and numerous cities have been lockdown (Smith AC et al, 2020). Thus, unique and innovative, online solutions have been invented to adopt new situations and address the crucial needs of patients with COVID-19 infection and others who need healthcare service (Wax RS, 2020). The NHS online service was used by 22.5 million UK adults as of March 2020 as the country entered lockdown. The NHS Covid-19 app used by adults in England and Wales reached the peak in October 2020 with 12.6 million users, equivalent to 27% of the population in England and Wales (Ofcom, Online Nation Report in 2021). Besides searching pandemic information, sexual-related concerns also a major usage of online service, thriving by the restrictions of lockdown, making people unable to visit clinics directly. Between February and May 2020, the percentage of sexual-related consultations implemented via online services doubled from 23% to 46%, according to Public Health England in 2021. Not only the official online health services witnessed the tremendous increase in usage ratio, but other platforms also recorded similar increasing trend for such sexual matters, e.g., Online Sexual Health Communities - a major destination for people who seek sexual-related information from those who have similar conditions with them or listening advice from experts. In this exploding era of internet usage, such communities have been helping ease the burden for official health departments and are worth investigating further for more comprehensive perspectives. These communities will be analysed in detail in the following sections.

1.4. Sexual Transmitted Diseases and Stigmatisation

According to Centres for Disease Control and Prevention (2020), sexually transmitted diseases are described as a single or several infections transmitted from one person to another person through sexual contact, caused by bacteria, parasites and viruses. Sexual transmitted diseases (STDs) are infections such as chlamydia, gonorrhoea, syphilis, herpes, and HIV/AIDS. Antibiotics can treat most of the diseases caused by bacteria and parasites, but antibiotics do not treat viruses like HIV/AIDS. Nevertheless, medicines can effectively manage these diseases or even prevent infections – for example, PrEp (pre-exposure prophylaxis) is a medicine which, if taken correctly, can prevent 99% of HIV infections.

Sexually transmitted diseases are stigmatised, and people often feel ashamed if they have contracted an STD (Lewis,1990; Tangney, 1995). People who have been diagnosed with a sexually transmitted disease/s are always afraid of their privacy being exposed (Tangney, 1996) because of the associated stigmas around sexual behaviour. This is especially true for those engaging in same-sex relationships. Research has found that individuals are less likely to disclose their sexual behaviour and/or their concerns around STDs if they engage in anal sex and oral sex because they are afraid of being stigmatised by others (Park M, Anderson JN et al., 2014; SD Cunningham et al. 2002). This reluctance to seek help may strongly influence their willingness to take a test or seek help for sexual health-related concerns, which can further cause potential health problems (Smith et al., 1999; Cunningham et al., 2002). An individual's sexual orientation and behaviour are often associated with the stigmatisation of sexually transmitted diseases. Specifically, men who have sex with men (MSM) behaviour has been found to be the demographic most likely to become infected with STDs/HIV (Kalichman et al., 2017). This compounds further the stigmatization of MSM associated with STDs/HIV. However, one principle that needs to be made particularly clear in this study is that the MSM in itself is not the cause of the high rate of STDs/HIV infection, rather anal sex is the underlying cause.

Sexual health-related concerns are always associated with individuals' sexual experiences. It can be embarrassing for patients to expose their sexual life even within a specific sexual health clinic but withholding information from medical professionals can be a serious impediment to treatment. The emergence of the online sexual health community (OSHC) provides a virtual platform for people to ask questions about sexual health-related issues (Gabarron et al, 2016), wherein users are not constrained by time and space but can ask questions at any time and from anywhere and then simply wait for other users to reply. In a virtual environment, patients do not need to worry about their privacy being compromised nor do they need to be concerned about being stigmatised because they can use anonymous profiles and not disclose their real identity (Frost et al., 2014). Furthermore, the OSHC is likely to satisfy users' information needs because some of the users in this community may have experienced the same concerns. The following section will describe the OSHC in greater detail.

1.5. Online Sexual Health Communities

There are different sources of health information available from the internet. These include health websites established by governmental health agencies, private healthcare providers or institutions, internet news, physicians' blogs, user-generated health information posted on social networking sites and health forums by lay-people. An online health community (OSHC) is a collection of small internet-based virtual discussion groups in which people with a shared topic of concern about health share information, experiences, and feelings and provide support and encouragement to fellow members (Fan and Lederman, 2018).

The online sexual health community (OSHC) is described as an online social network related to sexual health and aims to provide a mean for patients to learn about sexual health-related illnesses, to seek and provide social support, building a bridge between each member in similar circumstances, such as those diagnosed with STDs. An OSHC can be composed of users who have concerns about getting infected with STDs, and doctors and medical providers working in sexual health clinics, medical students or non-professional users who simply want to gain knowledge (Eijk et al., 2013). This type of online community is observed to have a similar structure with other online communities, for example, IT discussion communities or luxury handbag communities and so forth. With the virtual communities emerging in this internet era, participants can freely discuss and extract information for their comprehension without barriers. Hollebeek et al (2017) with their study on virtual brand community engagement highlighted the significance of achieving a group of members to engage online and willing to propose, implement, and spread specific virtual brand community engagement practices to others, helping to update latest information on particular topics. This contributes and maintains the community's vision and identity amongst others and improves the importance of a shared community with high-quality information and consciousness within their specific sector, either in health, fashion, or IT topics.

In the case of health concerns, OSHCs provide a platform that fulfils the needs of the individual to exchange sexual health-related information and knowledge in order to solve specific sexual health-related concerns or to accumulate knowledge. OSHCs seek to improve sexual health-related services regardless of geography – whether it is local, regional or worldwide (Minichiello et al, 2013). Compared with face-to-face communication with a doctor, users feel more comfortable describing their illness in a well-controlled and managed community. Research on information flows and attitudes within health communities highlighted that links between people can stimulate the discussion of related information amongst peers, and thrive their perspective toward such information, as individuals are more receptive to information shared by others who have similar conditions like them (Hayat et al, 2017). Helped by other users regarding their sexual health-related questions, an OSHC user may find help in resolving their issue and further save the cost of going to the hospital, which in-turn reduces the pressure on the NHS and leaves to the way clear from those patients who are more in need.

This study focuses on the consumers who engage with the largest OSHC, which is hosted on the social networking platform Facebook, and is called *PrEp Facts: Rethinking HIV Prevention and Sex*. One of the reasons for choosing this online community is that it was the first online sexual health-related community to be founded (it was established in 2007). By choosing an established online community this study can gain more evidence as a result. By 2020, this online community had over 21,000 participants, which is far more than any other online sexual health community. Due to its longer history, it is more likely to identify experienced participants for this study in order to obtain a more in-depth understanding of the phenomenon under investigation. Another reason for choosing this online community is because it mainly provides support for homosexuals, and men who have sex with men, who suffer amongst their demographic from a higher rate of STD and HIV infections, and often develop concerns around this. Therefore, this study believes that the choice of the target community can better answer the research questions and produce real and reliable research results.

1.6. Research Purpose, Research Objectives and Research Questions

With the rise of the internet, the online health community (OHC) has been chosen by more and more users as the primary way to obtain health information, and this is especially true for severe or very sensitive illnesses such as cancer and sexually transmitted diseases (Zhang et al., 2017; Lee et al., 2019). Previous studies around OSHCs have focused on their effects and specific purposes. For example, an OSHC can provide information and emotional support, and the mutual encouragement people find among community members can enhance awareness of STDs/HIV detection (Zhang et al., 2017). Alternatively, by engaging in with an OSHC, users receive more HIV-related knowledge, such as safe sex and regular check-ups, thus reducing the risk of HIV infection (Shrestha et al., 2020). The extant research also found that online sexual health communities are beneficial in educating the lesbian, gay, bisexual, transgender, and queer (LGBTQ) group about sexual health-related knowledge (Nelson et al., 2019). Based on the engagement of users and online communities, OSHC has great potential to promote active access to sexual health-related education among young people (Martin et al., 2020).

Since the OSHC has significant benefits in promoting people's sexual health conditions, the reasons why users engage with OSHC are worth investigating. Consequently, the outcomes which follow this engagement are also expected to be discovered. By understanding what conditions can meet the needs of users and further drive their intention to engage with OSHC, as well as the benefits obtained after an engagement can help researchers and marketers to develop OSHCs to improve, in order to contribute more towards addressing users' concerns regarding sexual health. Thus, the current study is looking for the motivations and outcomes of consumers' engagement towards the online sexual health community. One significant point that needs to be made clear in this study is that STDs/HIV is unquestionably not 'exclusive' to the LGBTQ community, anyone who is sexually active has a chance of getting STDs/HIV (U.S. Department of Health & Human Services, 2021). The reason that this study has specifically mentioned MSM is because of the possibility of contracting STDs/HIV is higher than for other types of sexual intercourse; anal sex is more likely to cause damage to the body's mucous membranes, so the virus is more likely to cause infection (Wilton, 2018). In other words, *any* individual who engages in anal sex faces the same potential risks for STDs/HIV infection, and since MSM's primary sexual activity is anal sex, the MSM population will subsequently have more concerns about sexual health. The purpose of this study is to explore the motivations and consequences of consumer engagement with the OSHC. Thus, this research is aimed at all consumers who engage with the OSHC, regardless of their gender and sexual orientation. To achieve the research purpose, the following list of research objectives has been addressed:

- ***RO1: To justify and further strengthen the theories that have been adopted to support consumer online community engagement by referring to previous studies with comprehensive discussions.***

- ***RO2: To review and clarify the factors that influence consumer engagement with an online sexual health community via the existing literature.***

- ***RO3: To explore the consumers' motivations and outcomes of engaging with the online sexual health community by conducting empirical research.***

- ***RO4: To further prove the importance of online sexual health communities for those with health concerns seeking support outside of official health agencies.***

Currently, the research into the motivations for consumer engagement with online sexual health communities is still limited. Scholars have found that the OSHC has a positive effect on improving people's sexual health status (Trapence et al., 2012; Zhang et al., 2017). However, no research has comprehensively explored the motivation of consumers' engagement with the OSHC. A comprehensive and in-depth study focusing on users' motivation for engaging with the OSHC will help expand research on customer behaviour towards virtual communities and understand why users seek out the OSHC with a view to guiding community creators in effectively improving the overall level of the OSHC and making users more satisfied. Hence, the first research question has emerged:

RQ1: What are the motivations for thriving consumer engagement in the online sexual health community?

It is worthy to find out the outcomes of consumer engagement with the OSHC. Understanding the consequences which follow on from engagement with the OSHC is helpful to establish a complete cognitive structure for a user's engagement with the OSHC. Previous studies related to consumer engagement have focused on its motivations rather than its consequences. The outcomes are viewed as the likely results or short-term and medium-term effects of an activity or behaviour's outputs. The consequence of consumer engagement comes from the overall feeling of the users in the process based on their experience of engagement towards OSHC. Satisfactory engagement experiences will lead to positive outcomes, while unpleasant experiences will lead to negative engagement consequences. By examining the engagement outcomes, we can effectively reflect on the performance of the OSHC, which may better tailor the quality of the community to the needs of users. Therefore, the second research question comes after to demonstrate that performance:

RQ2: What are the outcomes of consumer engagement towards the online sexual health community?

When the outcomes of consumer engagement have been analysed, it is considered as the essential next step for the online community creators to further evaluate their community's contribution in terms of sexual health consultancy/discussion. Since it emerge to the stage of reaching a stable consumer engagement ratio, online community creators always have to improve the quality of consultancy with sexual-related concerns, support trusted sources/references or experts that have expertise in such terms. The better, broader sexual health contents/topics emerged and come up with advice/consultancy, the greater ratio of consumer engagement into these online communities will show up. This would help to further analyse the motivations behind the consumer engagement, and also further delight the importance of online sexual health communities in consulting sexual-related concerns besides official health units such as NHS. Therefore, the third research question comes on stream to address such improvements:

RQ3: What methods can online sexual health community creators implement to improve quality and interaction within their community?

1.7. Research Business and Management Values

By doing the specific research regarding online sexual health communities, this thesis also aims to provide the business and management values in terms of the three relevant pillars within the connections of these communities. They are: users, community creators, and government health units (the NHS). Such business and management values can be discussed around how the thesis can provide more comprehensive perspectives on the benefits of online health communities to society. Specifically, the three aforementioned pillars. When the established situation changed with the disruption by Covid-19, there were severe consequences for all aspects of society and it is important to explore the motivations, as well as outcomes of consumer engagement into OSHCs. Moreover, it is vital to consider what improvements on these online communities can make to ensure a better, more useful resource for those in need of sexual health consultancy in the future, whilst also acting to reduce pressure on the state health agencies. The values for each pillar can be highlighted as following:

- ***For users***: The motivations and outcomes of consumer engagement in the era of internet – specifically in the OSHCs can be explored further, when one-to-one consultancy with a doctor is no longer the must-have situation when a patient is in need of health services. Compared with such direct consultation, users feel more comfortable describing their illness in a well-controlled online community where they can be anonymous but can also seek helpful information (White et al., 2001; Wright et al., 2016). The OSHC can provide tremendous information to help them ease sexual health-related concerns. By enabling users to access health-related information, the internet has empowered the patients who is now more in control of their health status (Zoghlami et al., 2020; Szulc and Duplaga, 2020). As consumers engaging with OSHCs, they are willing to learn more about health-related treatments (Dutta-Bergman, 2003) and tend to employ social media to solve health concerns (Shabi, 2018), which further encourage the development of online communities to the next level when these platforms can explore and solve the health problems based on the needs of users, supported by the convenience they allow, as they do not require travel or direct meetings with doctors.

- ***For online community creators:*** By providing an online platform that can sufficiently meet the needs of people to discuss sexual health-related information, building a bridge between users who have their own concerns, doctors and medical providers working in sexual health clinics, medical students or non-professional users who simply want to gain knowledge (Eijk et al., 2013), these online communities have proven their significant role in reducing pressure on government health units (the NHS in the case of this thesis). Helped by numerous users regarding their sexual health-related concerns, an OSHC user may receive support in these communities rather than potentially incurring the time and effort associated with a hospital visit. This will in turn reduce the pressure on the NHS and leave the way clear from those patients who are more in need. Given that considerable importance, it is crucial for the OSHC creators to further improve their communities' quality and interaction amongst users and health experts. Not only can they achieve their own benefits for greater growth, but they can also further relieve the state health services, which reached their full capacity during the Covid-19 outbreak.
- ***For government health units:*** The sudden outbreak of Coronavirus (COVID-19) in 2020 caused severe disruptions for the NHS, which now finds itself under the most severe pressure in its 70-year history (BMA, December 2020). Besides other health problems, sexual-related concerns are also a major subject that put the NHS under greater pressure. Between February and May 2020, the percentage of sexual-related consultations implemented via online services doubled from 23% to 46%, according to Public Health England in 2021, driven by Covid-19. By such disruption of direct consultancy with doctors, it is considered as an improvement in health consultancy services that the government health units can further promote the online health communities as a supporting service alongside them to ease the enormous pressure,

driven by the lack of professional medical staff and the need for necessary medical supplies caused by Covid-19 outbreak (NHS Digital, 2020). By such supporting information provided from OSHCs with the cautious collaboration of government health units and health experts, community users can extract helpful information for their concerns before reaching out to the doctors regarding specific treatments. Despite the significant support of OSHCs, the doctor-dominant position in the doctor-patient relationship must remain unchanged. Most patients have no medical background and should use the information they find online to discuss treatment options with their doctors, but they should not use information gained from the internet to replace decisions and advice given by doctors.

1.8. Research Methodology

To achieve its research purpose and objectives, this study aims to develop a conceptual framework regarding the motivations and outcomes of consumer engagement with the online sexual health community, based on a qualitative research methodology. Although consumer online community engagement has already been studied, it is still under-researched in the context of the health community, and especially in the area of sexual health. Following the inductive research approach, the semi-structured interview will be adopted in order to gather in-depth information regarding users' motivation in engaging with the online sexual health community and the outcomes of engagement. Twenty participants including fifteen males and five females have been selected from the target community, namely *PrEp Facts: Rethinking HIV Prevention and Sex*. This community was chosen due to its popularity and number of users. We believe that this will enable us to collect rich data. Each participant will receive a £15 Amazon.com voucher. All of the interviews will be recorded and strictly kept under the General Data Protection Regulation (GDPR). Data will be analysed manually and by using software (NVivo 12). Finally, a conceptual framework will be presented.

This thesis is comprised of six chapters: Chapter 1 introduces the background to this research and discusses the rationale for studying this topic. After confirming the research questions and objectives, Chapter 2 will review the extant research regarding consumer engagement with the online community, specifically regarding the motivations and consequences of consumer engagement, in order to discover the theoretical research gap. Chapter 3 will discuss the research philosophy, methodology and research design. The findings which emerge from the empirical research will be displayed in Chapter 4. A discussion will be presented in Chapter 5 with detailed explanations and evaluations regarding the research findings. Finally, a summary of this study will be presented in Chapter 6, including the theoretical contributions, the study's practical implications and limitations, and future research directions.

1.9. Research Structure

Four significant elements are required to constitute a thesis: background theory, focal theory, data theory and contribution (Philips and Pugh, 2010). In this thesis, chapters 1 and 2 present the background theory by introducing the rationale behind this study, based on reviewing the previous literature. The focal theory is presented in chapter 3, with a detailed description of the methodology adopted in this study. Following chapters 4 and 5, the data theory will be outlined by reporting and discussing this empirical research. Finally, the contribution of this study will be presented in chapter 6. The detailed structure is explained as follows:

- Chapter 1- Introduction: This chapter aims to provide the background and research problems related to this study, further stated in the research purpose, research objectives and research questions. Finally, a summary of the methodology adopted by this study is presented with a brief explanation.

- Chapter 2- Literature Review: This chapter intends to investigate the research gaps and emphasise the research questions by reviewing the previous literature beginning with consumer engagement and consumer engagement with virtual communities. This will be followed by a review of the literature on the theories adopted in previous studies regarding consumer engagement with online communities. Next, the motivations and outcomes found in existing studies are described, particularly in the online health industry, as well as the connection between consumer engagement with online sexual health communities. Finally, the research gaps that emerged from the literature will be identified and discussed.

- Chapter 3- Research Methodology: This chapter aims to provide the research paradigm, research philosophy, research approach, and the research strategy adopted in this study. In addition, the sampling and data collection method are discussed with a complete research process and ethical considerations. Finally, the data analysis techniques used in this study are introduced.

- Chapter 4- Research Findings: Through qualitative research, this chapter will present the findings of this study, including the reliability and validity assessment. Thereafter, the interview findings analysed by NVIVO 12 are reported with the codes and themes that emerged from the research data, supported by a thematic map and coding framework.

- Chapter 5- Discussion: This chapter will evaluate and discuss the research findings in this study within the relevant literature. A more detailed, conceptual framework with the themes driven by the data will be presented.

- Chapter 6- Conclusion: A summary of this study and the key findings are offered in this chapter, which has brought together the research gaps and research questions. This chapter also provides the theoretical contributions and practical implications from the findings of this study. Finally, the limitations and guidelines for future research are also highlighted.

1.10. Chapter Summary

This chapter has provided a clear introduction of this study, from the rationale behind undertaking this research to the development of the research questions and objectives. This chapter has also given a brief account of the research methodology and research structure. The next chapter will present the literature review.

CHAPTER 2. LITERATURE REVIEW

2.1. Chapter Overview

This chapter aims to review the theories of consumer engagement with a specific focus on the motivations and outcomes of consumer online community engagement. This chapter also highlights the research gaps regarding the motivations and outcomes of consumer engagement with online sexual health communities.

2.2. Consumer Engagement

With the development of the social economy, customer demand changes rapidly, and the competition between markets intensifies. With the rapid development of the internet and other social media, the relationship between customers and enterprises is also changing. The simple transaction process is no longer enough to explain the current relationship between enterprises and customers (Morgan and Hunt, 1994). Customers come to be valued as co-creators by participating in the process of designing and establishing the companies or services (Vargo and Lusch, 2004). Moreover, customers are tightly connected with others by social media platforms, where brands create communities (Mollen and Wilson, 2010). In this context, strengthening customer relationship management and achieving customer engagement becomes a strategy for firms to increase sales revenue, profitability and gain a competitive advantage (Bordie et al., 2011). Hollebeek, L. D's (2017) study contributes to our understanding of consumers (C2C) interactions, behaviours, co-creation, and relationships within online brand communities; therefore, furnishing community managers with clearer insights into related practices undertaken in virtual brand communities. Afterward, they may deploy various tactics to engage and create bonding with consumers, strengthen the customer value proposition and finally, generate better organisational performance. Particular examples might be the undertaking of consumer-hosted, brand-related events, which may provide an opportunity for the community to get closer to customers, and in contrast, create reverted interaction from customers' side. This sets the great foundation to further achieve the research question on what methods that community creators can implement to improve content quality, consultancy quality, and interaction within their community.

The term ‘consumer engagement' was first mentioned by the Gallup Organisation (2001) in a business magazine, which described the elements establishing consumer behaviour as rational loyalty and emotional attachment. The Advertising Research Foundation (ARF) describes it as 'turning on a prospect to a brand idea enhanced by the surrounding context' (Advertising Research Foundation, 2006). However, this definition is too broad, and many organisations have redefined the context of consumer engagement as a strategy that builds a deep connection with customers and therefore contributes to customers' purchase decisions, as well as their interaction and participation over time (Forrester Consulting, 2008). The Economist Intelligence Unit (2007) viewed consumer engagement as long-term relationship building with customers. Ryan (2014) describes consumer engagement as a mutually beneficial relationship with a continually growing community of online consumers. Regarding different engagement platforms, products, and concepts, the definition of consumer engagement is different.

Patterson et al. (2006) view consumer engagement as the level of perceived emotional and behavioural performance of a business. From the perspective of service-dominant logic and relationship marketing theory, consumer engagement is described as 'A [consumer's] state of being occupied, fully absorbed or engrossed,' thus generating "a level of attraction to, or repulsion from, a focal engagement object (Higgins and Scholer, 2009). Cheung et al. (2011) described consumer engagement as the level of a customer’s behavioural manifestation toward the brand or firm, beyond connections with a particular online social platform. Bowden (2009), Mollen and Wilson (2010) focused on consumers' cognitive and emotional perspectives and defined consumer engagement as a psychological process which describes the mechanism of loyalty generated by new customers and maintained by existing customers. Sanna et al. (2014) reviewed consumer engagement as a hidden psychological state/process, which could upgrade to consumer engagement into a behavioural dimension. Behavioural engagement is viewed as a series of transactional and non-transactional activities, such as word-of-mouth, writing blogs and comments, recommending and helping other customers (Van Doorn et al., 2010). The process reflects the strength of connection or participation between customers and enterprise, products and services. These activities predict the future sales and improve brand reputation by eliciting positive word of mouth (Kumar et al., 2010a; Vivek et al., 2012; 2014; Cambra-Fierro et al., 2013).

These studies are all based on a unidimensional view of the concept of consumer engagement. Brodie et al. (2011) emphasised the need for a multi-dimensional definition of consumer engagement, due to the fact that the unidimensional conceptualisation could not describe the interactions between the subjects and the objects of engagement. Thus, consumer engagement was re-defined as *'the level of a customer's motivational, brand-related and context-dependent state of mind characterised by specific levels of cognitive, emotional and behavioural activity in brand interaction*s.' As a multi-dimensional concept, consumer engagement is viewed as a dynamic, repetitive and interactive process co-created between customers and enterprises (Hollebeek, 2011, p.6). The definitions of consumer engagement from the previous studies are presented in Table 1 below.

Authors/ Organizations	Year	Definition
The Gallup Organization	*2001*	*‘The elements establishing consumer behaviour as rational loyalty and emotional attachment.’*
The Advertising Research Foundation	*2006*	*Turning on a prospect to a brand idea enhanced by the surrounding context'*
The Economist Intelligence Unit	*2007*	*‘Consumer engagement is a as long-term relationship building with customers’*
Forrester Consulting	*2008*	*‘A strategy that builds a deep connection with customers and therefore contributes to customers' purchase decisions, as well as their interaction and participation over time’*
Patterson et al.	*2006*	*‘The level of a customer’s physical, cognitive and emotional presence in their relationship with a service organization’*
Bowden	*2009*	*‘A psychological process that leads to consumer loyalty to the service brand.’*
Higgins and Scholer	*2009*	*'A [consumer's] state of being occupied, fully absorbed or engrossed,' thus generating "a level of attraction to, or repulsion from, a focal engagement object’.*
Mollen and Wilson	*2010*	*‘A psychological process, which describes the mechanism of loyalty generated by new customers and loyalty maintained by existing customers’*
Van Doorn et al	*2010*	*‘The Customer’s behavorial manifestation towards the brand or firm, beyond purchase, resulting from motivational drivers.*
Cheung et al.	*2011*	*‘The level of a customer’s physical, cognitive and emotional presence in connections with a particular online social platform.’*
Hollebeek et al	*2011*	*'The level of a customer's motivational, brand-related and context-dependent state of mind characterised by specific levels of cognitive, emotional and behavioural activity in brand interaction*s.'
Vivek et al.	*2012*	*‘The intensity of an individual’s participation and connection with the organization’s offerings and activities initiated by either the customer or the organization.*

Table 2.1. The Definitions of Consumer Engagement

2.2.1. Consumer Engagement and Virtual Community

As the focus of marketing shifts from merely focusing on transactions to developing positive relationships with customers and ensuring customer satisfaction and loyalty (Pansari & Kumar, 2017), social media is increasingly valued by companies because it can stimulate a user's participation and provide a new way of interaction and communication between users and enterprises (So et al., 2014). Social media platforms allow consumers to create user-generated content, interact with other users by commenting and reposting and, at the same time, they facilitate the direct interaction between customers and enterprises. Marketers need to not only manage vast amounts of customer data, but they must also engage with their customers (Kaosiri et al., 2019). Enterprises are gradually turning to social media platforms to promote their business, allowing customers to participate in online activities by engaging with social media platforms to obtain the market share and communicate concerns related to the products or service, and to make correct purchase decisions (Chatterjee & Kar, 2020). Social media turns online communication into a conversation between users where the topics are both personal and social, covering brands, consumer products and the other information about companies (Rode, 2016).

In academia, the concept of a "virtual community" was first used by Rheingold (1993) to describe social groups that emerged from online communication. Virtual community refers to the conduct of regular, organised, interactive groups through the internet which results in a group of individuals who share the common interest (Ridings et al., 2002). Virtual community is defined as *'a social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace (Rheingold, 1993, p.8)'*. Social belonging is one of the main characteristics of the virtual community, and it comes from the common goals, needs, interests and activities of the members (Miño-Puigcercós et al., 2019). The dynamic interaction between members also forms a strong emotional connection between them and motivates members to actively participate in the community. The virtual community provides a way to get the resources which users need and are willing to share in order to realise the mutual benefit, support and assistance under the common social customs, language and agreement environment (Chang, Hsieh, and Fu, 2016). Coulson et al (2005) emphasised that the identity of a community member includes a sense of belonging to a particular social category, which strengthens the notion that virtual communities are relationship-based.

Many scholars have carried out in-depth research on customer engagement in virtual communities which emphasises that customer engagement is a kind of behaviour of customers, including word-of-mouth recommendation, commenting, helping other users, writing blogs and other activities, which the target of engaging can be enterprises or brands (Kumar et al., 2010; Van Doorn et al., 2010; Jaakola and Alexander, 2014). Kumar et al. (2010) emphasised that consumer engagement is a series of transactional and non-transactional behaviours by customers. Consumer engagement is viewed as engagement beyond purchase behaviour driven by motivation, including word of mouth and product recommendation (Van Doorn et al., 2010).

Other scholars believe that customer engagement is a kind of psychological state related to customers and brands under certain circumstances (Bordie et al., 2011; Bowden, 2009; Hollebeek et al., 2014; Vivek et al., 2014; Mollen and Wilson, 2010; Muntinga et al., 2011). Scholars classified three levels of engagement from the lowest to the highest involvement of consumer engagement in social media, including content consumption (liking), content contribution (commenting) and content co-creation (sharing) (Muntinga et al., 2011). Liking, commenting and sharing also been widely employed as a measure of consumer engagement (Kumar et al., 2016).

Kaur et al., (2020) identified the mediating role of consumer brand engagement has tremendous significance for the evolvement of enterprise-based engagement practices. Specifically, to create a loyal customer base, enterprises might concentrate on creating engaging social media experiences (Harmeling et al., 2017). The elevated consumer brand engagement accumulates via their satisfaction toward users' brand community identification motive. Correspondingly, companies should attract community users through utilitarian (for example, informative), hedonic (for example, entertainment), and social (for example, social bonding) benefits, and afterward foster CBE/brand loyalty. When consumers' intrinsic needs are being met in virtual brand communities, they tend to express citizenship behaviours such as helping other clients and spreading out the positive brand-related by word of mouth (Van Doorn et al., 2010). By raising consumer brand engagement, companies will achieve a loyal customer foundation base.

Customers with more investments into their brand relationship, are observed to be more loyal, therefore highlighting consumer brand engagement's strategic importance for companies.

Bowden (2009) stated that consumer engagement with virtual communities could lead to positive results that benefit the business, including customer satisfaction, brand commitment, customer value. Brodie et al. (2011) indicated a definition of consumer engagement with virtual communities as an interactive process between individuals, enterprises and other members of the community in the virtual brand community. Their findings indicated that unidimensional of behaviour is not enough to reflect the connotation of consumer engagement and outlined a multi-dimensional conceptual framework of engagement in terms of the cognitive, emotional and behavioural. The cognitive dimension is described as a consumer's level of brand-related thought processing, concentration and interest in a particular consumer/brand interaction.

The emotional dimension can also be viewed as customer affection, which can be seen as the consumer's degree of positive feelings of inspiration or pride related to a particular consumer/brand interaction. The behavioural dimension refers to a consumer's level of energy, effort and time spent on a brand in a particular consumer/brand interaction (Hollebeek et al., 2014, p154). This conceptual framework was further validated by Hollebeek's (2014) empirical work. O' Brien and Toms (2010) described consumer engagement as a quality of user experience that comprises focused attention, perceived usability, endurability, novelty, aesthetics and felt involvement, the hedonic and utilitarian motivations affect the intention of consumer engagement. Mollen and Wilson (2010) defined consumer engagement as the cognitive and affective commitment to a strong relationship with the brand as personified by the website or other computer-mediated entities designed to communicate brand value. Vivek et al. (2012) viewed engagement as composed of three different dimensions: conscious attention, enthused participation, and social connection. In a subsequent study, the authors added 'social connection' to Bordie et al. (2011) 's three dimensions to measure consumer engagement (Vivek et al., 2014).

Various scholars have employed the three-dimensional scale developed by Hollebeek et al. (2014) to study the concept of consumer engagement with online communities. Dessart et al. (2015) compared consumer engagement across social media and brand categories with online luxury brand communities through Facebook and Twitter, and their study not only corroborated the three dimensions (affective engagement, cognitive engagement and behavioural engagement) but also explicated seven sub-dimensions of consumer engagement: enthusiasm, enjoyment, attention, absorption, sharing, learning and endorsing. Zhang et al. (2017) developed a conceptual framework of community engagement based on the perspective of the service ecosystem theory, and the findings indicated that the process of continuing value co-creation is subconsciously driven through consumer engagement behaviours. Heinonen (2018) studied the dimensions of consumer engagement with online community from both positive and negative stances. These emerged as behavioural, emotional, and cognitive dimensions of consumer engagement, comprising ten factors such as peer support, personal relevance, ease-of-use, the intensity of discussions, self-identification, routines, brand familiarity, member endorsements, entertainment and inspiration positively affect engagement intention. Five negative factors affect engagement with the online community. These were found to be: irritation, community intimacy, time, community changes and subjectively. The result contributed to a holistic understanding of consumer engagement, in which the negative factors are essential to indicate the cause of disengagement.

2.3. Online Health Community

An online health community, or OHC, is described as a particular type of online social network for members to interact with health or wellness-related virtual communities in order to seek information, help, emotional support and communication opportunities (Josefesson, 2005; Krcmar et al., 2002; Zhao et al., 2013; Van et al., 2016). OHCs usually contain rich medical and experiential knowledge which could benefit a patient's access to useful information such as treatment methods, and also encourage interaction with other members who are willing to share their insights and experiences (Thackeray et al., 2008; Zhao et al., 2013). OHCs are not only providing helpful information for patients who have the difficulty with treating an illness, they also create a connection between all isolated people bringing them together: By sharing their experiences with illness, members develop a deep understanding and trust between each other (Leimeister et al., 2005; Josefsson, 2005). As a subset of the online community, OHCs share other features with more general online communities, in that they are often composed of geographically dispersed groups which may or may not recognise each other but share common interests (Brown and Duguid, 2001; Wasko and Faraj, 2005). Members who interact with online health communities are not limited by geographical distance, time, or social status (Krcmar et al., 2002). OHCs are vital for diseases that are accompanied by stigmas such as mental health issues and sexually transmitted diseases because patients diagnosed with these diseases often find it challenging to maintain an offline connection with their healthcare providers. Online health communities provide not only informational resources which patients can find difficult to get from doctors, but OHCs also provide an emotional bond between members (Yang and Tan, 2010).

The development of Web 2.0 and social media has changed the way individuals manage healthcare and diseases (Nambisan, 2011). As early as 2011, an interactive survey showed that nearly 74% of adults searched for health-related information on the internet, and that 90% of users believed that the information was reliable. 57% of users used the information they found on the internet to ask medical professionals for their treatment plans (Taylor, 2012). Patients turn to the internet for information and solutions regarding their health conditions, concerns, treatment options, and for interaction with other members of their online communities who suffer similar conditions (Yang et al., 2011). OHCs provide a social platform that not only promotes the sharing of information and experience but also provides emotional communication among patients by closely connecting different individuals through the joint health community (Ejik et al., 2013). Apart from benefiting patients, the information and resources shared in the online health communities is also valuable for medical professionals; by reading the threads and comments posted on OHCs, medical professionals can understand the feelings of patients such as their wellbeing after treatment, the side-effects of various medicines and also the attitude towards the medical services (Josefsson, 2005). With this information adopted from the online health community, medical professionals are bound to come up with better treatment methods, improve service quality and interact with patients more meaningfully. Medical professionals should use the knowledge and resources shared on the communities well in order to innovate or improve existing medical services (Nambisan and Nambisan, 2009).

Although OHCs are becoming more widely known and used by patients and other users, marketing research regarding these online communities is still at a relatively preliminary stage. More research is needed to better understand the motivations and outcomes related to consumer engagement (with OHCs) (Zhao et al., 2018). Studies have found many benefits to engaging with OHCs and these include increased support, perceived empathy, optimism, reduced stress, reduced depression, and reduced psychological trauma (Hardyman et al., 2014). OHCs provide many types of social support, both informational and emotional (Hibbard, 2017).

Recent research about online health communities has focused on emphasising building relationships and strengthening mental abilities (Goh et al., 2016; Petrič et al., 2017). Zhao et al. (2018), based on a successful information system model and online health community features, developed a framework to test the factors which drive patients to maintain ongoing relationships with OHCs in which communication occurs between doctors and patients. The result showed that individual literacy, social support, information and service quality are the key factors driving what consumers perceive to be useful and patient satisfaction, which in turn effects of the consumer's continued usage of the online health community (Zhao et al., 2018). Their empirical research confirmed all that of the motivations, except individual literacy, have a positive influence on the usefulness of the OHC as perceived by the consumer, and on patient satisfaction. Their research also considered the direct factors that impact consumer engagement with online health communities. There was no further research regarding the outcomes of engaging with online health communities. Meanwhile, because their research was conducted in China, which does not have many online health communities, the authors suggested further research should consider more popular online health communities (Zhao et al., 2018).

Jonston et al. (2013) studied which benefits the online health communities could provide to consumers after their engagement. Their research found that engagement with online health communities leads to direct benefits for consumers and these can be categorised as information utility and social support. Information utility also has a positive impact on patient's empowerment after participating in the online health community (Jonston et al., 2013). Their research indicated the importance of patient empowerment (after participating in online health communities) but did not directly consider the motivations affecting a consumer's engagement with online health communities (Oerle et al., 2016). By adopting a mixed methodology with both quantitative and quantitative research, based on the coordinate theory (Malone and Crowston, 1990), the analysis revealed differences in the level of cognitive and emotional value creation, types of community activities, patients involved, professionals and other stakeholders. Their study categorised users into four different community configurations but it did not investigate the factors that affected users' engagement with the online health community. Patient value co-creation appeared as another significant factor in healthcare service outcomes. Value co-creation is influenced by social identity, which in turn is positively influenced by interactions and cognitive resources (Zhao et al., 2015). Based on social identity theory the research of Tajfel and Turner (1986) discovered knowledge contributions and membership continuance intentions in online health communities influenced by integrity trust, benevolence trust, shared vision and shared language. Their research only focused on one type of patient value co-creation activities, namely knowledge contributions, rather than investigating the motivations behind why consumers engage with online health communities.

2.3.1. Consumer engagement in online health communities

In the context of healthcare communities, consumer engagement benefits the promoting of wellness and preventative healthcare, and patients engaged with OHCs are more willing to actively participate in their healthcare, and with social healthcare activities and are more willing to interact with health professionals (Hur et al., 2019). Online health communities are a significant means by which to change the way people experience health and healthcare through the internet; engagement is found to have a positive influence on coping with health conditions (Malik and Coulson., 2010), reducing health stigmatisation (Powell et al., 2003) and addressing better health outcomes (Laurance et al., 2014).

Previous research found that consumers who engaged with OHCs were willing to learn more about health-related treatments (Dutta-Bergman, 2003) and tended to employ social media to solve health concerns (Shabi, 2018) which further improved their health awareness (Graffigna et al., 2017). Costello et al. (2019) studied the relationship between consumer engagement with OHCs and patient activeness and health outcomes. Their results evidenced that online health communities might be beneficial to increasing patients' motivations for users with high engagement.

Specifically, according to the previous studies, only a few types of research have investigated the content of consumer online health community engagement. There is an urgent need to study the motivations of consumer engagement with online health communities, in order to find out which factors, motivate their intention of engaging. Moreover, understanding the outcomes of engagement with the online health community can help community marketers to appropriately adjust the operation mode of community. By knowing the benefits of consumer engagement with online health communities, they can provide better virtual health-related services.

According to the latest data, there were 468,342 diagnoses of sexually transmitted infections (STIs) made in England, a 5% increase since 2018 (NHS, 2019). The infection rate of sexually transmitted diseases is increasing, and this is closely related to our lives, because the category of this illness always associated with sexual behaviours, sexually transmitted disease always involves stigma and discrimination issues (Hood et al., 2011). Based on the research conducted by Elford et al., (2018), more than half of the respondents in total 1,385 participates were discriminated against because of HIV infection, they also admitted that the mental instability they suffered affected their life. Their mental health is closely related to the stigmatisation of HIV infection. In other words, the respondents who think they are in poor health are troubled by negative emotions, and this also led to serious self-discrimination. As a particular category of diseases, the sexually transmitted disease not only affects patients' physical condition but is also associated with a series of special negative psychological effects and other associated issues due to (amongst others) social, economic, cultural factors (Abell & Cesnales, 2018). People become more suspicious, worried and anxious about their sexual health especially after being involved an unsafe sexual behaviour. Because of the possibility of getting infected with venereal disease is high, people's negative emotions keep increasing, they may even have suicidal intentions until they are confirmed well following multiple medical examinations (Nechita et al., 2018). However, it is difficult for some people to expose their sexual histories and behaviours to health professionals, especially when the physical symptoms are around their genitals/genital area. Female patients are more likely to feel a sense of shame when talking about sexual experiences compared with male patients (Rashid and Michaud, 2000).

Most sexually transmitted diseases have no specific symptoms, or they have symptoms similar to those of common diseases. For example, the HIV infection can cause some people to develop flu-like symptoms. So, there is no way to correctly diagnose a person as having an STD, just because they have some particular symptoms. Abell & Cesnales (2018) pointed out that some people suspected that they were suffering from venereal diseases due to occasional extramarital sexual behaviour. Because of the uncertainty of the disease, people are not sure whether they have signs of sexually transmitted diseases, so they repeated check their external genitals. Some mistook previously unnoticed signs for venereal diseases and as such desired to find out how to treat or control the venereal disease as soon as possible, or they may simply want to find out if the symptoms belong to sexual disease. According to the modern medical model, diseases not only occur in organs and cells but also cause changes in people's psychological state. In turn, psychological and social factors also have an important impact on the occurrence, development, and outcome of the disease (Babić et al., 2017). The OSHC brings together users from all over the world with different backgrounds and experiences related to sexual health.

Sexual health-related problems and doubts can be resolved quickly through close interaction within the community.

Moreover, Breslow (2018) stated that excessive fear, pessimism and despair, hypochondriac psychology and social abandonment psychology could make patients feel heavy psychological pressure, which can even lead to psychological obstacles. Due to the psychological influence, and issues of stigma, patients turn to the online sexual health forum to seek help. The development of internet technology has facilitated the intention to seek health information online. Nearly 70% of the British internet users searched for health information online in 2014, while 33% of them contributed to the online health community (Brady et al., 2016). Online health community users post their health-related concerns, share medical or treatment information with the other users, get support and adopt information (Kendal et al., 2017). According to Terrence Higgins Trust – the UK's leading HIV & sexual health charity with latest update, as of 2020 there was 10% decease in consultations at sexual health services compared to 2019, but number of online consultations doubled to 1,062,157 cases. Yet, only a few types of research have investigated the content of consumer online health community engagement. There is an urgent need to study the motivations of consumer engagement with online health communities, in order to find out which factors motivate their intention to engage. Moreover, understanding the outcomes of this engagement with online health community can help community marketers to appropriately adjust the operation mode of the community. By better knowing the benefits of consumer engagement with online health communities, the community marketers can provide better virtual health-related services.

This study believes that by investigating consumers' motivations and the outcomes of engaging with the OSHC we can not only expand the existing studies but could also develop an incipient guideline for online health community practitioners to improve their communities in order to provide better serveries for the consumers.

2.4. Sexual Health Diseases (STDs) / HIV and men who have sex with men (MSM)

Sexually Transmitted Infections (STIs), also referred to as sexually transmitted diseases (STDs), are infections that are commonly spread by sexual activity, especially vaginal intercourse, anal sex and oral sex (Workowski and Bolan, 2015). A report from the With repeated trauma, friction and stretching, and the sphincter loses its tone and its ability to maintain a tight seal Committee to the UK government on sexually transmitted diseases from 2017 to 2019 (NHS, 2019) shows that the overall rate of sexually transmitted infections fell by 7% from 2013 to 2017, and there was a particular decline in HIV, HPV and chlamydia diagnoses (NHS, 2019). However, the infection rates for other sexually transmitted disease are still high. STDs are closely linked to our daily life: there are eight types of sexual health diseases, namely Chlamydia, Gonorrhoea, Herpes, Human Papillomavirus (HPV), Hepatitis A/B/C, Syphilis and Human Immunodeficiency Virus (HIV) which report the highest rates of infection.

Although sexual health diseases can involve any individuals who have sex, researchers have found that men who have sex with men (MSM) show a greater risk of contracting STDs and HIV (De Voux et al., 2014; Hood et al., 2011; Buchacz et al., 2004; Glick et al., 2012; Katz et al., 2016). The most common route of infection is through unprotected sexual activities, primarily through anal sex (UNAIDS, 2020). Bancroft et al. (2003) provided a comprehensive analysis of the health risks of gay sex and analysed the sexual health diseases arising from MSM behaviours. Of which, the danger of contracting severe health sexual diseases could be summarised as male homosexual behaviour involving not just only active or passive interactions, but penile-anal, mouth-penile and hand-anal interactions. Furthermore, mouth-anal contact is a prevalent behaviour in MSM, which indicates the reason why there exists a relatively high possibility of diseases caused by bowel pathogens and rectal trauma (Wilcox, 1981). The oral-anal/genital tract also demonstrates a high rate of parasitic and other intestinal infections noted among MSM.

Although 'fellatio' and 'anilingus' are considered as relatively low risk in terms of contracting HIV, the risk of contracting other STDs cannot be ignored (CDC, 2019). Anal sex was described as the 'sine qua non' for gay sex behaviour (Rotello, 1992; 1994). The rectum is not like the vagina, which has natural lubricants for penetration by a penis (Diéguez, 2000). With repeated trauma, friction and stretching, and the sphincter loses its tone and its ability to maintain a tight seal. Any organisms introduced into the rectum have a much easier time establishing a foothold for infection than in a vagina and, compared to other body fluids, the amount of HIV in semen is very high (11,000/ml). Therefore, anal-genital intercourse is the most efficient method for HIV to enter the body (UNAIDS, 2020). Kharsany and Karim (2016) indicate that the average HIV transmission rate via anal sex is 20 times higher than with vaginal sex, thus the possibility of contracting HIV during a single act of unprotected anal sex is estimated to be 1.4 per cent (Wilton, 2012).

In addition to the biological and physiological factors, researchers also found that personal behaviour and sex network characteristics also have an effect on sexually transmitted diseases and HIV infection (Glick et al., 2012; Paz-Bailey et al., 2016; Spicknall et al., 2017). Studies have shown that men are more sexually active than women and are more likely to be sexually aroused by the object of their affection (Glick et al., 2012; Heather and Kim, 2008). Therefore, the possibility of contracting STDs/HIV is higher. Furthermore, because men who have sex with men do not have to worry about pregnancy, they are more likely to forget safety precautions for the purposes of pleasure, and unprotected sex increases the risk of infection (Alvy et al., 2011).

The growth of social media and online social networks has facilitated interactive electronic connections and communication and has allowed users to share their personal information with other users in virtual networks, which benefits network building (Saberi et al., 2019). Men who have sex with men are more likely to use social media to seek sexual partners, including those infected with HIV and other sexually transmitted diseases (Rosenfeld et al.,2012). Thus, unprotected anal intercourse, casual and anonymous sex partners, and multiple concurrent partners all increase the risk of STDs and HIV infections among MSM (Liau et al., 2006; Grov et al., 2010).

As well as biological and behavioural factors, social factors affect HIV risk among MSM. Homophobia, the stigma of STDs/HIV and discrimination faced by MSM were found to be significant influencing factors of STDs/HIV infection (Earnshaw & Williams, 2015; Marmot and Bell, 2006). It is more difficult for gay men to access health care services because sexually transmitted diseases and HIV are dangerous and contagious (Scambler, 2009;). HIV stigma can cause many serious outcomes, for example loss of friendship and family ties, expulsion from a school or a company, and worse, the denial or delay of healthcare and related health checks (Golub and Gamarel, 2013; Thapa et al., 2018). People are usually at their most contagious (and therefore more susceptible to infecting others) during acute infections, but stigmatisation and discrimination can negatively affect attitudes and behaviour, so any denial of healthcare or delay in accessing healthcare or health screening can further increase HIV risk amongst MSM (Powers et al., 2016).

2.5. Online sexual health community and men who have sex with men (MSM)

The internet allows us an increased ability to share information without traditional limitations, and as such can be considered a platform for health communication and education (Noar et al., 2009). The World Health Organization pointed out the importance of online health communities by stating that it is the most effective method of educating people on sexual health knowledge (WHO, 2019).

The growth of online health forums and communities have stimulated research on this topic. The convenience of the internet provides a means of communication for adults looking for sexual partners, including men who have sex with men (MSM) (Horvath et al., 2008; Al-Tayyib et al., 2009). Casual sex can increase one's chances of contracting sexually transmitted diseases or developing concerns due to the unknown sexual status of others (Swendeman and Rotheram-Borus, 2010). Fortunately, social media platforms are increasingly being used for health promotion interventions because their accessibility and interactivity can increase community participation and health promotion (Bennett, 2009). Pedrana et al. (2013) evaluated the effectiveness, interaction and involvement across social networking sites that promote sexual health for MSM. Their study found that although an interactive health exchange can increase the willingness of users to engage with health-related topics via an online health community, these online communities are primarily associated with sensitive issues such as sexual health. Veale et al. (2015) indicated that interacting with other users via social media such as Facebook and Twitter increased the potential for the promotion of sexual health. Social media interventions were found to have benefits regarding a user's engagement with OSHCs because a large amount of information within these communities promotes sexual health (V. Welch et al, 2016), such as increasing the use of condoms and increasing people's willingness to self-test for HIV; users can discuss sexual health-related topics more easily through social media.

As a vast repository of health information, the internet is being used by an increasing number of healthcare consumers, teenagers and young adults mostly search for concerns and questions associated with sexual health (Buhi et al., 2009). The internet has also provided a better place for LGBTQ people to develop physically and mentally because the internet goes some way towards meeting their needs regarding sexual health information; LGBTQ users feel more secure and safe when they interact with OSHCs because these communities allow users to post anonymously and the internet protects their identity and their privacy (Tikkanen & Ross, 2000). Magee et al. (2011) interviewed 32 LGBTQ participants regarding their reasons for seeking information from OSHCs. The motivations can be summarised as follows: Fears of contracting a sexually transmitted diseases as a result of unsafe sexual intercourse, or the worry about ongoing symptoms related to sexual diseases. Their study also indicated that the internet is the primary source of sexual health information for LGBTQ youth and indicated that future research needs to look at the impact of online sexual health-related resources on changes in health behaviour. In addition to satisfying users' needs for information related to sexual health, online sexual health communities have also been found to provide emotional support for users. Mustanski et al. (2011) studied the role of the internet in the sexual health development of young MSM and found that it satisfied the user's need for sexual health information, whilst the OSHCs were also found to provide emotional and organisational support towards specific groups, such as LGBTQ users. Previous studies showed that the usage rate of youths within a sexual minority, such as the LGBTQ group, for OSHCs was higher than that of the non-LGBTQ group, and that this was due to privacy, discrimination or simple curiosity (Mitchell et al., 2014). Online sexual health communities have also been found to promote the testing for STDs like syphilis and HIV through inter-user encouragement (Zhang et al., 2017). Users' sexual behaviours are also found to have changed as a result of engagement with online sexual health communities, users receive information not only about sexually transmitted diseases but also about safer sex behaviours, such as condom use and regular checks, which contributes to a better sexual health status (Li et al., 2017). The convenience of OSHCs is essential when offline sexual health care cannot be met. The COVID-19 outbreak in early 2020 ushered in a massive disruption to healthcare systems around the world, with hospitals understaffed, patients unable to see healthcare professionals on time, and the overall availability of offline sexual health services significantly reduced (Nagendra et al., 2020). OSHCs address patients' concerns about sexual health by enabling them to get help and resolve problems when they cannot go to the hospital, thus further demonstrating their importance.

However, most of the current study around users' engagement with OSHCs focuses on how these communities can intervene in users' attitudes towards the prevention and detection of sexually transmitted diseases. Little research has been conducted around consumers' motivations when interacting with online sexual health communities, and outcomes of this engagement.

2.6. Theories of Consumer Engagement

2.6.1. Relationship Marketing Theory

Philip Kotler defined marketing management as 'the process of planning and executing the conception, pricing and promotion and distribution of goods, services and ideas to create exchanges with target groups that satisfy the customer and organisational objectives' (Kotler, 1997, p. 15), where the exchange is the core of marketing management, and the nature of marketing is demand management (Kolter, 1995).

Christopher, Payne and Ballantyne (1995) first mentioned interactive marketing, or the interactive relationship, which is another marketing paradigm that differs from traditional marketing. The first person to introduce the concept ‘relationship marketing' was Berry (1983). His research was based on the effectiveness of the relationship between the industrial product market and the service market. He defined relationship marketing as 'attracting, maintaining and – in multi-service organisations – enhancing customer relationships' (Berry, 1983, p.25). Another view of relationship marketing was researched by Payne (1995), which sees relationship marketing as a combination of marketing, customer service and quality management. Morgan and Hunt (1994, p. 22) pointed out that relationship marketing is all about 'establishing, developing and maintaining successful relational exchanges.'

Since the 1980s, relationship marketing has made a meaningful improvement from both theoretical and practical perspectives. Grönroos (1982) established a model of customer relationship life cycle, and he emphasised that the closer the relationship between companies and customers, the more important of maintaining an engaged relationship with the customers. McKenna (1991) concluded that the core of relationship marketing is to integrate customers, suppliers and other partners into the development and marketing activities of the enterprise. His work favourably mentioned the importance of developing a close interaction between all business partners. Payne (1994) compared traditional marketing and relationship marketing and outlined the importance of the customer's position in a business relationship.

Grönroos (1994) in research based on relationship marketing theory, provided a new paradigm between customers and sellers, namely that customer needs were met by providing superior value relative to competitors. This paradigm emphasised that marketing is based on the exchange within networks of relationships (Gummesson, 2002). Morgan and Hunt (1994) found out that the fundamental norms determine whether the exchange between sellers and customers happened are trust and commitment. These two norms also contribute to customer engagement in a buyer-seller relationship (Sashi, 2012). Relationship marketing theory has been viewed as a broader conceptual lens by which to examine customer engagement (Vargo, 2009; Ashley et al., 2015; Vivek et al., 2012).

Relationship marketing theory is also applied in modern studies. Fazal-e-Hasan (2020) examined gratitude as a mechanism to predict outcomes based on relationship marketing. For instance, overall satisfaction, trust and commitment. The findings highlighted that gratitude is a mediating mechanism that can indicate the relationship between young consumers' perceptions of relationship marketing investments and overall satisfaction, trust and commitment. Perceived benevolence improves the relationship between perceived relationship marketing investments and clients' gratitude. Whilst Cristiana (2021) demonstrated the applicability of a conceptual model built for monitoring and evaluating relationship marketing initiatives for services enterprises.

The significance of studying relationship marketing theory is not to be underestimated. The application of this theory is of great significance for the reform of enterprise management philosophy (Morgan and Hunt, 1994; Christopher et al., 1991). Moreover, relationship marketing theory has revolutionised the marketing strategy of enterprises (Grönroos, 1996; Gummesson, 1997). Relationship marketing also can cause a change in enterprise organisation structure (Kolter, 1992). With the development of information technology and network economy, relationship marketing theory and its application need further study.

2.6.2. Social Exchange Theory

As a sociological and psychological theory, social exchange theory (SET) believes that human behaviour is an exchange process that can be measured by costs and rewards (Emerson & Cook, 1976). The first scholar to establish this theory was Homans (1961), who viewed social exchange theory as the activity of exchanging tangible or intangible resources as well as the costs and rewards of this activities. Based on Homans' fundamental contribution to social exchange theory, more and more scholars base their research on social exchange theory (Blau, 1964; Emerson, 1976). Social exchange theory emphasised that the reason for exchanging resources stems from the desire to connect with others, which can well explain the rationale of individuals' behaviour during the process of resource exchange. However, there is a gap in the research between social exchange theory and social exchange theory studied within the context of the online sexual health community. Thus, this theory is adopted as one of the fundamental theories by which to investigate users' motivations for engagement with an online sexual health community.

Homans (1961) emphasised that the basic concept of social exchange theory is equitable distribution, which is also the basic social exchange principle. Specifically, social behaviour is viewed as an exchange of both intangible and tangible goods. Within the context of social exchange theory, the individuals who performed extensively in order to make gains, and individuals who received much input were always under a pressure to perform extensively towards others, therefore, the exchange occurred (Homans, 1961). Social exchange theory has been adopted and defined by other scholars. The most prominent is Blau (1964), who studied social exchange from the perspective of interaction and interpersonal relationships and argued that interpersonal exchange starts from the tendency to communicate with others. His research about social exchange is based on whether others react reciprocally and can be further explained thus: if a reward occurs, the exchange occurs; if not, the exchange ceases (Cook and Rice, 2006). Blau emphasised that not all exchanges are equal; thus, the likelihood and magnitude of the reward determine the likelihood of exchange behaviour (Emerson, 1976).

According to Homans (1961), and Blau (1964) Emerson (1976) viewed exchange as a framework rather than a theory, which is conducive to the integration of other theories within this framework. Emerson's social exchange framework is based on the interaction between individuals and parties, where the relationships vary depending on the type and quantity of resources exchanged. Social exchange theory has been applied as the core theory in different academic disciplines, such as in anthropology (Befu, 1977), interracial marriage (Kalmijn, 1993; Lewis, 2012; Fryer, 2007), truism research (Ward and Berno, 2011) and in the research of citizenship behaviour (Elstad et al., 2011; Tinti et al., 2017). As a psychological theory, early social exchange theory was researched in the context of personal relationships. Berger (1993) applied social exchange theory to research the friendship between roommates measured by self-disclosure. The result indicated that the factors which determine the tendency of liking and satisfaction in a relationship is whether the rewards are equal. A piece of research based on social exchange theory stated that one of the reasons for leisure activities is making friends, and this is a reciprocal activity, because individuals are willing to help others, and expect the help will be eventually returned (Auld et al., 1997).

As the market continues to develop, social exchange theory is viewed as the theoretical basis to explain different situations among business practices. The three main factors that maintain commitment in a relationship are satisfaction, comparison with alternatives and investment size (Rusbult et al., 2001). A high-level of satisfaction means there is consequently less comparison with alternative, which increases commitment in this relationship. Rusbult et al. (2001) argued that the crucial factor in maintaining a relationship's commitment is the investment size. The investment refers to the personal investment in a relationship with tangible resources, such as money or property, and intangible resources, such as emotional or spiritual support (Redmond, 2015). When a relationship ends, both tangible and intangible investments are likely to be lost. Therefore, the individual is more willing to stay in the relationship to reduce investment loss (Rusbult et al., 2001).

Social exchange theory is applied as the theoretical support in engagement research, which explains that obligations arise through a series of interactions between interdependent parties. Saks (2006) researched employee's engagement with an organisation and found out that when individuals receive both economic and emotional resources, they tend to respond and repay the organisation through their level of engagement; the more engaged with the organisation, the greater the individual’s input of their cognitive, emotional and physical resources to oblige their job duties (Saks, 2006).

Social exchange theory has been increasingly applied to online environments. It was found to explain the meaning behind members' information-sharing behaviours in blogs because members who already have social connections offline are more likely to maintain close online relationships and exhibit more online information-sharing behaviours (Hall et al., 2010). Based on the social exchange theory, Jin et al. (2010) studied the factors influencing user commitment in online communities in South Korea. The results confirmed that the social benefits and functional benefits obtained through active engagement with online communities increase members’ commitment. Cross-cultural research aimed at finding out the working professional's self-disclosure differences in French and British online community users, found that self-disclosure is influenced by positive social exchange outcomes within an online community, and reciprocity and trust of the community positively influences self-disclosure while there is a perceived risk of decreased self-disclosure (Posey et al., 2010). Social exchange theory has also been adopted to describe individuals' behaviour in online environments such as the factors affecting online group buying intention and satisfaction (Shiau and Luo, 2012).

More recently, Yan et al. (2016) provided a benefit-cost theoretical framework based on social exchange theory to determine the benefits and costs of health-related knowledge sharing in an online health community. Their study divided health knowledge within the online health community into ‘general knowledge’ and ‘specific knowledge’. The results show that the type of health knowledge affects members' behaviour when sharing information in the online health community. From the perspective of social exchange theory, the cost of acquiring specific knowledge is higher because of the more complex processes involved, thus reducing the intention of users to share such a special type of information. Based on the theory of social exchange, Harrgin et al. (2017) studied the nature of engagement between customers and tourism social media brands and found that through repeated interaction between customers and the online community, customers' emotional, psychological or physiological investment can be enhanced. This research also found that maintaining a balance between investment costs and benefits keeps the customer and the community aligned. The more benefits or rewards that consumers obtained from the online community's interaction, the more likelihood there is for consumer engagement with this community (Carlson et al., 2018). Phan et al. (2020) studied the relationship between social commerce and consumer engagement within the online community. The results found that social commerce platforms, such as personalisation, socialisation and information availability, can increase engagement between consumers and a brand’s online community. Yavuz et al. (2020) researched this theory to demonstrate how social exchange takes place depending on the leadership styles, or the impacts of new leadership styles depending on the social exchange theory. This research highlighted motivating factors of employees vary following their leadership behaviours. And these factors showed that social and psychological reciprocity gain significance beyond the economic reciprocity. In addition, contemporary leadership styles reinforced by such theory appeared to have greater impacts on organisational behaviours.

In terms of online health consultancy, Ren et al. (2021) applied Social Exchange Theory Perspective to identify the effectiveness of interactive tools in online health care communities. The study helped doctors spend their limited energy and time on online devices/tools that facilitate improving internet-based consultation incomes. Patients who receive such internet-based health care services can select health care information based on the doctor's internet-based efforts to understand the professionalism and personality of specific doctors, and afterward choosing the one they prefer to discuss with.

2.6.3 Service-Dominant Logic (S-DL)

Peter Drucker, sometimes called the father of modern management, once mentioned that the greatest danger in times of turbulence is not the turbulence, it is to act with yesterday's logic (Drucker, 1980). The dominant logic of marketing has gone through a process from goods-dominant to service-dominant. Before Vargo & Lusch (2004) put forward the concept of service-led logic, few scholars used the term 'goods' to illustrate this logic, rather terms such as 'neoclassical economic tradition' (Hunt, 1999), 'manufacturing logic' (Normann, 2001) or 'old enterprise logic' (Zuboff and Maxmin, 2004) were chosen to describe it. Goods-dominant logic is a product of neoclassical economics. It believes that physical commodities become the basis of all trading activities, and the core of industrial economic activities is products, while services are just a way of increasing the value of products (Hunt, 1999). Under the guidance of the product-led logic, it is the product that brings profits to the enterprise, while the service plays a secondary role in the transaction activities, serving as a supplementary resource to sell more products (Mele, 2013).

With the great change wrought by the social marketing environment, service is gradually coming to be valued by consumers. Vargo and Lusch (2004) identified an integration of goods with services as the foundation of the service-dominant logic. This logic emphasises that the traditional exchange of tangible goods has shifted toward the exchange of intangibles, such as skills, knowledge and processes. The view of marketing has moved from tangible output to intangibility output, from a discrete transaction to an exchange process, and from a goods-dominant view to a service-dominant view (Hunt, 1999).

There are a number of definitions of ‘services. Solomon et al., (1985) mentioned services marketing as the marketing of activities and processes rather than objects; Lovelock (1991) pointed out that services are deeds, processes, and performances. Vargo and Lusch (2004, p. 2) combined the previous studies and defined services as 'the application of specialised competences (knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself'. They elaborated the reoriented philosophy position of service-centred dominant logic, which could be employed to all marketing offers within the processes of service provision, including the procedures with tangible output (goods).

Service-dominant logic defines ‘service’ as the behaviour, process, and performance of an entity, and the use of expertise (knowledge and skills) to achieve other entities or their interests (Vargo and Lusch, 2008). According to this definition, service can be divided into two forms – direct and indirect service, wherein the commodity or money is the realisation of indirect service (Vargo and Akaka, 2009). One purpose of the service is to achieve the interests of the entity. Lusch et al., (2008) posited that service-dominant logic focuses on the value in use rather than the value in exchange. The traditional goods-dominant logic emphasised the importance of enterprises, believing that enterprises are creators of value, and customers are only passive consumers. In contrast, the service-dominant logic emphasises the importance of operational resources, believing that enterprises are only the masters of value, commodities are only the carriers of functional resources, and customers are the determiners of value (Vargo and Akaka, 2009). The value is created by both enterprises and consumers, rather than by producers and then passed to customers (Lusch et al., 2008). Therefore, in order to meet the needs of customers' differentiation and dynamics, enterprises should continuously cooperate with customers and learn from them.

From the perspective of resources, service is a process of applying professional competence. Thus, service-dominant logic pays more attention to operant resources, which refers to skills and knowledge (Vargo and Lusch., 2006). This is different to the traditional goods-dominant logic which focused on the operand resource and stated the dominant position in business is goods or products, wherein the type of resources is static, such as material and natural resources (Lusch et al., 2008). Service-dominant logic emphasises that it is operant resources that affect results, while operand resources are not inputs to the production process; their function is to provide "services" to the results we want. It is human knowledge and skills that constitute the resources we recognise today.

Based on variances such as services, value, and resources regarding the two logics, the difference can be distinguished in terms of the content, subjects, places, and methods of exchange (Guan et al., 2017). Under the perspective of the traditional goods-dominant logic, the contents of exchange are products and services, and enterprises and customers are the subjects of exchange. The exchange happens in the market, combining mixed management methods. In contrast, based on the view of services-dominant logic, the content of exchange is services and experience, except by only considering the enterprises' productivity (Lusch et al., 2008), focusing and achieving customers' exceptions to improve the company's efficiency (Vargo and Lusch, 2008). Depending on the subjects of exchange, service-dominant logic views customers as the co-producer of the services, both enterprises and customers are subject to subject while all of the exchange is actor to actor (Lusch and Vargo, 2011). Service-dominant logic considered the exchange placed within a service ecosystem, all actors co-produce services, provide each other with services, and co-create value (Lusch et al., 2010). Regarding the methods of exchange, service-dominant logic is based on the 4Ps marketing mix (McCarthy, 1960): product, price, place and promotion (Dave et al., 1996), by placing the 4Ps more strategically, there is a move from managing the marketing mix to co-creating the marketing mix (Lusch and Vargo, 2008).

As a new perspective and mindset for understanding economic exchange (Vargo et al., 2007), service-dominant logic includes eleven foundational premises and five core foundational premises, which will later be identified as axioms (Vargo and Lusch, 2016). The very first foundational premise, also the first axiom of service-dominant logic considered service is the fundamental basis of exchange (Vargo and Lusch, 2004), which exchanging service is for obtaining services. Thus, all economies are service economies (Vergo and Lusch, 2004). Because the service is the operation of operant resources, and service is also the fundamental source of strategic benefit (Vargo and Lusch, 2004). Moreover, value is a co-creation process involving multiple actors, always including the beneficiary (Vargo and Lusch, 2004), the value is only created when the beneficiary is integrating and using the resources (products) provided by the service provider along with other resources, such as their knowledge and skills. Therefore, actors cannot deliver value, but they can participate in the creation and offering of value propositions (Vargo and Lusch, 2004), while goods are a distribution mechanism for service provision (Vargo and Lusch, 2004). Because customers do not buy the goods or services for themselves only, but for the knowledge and skills they contain (Gummesson, 1995).

Vargo and Lusch (2006) outlined the ninth foundational premise, which is also the third axiom, noting that all social and economic actors are resource integrators (Vargo and Lusch, 2006), compared with the earliest bartering era, services were exchanged directly with resource integrators. With the refinement of the division of labour and the development of the marketing system, the exchange between services has become an indirect exchange, people rely on their knowledge and skills to obtain money and then use the money to buy services. This indirect exchange masks the fundamental basis of exchange (Vargo and Lusch, 2004). The perceived value of beneficiaries refers to the value obtained by beneficiaries according to their own experience at a specific time, place and situation, which indicates that value always has the unique and phenomenal decision of beneficiaries (Vargo and Lusch, 2008). In the exchange process between beneficiaries and service providers, a service-cantered view is inherently customer oriented and relational (Vargo and Lusch, 2004). The last foundational premise established by Vargo and Lusch (2016), this axiom is focused on the importance of managing value co-creation activities in the service ecosystem and mentions value co-creation coordinated through actor-generated institutions and institutional arrangement.

Botti et al, (2020) revealed via their research results confirm the presence of the main elements of the service ecosystem (actors, institutions, technology, resource integration) in the e-Health sector and demonstrate how their integration favours new resources' creation, new uses of technology and new institutions that produce innovation and sustainable co-created values.

Since the first-time service-dominant logic made a successful debut in academia (Vargo and Lusch, 2004), this logic has been widely discussed and applied in different disciplines. Vargo and Lusch (2017) summarised the different vectors among transdisciplinary service-dominant logic diffusion. For example, in the discipline of supply chain management, affected by service-dominant logic, researchers began to consider the value of networks and systems, and focused on value co-creation (Flint and Mentzer, 2006; Tokman and Beitelspacher, 2011; Yazadnparast, Manuj, and Swartz, 2010). Service-dominant logic is also closely associated with brands and brand creation (Beverland et al., 2007; Merz et al., 2009; Payne et al., 2009;

Halliday, 2016). Brodie et al. (2011), based on service-dominant logic and relationship marketing theory, explored the theoretical foundations of customer engagement. Vivek et al. (2012) researched the nature and scope of customer engagement by extending the concept beyond purchase, which was guided by service-dominant logic.

The framework of service-dominant logic also applies outside marketing fields, such as information systems (Alter, 2010), art philosophy (Boorsma, 2006), tourism management (FizPatrick et al., 2013), public management (Osborne et al., 2013) and innovation studies (Michel et al., 2008). In the context of health disciplines, few researchers have applied service-dominant logic to their research. Joiner and Lusch (2016) based on service-dominant logic, proposed a new paradigm for both consumers and providers to co-create value in healthcare. Hardyman et al. (2015) studied patient engagement with healthcare from a micro-level from the perspective of service-dominant logic. Rehman et al. (2012) employed service-dominant logic in order to examine the importance of oncology patients' participation in the value co-creation process and how perceived quality was affected. Although service-dominant logic was widely examined in different academical driplines, there is insufficient research on customer engagement with the online sexual health community, and it is worth researching how service-dominant logic applies in this field.

2.7. The Motivations behind Consumer Engagement with Online Communities

Motivation is viewed as the kernel of biological, cognitive and social regulation because motivation is related to activation and intention in psychology, which is explained as the force that motivates, sustains, and directs behaviour toward a specific purpose (Deci and Ryan, 2000). Gredler et al. (2004, p. 106) defined motivation as the force that moves us to do or not do something. Consumer motivations have also been widely investigated in the field of marketing in order to better understand and address the questions about consumer behaviour (Palmatier et al., 2006).

2.7.1. Self-determination theory

One of the most well-employed theories in the study of consumer engagement is self-determination theory (SDT) established by Deci and Ryan (1985). As an important theoretical basis for motivation, SDT believes that individuals may develop different motivations due to different reasons or goals. This theory focuses on the internal psychological growth trend and internal psychological needs of individuals and the conditions that promote these positive psychological processes (Deci and Ryan, 2000). SDT assumes that people are active organisms with a bold tendency towards self-integration, self-improvement, and constant learning (Deci and Ryan, 2000). However, the occurrence of these tendencies is not automatic but requires supportive conditions to achieve it. More specifically, in order to achieve healthy development, an individual's basic psychological needs should be met (Ryan and Deci, 2020).

According to SDT (Deci and Ryan, 2002), there are three fundamental psychological needs: 'autonomy', 'competence' and' relatedness'. For people from all cultures, psychological health requires satisfaction of all of these three needs (Deci and Ryan, 2000, p. 229-232). 'Autonomy' involves a sense of initiative and ownership in one's actions. The need for autonomy is defined as an individual's desire to make choices, to express feelings and to initiate their actions (Deci and Ryan, 2002 p. 8). An individual feels free to select and organise their actions when the need for autonomy is fulfilled (Deci and Ryan, 2000, 2002). 'Competence' is described as feeling practical and capable when facing tasks. The needs for competence refer to an expectation that a desirable outcome will be achieved by individuals through an engagement in certain activities, when these activities allow individuals to utilise their skills and develop new competencies (Deci and Ryan, 2002, p. 7). Therefore, the need for competence is satisfied when an individual perceives a sense of feeling skilled enough to achieve a task to the best of their ability (Deci and Ryan, 2000, 2002). Finally, 'relatedness' is the sense of being connected, caring and being cared for by other individuals and groups. The need for relatedness is promoted by transferring respect and caring (Deci and Ryan, 2000). Relatedness is defined as the desire to establish mutually caring bonds and positive alliances with others (Deci and Ryan, 2002, p. 7). The need for relatedness is the feeling of a good relationship with others and having support from others, by which individual will develop a sense of an interpersonal safety when the needs for relatedness are fulfilled (Deci and Ryan, 2000). SDT indicates that the satisfaction of these basic needs is correlated with wellbeing and optimal functioning (Deci and Ryan, 2013). When these psychological needs are satisfied, individuals will develop in a positive and healthy direction; when these psychological needs are blocked, the individual will develop in a negative direction or become dysfunctional (Deci and Ryan, 1985).

Based on the different reasons for taking action, two types of motivations emerge, namely intrinsic motivation and extrinsic motivation (Deci and Ryan, 2000). Intrinsic motivation refers to engaging in a task for the rewards inherent in the task, such as interest and enjoyment. Extrinsic motivation is viewed as engaging in a task for the rewards outside of the task, such as grades or money, or to avoid guilt and punishment (Deci and Ryan, 2000). Two types of motivations involve rewards, spiritual or material, and individuals can display high levels of both. For example, a student works hard either because of his love of learning (intrinsic motivation) or because he wants to apply for a scholarship (extrinsic motivation).

Loroz and Braig (2015), studied the relationship between consumer attachments and human brands. Their research expanded the existing consumer attachment model by adding brand personality appeal as a moderator in the relationship between the three basic psychological needs and the outcomes of attachment. The result indicated competence to be a significant factor for developing a strong brand attachment. Hsieh and Chang (2016) developed a comprehensive framework which proposed the perceived psychological benefits in the brand co-creation process. The three perceived benefits of brand self-connection and brand co-creation task (autonomy, ability and relevance) promote the motivation for consumers to participate in brand co-creation activities. Consumers' perceived autonomy, competence and relatedness were found to support their motivation to learn, thereby facilitating the motivation of user-generated content (UGC) on social media platforms (Wang and Lee, 2017). Thus, satisfying the basic needs of consumers (autonomy, competence, and relevance) can activate more precise intrinsic motivations that can be used in marketing research to capture consumer behaviour in different contexts (Gilal et al., 2019).

Olivia (2020) based on the self-determination theory, proposed a prototype app to promote long-term health changes that the user will be intrinsically motivated to maintain. By that, both the user experience and the interface design further strengthen the theory in a practical direction. This is a design-based project proposed to identify a method in which the app could be designed. This will form a long-term change for the users in multiple health and wellness behaviours, and result in fewer health problems, chronic concerns and a longevity with good-health life.

2.7.2. Self-determination theory and consumer engagement

Self-determination theory (SDT) has also been found to play an essential theoretical role to the study under the concept of online consumer engagement (Dholakia, 2006; Zhang et al., 2011). Przbylski et al. (2013) pointed out that the fear of missing out mediated the relationship between individuals' basic psychological needs, and consumer engagement with social media, the higher the levels of perceived fear of missing out tended towards a more robust engagement intention. Kim and Drumwright (2016) explored the sense of belonging through consumer engagement in brand-related activities on social media. Perceived relatedness was found to have a positive effect on consumer engagement and relationship building within social media. Osei-Frimpong（2019) examined how different types of motivations affect the intention of consumer engagement with Facebook online brand communities, the motivation to engage with online social brand communities was found to be primarily driven by autonomy. Self-determination theory (SDT) emphasised the satisfaction of basic psychological needs is propitious for people to initiate healthy behaviours (Deci and Ryan, 2000). The behaviour of searching for health-related information through the internet enhances individuals' autonomy, competence and relatedness compared with receiving the information via a face-to-face doctor consultation (Lin et al., 2017; Lee and Lin, 2019). The aforementioned study discovered eight motivations regarding why patients search health-related information through online communities. Autonomy and relatedness were found to be more substantial than competence when considering users’ motivation to engage in health information searching. SDT is helpful for exploring the most likely factors which promote motivations which can meet the psychological needs of customers in the three aspects of autonomy, competence and relevance, to improve the degree of internalization of motivation and further promote consumer engagement with online communities.

With the four theories have been highlighted above, the following table will demonstrate the key ideas of these theories and their applications in relevant scholarly works:

No.	Theory name	Descriptions	Major relevant applications	Connections to this research
1	Relationship Marketing Theory	A combination of marketing, customer service and quality management, enhancing customer relationships. The closer the relationship between companies and customers, the more important of maintaining an engaged relationship with the customers.	The application of this theory is of great significance for some relevant fields, such as: • Reform of enterprise management philosophy (Morgan and Hunt, 1994; Christopher et al., 1991). • Revolution of enterprises' marketing strategy (Grönroos, 1996; Gummesson, 1997). • Relationship marketing impacts enterprise organization structure (Kolter, 1992). • How gratitude improves relationship marketing outcomes for young consumers (Syed Fazal-e-Hasan et al, 2020)	This theory potentially has broad applications to further illustrate the relationship between customers (patients) and enterprises (online consultant communities), with the values of customers as co-creators by participating in the process of designing and establishing specific services/communities. With the development of information technology for online communities to emerge and network economy, relationship marketing theory and its application is suitable to further imply in this research.

			• Monitoring and evaluation of relationship marketing initiatives in service companies: proposition of a multicriteria model for selecting indicators and metrics (Cristiana Valente et al, 2021).	
2	Social Exchange Theory (SET)	The activity of exchanging tangible or intangible resources, as well as the costs and rewards of this activities. This theory emphasised that the reason for exchanging resources stems from the desire to connect with others, which can well explain the rationale of individuals' behaviour during the process of resource exchange.	• This theory indicates its implementation in various fields, for instance: • Social exchange theory defined as the activity of exchanging tangible or intangible resources, also the costs and rewards of this activities (Homans,1961). • Human behavior is an exchange process that can be measured by costs and rewards (Emerson & Cook, 1976). • Investigation of Contemporary Leadership Styles within the	There is a gap in the research between social exchange theory itself and its study within the context of the online sexual health community. Thus, this theory is adopted as one of the fundamental theories by which to investigate users' motivations for engagement with an online sexual health community.

			Framework of Social Exchange Theory (Duger Yavuz, 2020) • Effectiveness of Interactive Tools in Online Health Care Communities: Social Exchange Theory Perspective (Dixuan Ren et al, 2021)	
3	Service-Dominant Logic (S-DL)	This theory defines ‘service’ as the behaviour, process, and performance of an entity, and the use of expertise (knowledge and skills) to achieve other entities or their interests. According to this definition, service can be divided into two forms – direct and indirect service, wherein the commodity or money is the realisation of indirect service.	• The framework of this theory applies in various fields, such as: • Information systems (Alter, 2010), • Art philosophy (Boorsma, 2006), • Tourism management (FizPatrick et al., 2013) • Public management (Osborne et al., 2013) • Innovation studies (Michel et al., 2008). • In terms of health disciplines, only few researchers have applied this logic to their research. Joiner and Lusch (2016) proposed a new paradigm for both consumers and	Although service-dominant logic was widely examined in different academical driplines, there is insufficient research on customer engagement with the online sexual health community, and it is worth researching how service-dominant logic applies in this field.

			providers to co-create value in healthcare. Hardyman et al. (2015) studied patient engagement with healthcare from a micro-level from the perspective of this logic. Rehman et al. (2012) employed this logic to examine the importance of oncology patients' participation in the value co-creation process and how perceived quality was affected. A Botti et al (2020) applied the developed framework of S-DL to eHealth, to re-read the eHealth sector as a service ecosystem within the digital healthcare sector.	
4	Self-determination theory	This theory highlighted that individuals may develop various motivations due to different reasons or goals. It also focuses on the internal psychological growth trend and internal psychological needs of	This theory’s application can be varied as following: • Loroz and Braig (2015), studied the relationship between consumer attachments and human brands. Their research expanded the existing	SDT is helpful for exploring the most likely factors which promote motivations that can meet the psychological needs of customers in the three aspects of autonomy, competence and relevance, to

individuals and the conditions that promote these positive psychological processes.	consumer attachment model by adding brand personality appeal as a moderator in the relationship between the three basic psychological needs and the outcomes of attachment. • The sense of belonging through consumer engagement in brand-related activities on social media (Kim and Drumwright, 2016). • Hsieh and Chang (2016) developed a comprehensive framework which proposed the perceived psychological benefits in the brand co-creation process. • The motivation of user-generated content (UGC) on social media platforms studied by Wang and Lee, 2017. • Activate more precise intrinsic motivations that can be used in	improve the degree of internalization of motivation. In this research, SDT has strong linkages to further illustrate and promote consumer engagement with online communities – in specific – Online Sexual Health Communities.

marketing research to capture consumer behavior by satisfying the basic needs of consumers (Gilal et al., 2019).

- Designing a Self-Determination Theory-Based App for a Wellness Behavior Change (Wicker, Olivia, 2020)

Table 2.2. Table of Theoretical Framework

2.7.3. The motivations behind consumer engagement with online communities

The motivations of consumer engagement with online communities have been widely researched in order to understand the reasons motivating users to involve themselves with online communities. The current study will review the motivations which emerged from the existing literature that affect consumer engagement with online communities, from the perspectives of consumer-based motivations, firm-based motivations and demand-based motivations.

2.7.3.1. Consumer-based motivations

Consumer-based motivations are viewed as the factors that influence consumer engagement with online communities that come from the perspective of users. Understanding consumer factors can help companies to target consumer segments that have the potential to engage with online brand communities (Barger et al., 2016). Table 2.3 integrates the motivations of consumer engagement from the previous studies below.

Motivation	Author (s)/ Years	Description
Customer Satisfaction	Kotler, 2000 DeMatos and Rossi, 2008 Chen et al. 2010 Anaza and Zhao, 2013 Gvili and Levy, 2016	*'The degree to which a customer perceives that an individual, firm or organisation has effectively provided a product or service that meets the customer's needs, or whether the customer is aware of using the product or service.'*
Brand Commitment	Kim et al. 2008 Schau et al., 2009 Hsiao et al., 2015	*'The desire of a consumer to maintain a valued relationship with a brand because of a previously satisfactory interaction with it'*
Trust	Cheung and Lee, 2006 Van Doorn et al., 2010 Brodie et al., 2011 Vivek et al., 2012 Azar et al., 2016	*'The willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party.'*
Involvement	Zaichowsky 1985 Mollen and Wilson, 2010 Viek et al., 2012 Loureior et al., 2017	*'The extent that consumers perceive that a particular brand is relevant to their needs and values.'*
Customer Experience	Verhoef et al., 2000 Hollebeek et al. 2014 Khan et al., 2016 Loureior et al., 2017	*'A holistic concept of the consumer's cognitive, affective, emotional, social and physical responses to a product or service'.*

Self-Brand Congruency	Sirgy, 1982 Kressmann et al., 2006 Andonova, 2015 Loureior et al., 2017	*'The congruency among consumers' self-concept and the brand-image.'*
Social Media Attachment	VanMeter et al., 2015 VanMeter et al., 2018 D'Arienzo et al., 2019	*'An interaction style between users and the social media when the former overly rely on the latter to satisfy their social needs for relatedness and popularity with gratification while interacting with others online'.*
Personality	Harris and Lee, 2004 Correa et al., 2013 Islam et al., 2017	*'The characteristic sets of behaviors, cognitions, and emotional patterns that evolve from biological and environmental factors.'*
Culture Dimensions	Hofstede, 1980 Chu and Choi, 2011 Tsai and Men, 2014 Hollebeek et al., 2018	*'The extent to which cultural groups are found empirically to differ from one another in terms of psychological attributes such as values, beliefs, self- construals, personality, and behaviors.'*

Table 2.3. Consumer-based Motivations of Consumer Engagement

Customer Satisfaction

Customer satisfaction is the degree to which a customer perceives that an individual, firm or organisation has effectively provided a product or service that meets the customer's needs, or whether the customer is aware of using the product or service (Kotler, 2000). The level of customer satisfaction will enhance their engagement intention. The possibility of users' comments in the community depends on the performance of the products or services. If the product or service is beyond their expectations, they are willing to share their experience of satisfaction. At the same time, customers may also be unsatisfied with the product or service and leave negative comments hoping to warn other consumers (DeMatos and Rossi, 2008). Chen et al. (2010) looked at a sample of the Taiwanese virtual fashion community and found that customers were more willing to engage with this community if they were satisfied with the product or services. Customer satisfaction was found to strongly influence e-customers' intentions regarding the posting of recommendations to help other users regarding on their positive experiences (Anaza and Zhao, 2013; Gvili and Levy, 2016).

Brand Commitment

Brand commitment refers to the desire of a consumer to maintain a valued relationship with a brand because of a previously satisfactory interaction with it (Hsiao et al., 2015). Kim et al. (2008) pointed out that brand commitment increased the desire of participating in an online community. Customers demonstrating a high level of brand commitment are more willing to engage with the brand community to interact with other users in order to improve their knowledge about this brand information and transfer their knowledge and experience (Schau et al., 2009).

Trust

As one of the most influential factors, trust has been researched as essential motivation affecting consumer engagement with online communities (Van Doorn et al., 2010; Brodie et al., 2011; Vivek et al., 2012; Jaakkola and Alexander, 2014). Studies found a higher level of trust resulted in a greater tendency to provide positive reviews (Gremler et al., 2001; Rananweera and Prabhu, 2003). Trust is defined as 'the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party.'(Cheung and Lee, 2006, p. 480) Trust is crucial for users to download/visit, spend time on and make a purchase via mobile shopping website (Thakur, 2018). Consumers' perceived trust relies on a diverse source of trust such as user-generated content (UGC) or brand/company-generated content, the higher the perceived trust level is, the more secure the user feels, thus generating a more vital willingness to engage with the online community (Azar et al., 2016). Customer satisfaction, brand commitment and trust constitute the construction of relationship quality, which was further found to positively affect consumer engagement behaviours (Romero, 2017).

Involvement

Involvement is regarded as a precursor of brand engagement (Mollen and Wilson, 2010; Hollebeek et al., 2014). More specifically, customer involvement was defined early on as how relevant a person perceived an object to be based on their inherent needs, values, and interests (Zaichowsky 1985, p. 342). Customer involvement refers to the extent that consumers perceive that a particular brand is relevant to their needs and values (De Vries and Carlson, 2014). Customer involvement was found to be a motivating factor behind the consumer's search for brand-related information for managing and moderating the potential risk during the decision-making process (Delgado-Ballester and Munuera-Aleman, 2001). High-level consumer involvement enhances a high willingness to engage with online communities (Viek et al., 2012) because consumers wish to feel connected with other consumers in order to share their shopping experience (Zaichowsky, 1985). Online communities provide an opportunity for consumers to seek out, connect and share with like-minded users and this motivates their engagement with the community (Aksoy et al., 2013). Leckie et al. (2016) studied the drivers of consumer engagement with online brand communities, and their research adopted the three dimensions from Hollebeek's engagement model (2014). Consumer involvement was found to be positively related to cognitive processing, affection and activation dimensions of engagement through an online community (Loureior et al., 2017).

Customer Experience

Customer experience is described as a holistic concept of the consumer's cognitive, affective, emotional, social and physical responses to a product or service (Verhoef et al.,2000). Customer experience occurs anytime when connecting with the company (Gentile et al., 2007), or looking for accommodation or destination from travel agencies (Zatori et al., 2018; Barnes et al., 2014). Hollebeek et al. (2014) indicated the importance of past and ongoing experience between consumers and companies in the process of engagement. The convenience of the internet enables most consumers to stay in touch online for more dynamic and real-time brand experiences (Khan et al., 2016). Loureior et al. (2017) investigated the motivations of online brand community engagement and found that consumer involvement, customer experience and self-brand congruency positively influence consumer engagement with online brand communities, among them, customer experience was found to have the most significant impact.

Self-Brand Congruency

The concept of self-brand congruency came from the self-congruency theory, which is the congruency among consumers' self-concept and the brand-image (Sirgy, 1982). High-level congruency motivates consumers' positive attitudes with a brand and further stimulates brand preference and behavioural intentions, such as loyalty (Kressmann et al., 2006). Self-brand congruency was found to positively influence consumer engagement under the context of online brand communities (Andonova, 2015). When consumers perceived their self-image to be highly congruent with the brand image, consumers will develop a better understanding of the brand image and the positive motivation factors for using the brand, hence they will engage with the brand community actively (Loureior et al., 2017).

Social Media Attachment

As a new medium of communication, social media significantly promotes people's connection with other users and organisations, businesses, communities and brands. The strength of the bond between people and social media is defined as social media attachment (VanMeter et al., 2015). Users with higher social media attachment levels are more likely to develop behavioural engagement through social media, especially behaviours related to consumers such as 'like' and 'comment' on a company's post or advocating a company or brand's social media page (VanMeter et al., 2015). Social media attachment was found to be more influential on producing meaningful behaviours (for example, sharing or commenting on a brand post) than token behaviours (for example, a glance the brand page) for users who engage with online brand communities (VanMeter et al., 2018).

Personality

Different personalities and users' characteristics affect consumers' motivation, preference and expected value, which also influences their motivation to engage (Harris and Lee, 2004). Correa et al. (2013) emphasised that users' personality traits drive consumer engagement towards online brand communities. The Big Five model was adopted to study the relationship between personality and the use of Facebook. The results of this research showed that users with extrovert and narcissistic personalities are more likely to use Facebook. People who are Facebook non-users tended to be conscientious and shy (Ryan and Xenos, 2011). Islam, Rahman and Hollebeek (2017) developed a survey based on the contents of the Big five personality model to investigate the motivation of users’ engagement with Facebook communities. Extroversion emerged as the most vital driver behind consumer engagement with online brand communities, followed by being open to experience, neuroticism and agreeableness, whilst conscientiousness was found to be negatively associated with consumer engagement. This study has guided marketers to develop strategies based on the personality traits of different users in order to improve consumer engagement through online communities and increase their purchase intention regarding specific products (Islam et al., 2017).

Culture Dimensions

Cultural dimensions also have a decisive influence on the motivations of consumer engagement with online communities. Culture has been found to play a critical role in driving consumer engagement with social networking sites (Tsai and Men, 2014). Individualism and collectivism are the two most representative culture dimension concepts studied in consumer engagement research, identified by Hofstede (1980). Individualism/collectivism is a value system that favours the relationship between the individual and the collective in society. People with an individualistic cultural background are more individualistic and independent in their ways of thinking and behaviours, while those with a collectivist culture pay more attention to group harmony and interdependence. People with high levels of individualism are independent of the group-goals and develop a relatively weak and loose relationship with online brand communities (Chu and Choi, 2011). Whereas people from a collectivism culture background believe that group goals and social norms are the priority (Clark and Mills, 1979). Thus, compared with people coming from an individualistic background, collectivist culture-oriented users will tend to develop more substantial and more intimate social relationships when they engage with online brand communities (Tsai and Men, 2014). Hollebeek et al. (2018) employed Indian consumers as research samples to study consumer online brand engagement and indicated that it is worthwhile to research how cultural dimensions affect online consumer engagement, in order to help brands better develop digital marketing strategies.

2.7.3.2. Community-based motivations

Community-based motivations viewed from a community's perspective drive users' motivations to engage with online communities. Information quality was found to influence users' engagement with online brand communities (Dessart et al., 2015). It is the comparison of the user's expectation on the perception of the information and the actual information quality (Liu et al., 2017). The community-based motivations form the previous studies are presented in table 2.4. below

Motivation	Author (s)/ Years	Description
Information Quality	Sillence et al., 2004 Eppler et al., 2006 Popovic et al., 2012 Zheng et al., 2013	*'The degree to which the information received conforms to the user's expectations and meets the requirements of the specific activity they are engaged with.'*
Source Credibility	Hovland, Janis and Kelley, 1953 Metzger et al. 2003 Tsai and Men, 2013	*'The extent to which a communicator is perceived to be a source of valid assertions.'*

Table 2.4. Community-based Motivations of Consumer Engagement

Information Quality

Eppler et al. (2006) described information quality as the degree to which the information received conforms to the user's expectations and meets the requirements of the specific activity they are engaged with. Users measure the quality of information by its accuracy, relevance to the question, interactivity, and richness (Popovic et al., 2012). When users perceive the information provided by an online brand community as high-quality information, consumers gain rich and useful information, thus improving their positive view of the brand, and promoting their willingness to engage with the brand community and establish long-term cooperative relations (Dessart et al., 2015). Low-quality information such as inaccurate, incomplete, uncontacted, or false information will decrease users' engagement intention with this community because this worthless information can cost more effort for consumers to progress and judge, thus increasing the cost of searching and processing information for users (Zheng et al., 2013).

Conversely, online consumer engagement strong if an online community can provide a wealth of information that satisfies the user. Islam and Rahman studied how the unique characteristics of online branded communities affect customer engagement based on the framework of Stimulus, Organism and Response (SOR) (Mehrabian and Russell, 1974). Here information quality was found to be the most influential factor for consumer engagement. Information quality is significant for users' engagement with an online health community because the information is intimately associated with their life and wellbeing. High-quality health information in the context of health forums means highly accurate, comprehensive and complete in terms of descriptions of the related health problems (Sillence et al., 2004). Ahmad, Khan and Rahman (2017) found that information quality has a positive impact on university students' intention for searching health-related information from online health communities. If the information provided by the community is perceived as high-quality, consumers will develop behaviours of engagement, such as adopting the health-related information (Huo et al., 2018).

Source Credibility

In addition to the information quality in an online community, source credibility has also been found to be another significant factor affecting consumer engagement with online communities. Source credibility is widely researched in marketing studies where credibility can be used on measuring the level of believing in a message or information. Previous researchers defined source credibility as 'the extent to which a communicator is perceived to be a source of valid assertions' (Hovland, Janis and Kelley, 1953). Source credibility was found to be an essential element for users to build up trust with the brand communities based on the credibility of information provided by both the branded company and fellow users on brand online communities during the process of engagement (Metzger et al. 2003). Source credibility was found to have great importance on social network sites (SNS), where customers mostly provide the information based on real experience and attitudes. These real experiences are perceived as being more reliable which strengthens the intention of others to engage (Johnson and Kaye, 2004). However, Tsai and Men (2013) also studied consumer engagement with Facebook communities. Source credibility was found to have no significant influence on users' engagement, especially on motivating users' behaviour when seeking information. Perhaps due to the development of social media, users collect information from a wide range of sources, and the Facebook brand community is possibly just one of them and is not in itself enough to determine the engagement of users. Their study pointed out that source credibility should be further researched within related research construct.

2.7.3.3. Demand-based motivations

Demand-based motivations are viewed as a kind of motivation generated by people themselves to achieve a purpose based on their needs, which can be intrinsic motivations coming entirely from one's own desire, such as searching for weight management related information because they want to obtain a healthier lifestyle and avoid severe health conditions. Table 2.5 lists the demand-based motivations from the previous research. On the other hand, a user in the online health community who does his or her best to help other users solve health problems by providing related-information or emotional support through sharing their experience with a specific illness, might be motivated because they can earn commissions or rewards from this community.

otivation	Author (s)/ Years	Description
Social Support	Krause, 1986 Albrecht and Adelman, 1987 Wang et al., 2014 Shao and Ross, 2015	*'A verbal and nonverbal communication between recipients and providers that reduces uncertainty about the situation, the self, the other, or the relationship, and functions to enhance the perception of personal control in one's experience.'*
Entertainment	Verhoef et al., 2000 Hollebeek et al., 2014 Khan et al., 2016 Loureior et al., 2017	*'A holistic concept of the consumer's cognitive, affective, emotional, social and physical responses to a product or service.'*
Money and Rewards	Muntinga et al., 2011 Azar et al., 2016 Loureior et al., 2017 Audrezet et al., 2018	*'Higher rewards stimulated from the extrinsic motivations result in higher online community engagement.'*

Table 2.5. Demand-based Motivations of Consumer Engagement

Social Support

Three primary pillars of social support emerged from the research of the online community. Information support refers to the transmission of information, suggestion or guidance to the community users; emotional support contains the expression of positive feelings such as understanding and encouragement; companionship support strengthens group members' social network and sense of communities, which can be described as chatting and joking with other users (Krause, 1986). The concept of social support in the studies of the online community comes mainly from existing studies which consider social support as a significant influencing factor for consumer engagement with online communities. Wang et al. (2014) studied the influence of social support on customer engagement with online health communities. Companionship support was found to be the most substantial factor influencing on engagement while informational support showed the weakest impact due to users being likely to withdraw from the community after they received the information they needed; companionship support provides a personal touch between users, which maintains engagement. A user’s need for information related to a brand was found to not only motivate them to engage with the online brand community but also explained the motivation for the engagement degree and the frequency of posting on the community (Shao and Ross, 2015).

Entertainment

Moreover, the extrinsic motivational factors that influence consumer engagement with online communities has also been studied by previous scholars ((Shu and Chuang, 2011; Rohm et al., 2013;). Shao and Ross (2015) researched entertainment as a key factor influencing users’ motivations on engagement by seeking out videos and information related to brand content. Delivering entertaining content is a prerequisite for driving consumer engagement with online communities; brands need to consider developing entertainment content and brand experiences to promote sustained consumer participation (Azar et al., 2016).

Money and Rewards

Money and rewards are also found to be important motivations that drive consumer engagement towards online brand communities. Social media influencers always create brand-related user-generated contents for personal remuneration (Audrezet et al., 2018). Rewards are more commonly seen in online game communities. Users interact with others during the process of engagement, to exchange information or virtual activities related to games, in order to get extra rewards or fame (Muntinga et al., 2011). Higher rewards stimulated from the extrinsic motivations result in higher online community engagement (Azar et al., 2016).

This study aims to explore the motivations of consumer engagement with online sexual health communities. Based on the individuals' fundamental psychological needs, consumers' engagement with an online sexual health community may be driven by their antonym that sexual health-related problems have an effect on their wellbeing, which in turn has motivated them to seek help from the online sexual health community. The level of competence motivated users who can provide sexual health-related information and are willing to provide support to other users through engagement with online sexual health communities. Furthermore, the relatedness between users and online sexual communities is conducive to the formation of an excellent, caring atmosphere, thus the consumers are motivated to keep engaging with this online sexual health community.

2.8. The Consequences of Consumer Engagement with Online Communities

In addition to considering the motivations behind consumer engagement with online communities, the consequence of engagement is also research content that should not be ignored in engagement studies. Table 2.6 integrates the outcomes emerged from the existing studies about consumer engagement with the online community. Because of the interactive nature of consumer engagement, some of the motivations of consumer engagement can also be its consequences (Brodies et al., 2011). Previous studies about the consequences of consumer engagement with online communities focused on the consumer-based factors because they inherently effect the ultimate business performance (Kumaret et al., 2010). Four frequently discussed consequences from the consumers' perspective after their engagement with online brand communities are brand loyalty, trust, satisfaction and commitment (Hollebeek, 2011b; Vivek et al., 2012; Brodie et al., 2013).

Outcomes	Author (s)/ Years	Description
Brand Loyalty	Chaudhuri, 1999 Hollebeek, 2010 Hutter et al.,2013 Writz et al., 2013 Vries and Carlson, 2014	*'A customer's preference to buy a single brand name in a product class.'*
Brand Commitment	Ahluwalia et al., 2000 Hollebeek et al., 2014 Raïes et al., 2015 Ozataand and Lujja, 2017	*'A psychological connection between consumers' emotional and psychological dependence on the brand and their willingness to maintain a long-term interactive relationship with the brand'*
Trust	Saks, 2006 Brodies et al., 2013 Rather, 2018	*'The level of confidence in an exchange partner's integrity and reliability and has been revealed due to relational qualities such as honesty, benevolence, consistency and competency'*

Table 2.6. Consumer-based Consequences of Consumer Engagement

2.8.1. Consumer-based Consequences

Brand Loyalty

Brand loyalty is defined as "a customer's preference to buy a single brand name in a product class" (Chaudhuri, 1999, p. 137). Brand loyalty is established by both consumers' attitudes and behaviours – consumer engagement enhances brand loyalty through repeat purchases, retentions and brand experience (Hollebeek, 2010). Consumer engagement was found to positively influence users' offline loyalty behaviours such as purchase intention, positive offline word-of-mouth and the desire to spend more on a particular brand (Hutter et al.,2013; Jahn and Kunz, 2012). Attitudinal brand loyalty strengthens the connection between consumers and the community through consumer online brand community engagement, for example, interaction and electronic word-of-mouth (Chaudhuri and Holbrook, 2001). Brand loyalty was indicated to be one of the outcomes of consumer engagement (Madupu and Cooley, 2010). De Vries and Carlson (2014) investigated the implications of consumer engagement with Facebook brand communities, and brand loyalty was found to come about as a direct result of consumer online brand community engagement. The more consumer engagement there is with online communities, the stronger the brand loyalty (Writz et al., 2013).

Trust

As one of the motivations for consumer engagement with online brand communities, trust was also found to be a crucial outcome of consumer engagement (Brodies et al., 2013). Trust is defined as the level of confidence in an exchange partner's integrity and reliability and has been revealed due to relational qualities such as honesty, benevolence, consistency and competency (Morgan and Hunt, 1994). Trust is seen as the most critical factor in maintaining a good relationship between the brand and its customers (Garbarino and Johnson, 1999). The relationship of trust is based on a process of the mutual benefit received by both engaged parties, with the generation of trust developing over time (Saks, 2006). Consumer engagement is found to be positively associated with customer trust; consumers who are more engaged with an online community are likely to establish a more trusting relationship with the community (Rather, 2018).

Satisfaction

Satisfaction is the consumers' evaluation of whether the product or service provided by an individual or organisation can meet their needs. Satisfaction is formed by a consumer’s experiences with a brand or service, which can be seen as a prerequisite for influencing consumer engagement and can also be viewed as a reward through deep engagement interaction (Chinomona, 2013). Loureiro et al. (2017) studied the consequences of consumer engagement within Facebook communities, and the results showed that consumer engagement has a significant effect on satisfaction. Consumer engagement has positive results in encouraging a favourable attitude, such as stratification towards a brand or service (Hapsari et al., 2017). Clark et al. (2017) investigated the factors that affect satisfaction in the study of social media sites, wherein consumers are more satisfied with social media brands if they join the online brand community.

Brand Commitment

Brand commitment refers to a psychological connection between consumers' emotional and psychological dependence on the brand and their willingness to maintain a long-term interactive relationship with the brand (Ahluwalia et al., 2000). Brand commitment creates an emotional attachment to the brand, causes consumers to fear losing the brand, and a social responsibility to maintain a continuous relationship with the brand (Raïes et al., 2015). This brand commitment was found to be an outcome of consumer engagement. Namely, through the right engagement platform, consumers are more likely to commit to engaging with a brand due to ongoing and constant interaction with the brand (Brodies et al., 2013). The greater the benefits to the consumer obtained through engagement, the more outstanding the brand commitment will be (Bendapudi and Berry, 1997). Vivek et al. (2013) developed a conceptual framework on consumer engagement with organisations; affective commitment was proposed as one of the consequences of engagement. Based on Hollebeek’s (2014) research model, the aforementioned framework tested the relationship between cognitive, emotional and behavioural engagement and individual consequence, through the engagement with Facebook brand pages. The results showed behavioural and cognitive engagement to be of more significant influence on brand commitment than emotional engagement, and this was due consumer engagement with an online community – as a result of their engagement with an online community consumer act more cognitively and their behaviour alters, for example they may frequently visit a community or comment on a topic (Ozataand and Lujja, 2017).

However, there are far fewer studies on consumer online community engagement consequences than there are on motivation. This study aims to uncover the outcomes of consumer engagement with OSHCs in order to better understand the consequences of engagement for online health industries, which will not only help to supplement the existing literature but will also help online community founders to improve the quality of their online communities to better serve their users.

2.9. Research Gaps

Through a detailed and rigorous review of the existing literature around consumer engagement, the research gaps identified from this study will be presented from the perspective of theories around consumer engagement and the current research into the motivations and outcomes of consumer engagement with OSHCs.

Previous studies have widely adopted relationship marketing, social exchange theory, and service-dominant logic about consumer engagement with online communities (Vargo and Lusch, 2009; Bordies et al., 2011; Vivek et al., 2012). Researchers have observed that the services provided by the community are increasingly valuable in addressing the relationship between the community and consumer, especially in the online environment. A stable and friendly relationship between the consumer and the organisation or community providing the service enhances the consumer's tendency to engage with it (Payne, 1994). Moreover, social exchange theory emphasises that individual behaviour is an exchange process influenced by cost and reward (Emerson, 1976). This approach has been adopted by previous studies as an important theory in studying the motivation and outcomes of consumer engagement with online communities. Although these theories are widespread within previous studies of consumer engagement, none of them have been considered in the context of OSHCs. OSHCs offer more informational and emotional-related services than more material-related support (shopping coupons for example).

Therefore, the first research gap is that there are no previous studies which have adopted relationship marketing, social exchange theory, and service-dominant logic theory to study consumer engagement with OSHCs. Thus, this study's first objective aims to fill this research gap by exploring these three theories around consumer engagement with OSHC.

The existing studies have investigated the motivations and outcomes of consumer engagement with online communities, considering issues such as customer satisfaction (Kotler, 2000), trust (Vivek et al., 2012), involvement (Hollebeek et al., 2014), brand loyalty (De Vries and Carlson, 2014) and brand commitment (Raïes et al., 2015). Specifically, factors like information-seeking and social support were found to motivate consumers' intentions to engage with online health communities, and the patient's empowerment was found to be one of the outcomes of this kind of engagement (Zhao et al., 2018). However, previous studies of online sexual health communities are relatively rare, and no comprehensive framework has been established in this context.

Compared with general health, sexual health involves more privacy concerns, and these are often associated with stigmatisation or with having to give a detailed description of a sexual health issue. Online sexual health communities provided a platform for consumers who have sexual health-related concerns to exchange information and gain support from other consumers. This study believes that discovering the motivations and outcomes of consumer engagement with OHSCs this will be beneficial for the community's founders improve the quality of their communities and provide better services for consumers to improve their sexual health and overall wellbeing. Thus, an in-depth investigation into consumer engagement with online health communities needs to be undertaken. The second and third research objectives of this study are designed to fill the research gap regarding the lack of relevant studies into OSHCs and these will be addressed by reviewing the factors that motivate consumer engagement with online communities and online sexual health communities, and the consequences of this engagement.

This current study aims to expand the consumer engagement research context into the field of sexual health and develop a comprehensive conceptual framework emerging from this empirical qualitative work.

2.10. Chapter Summary

In summary, engagement with online sexual health community address many benefits to the consumers, various information provided from the online sexual health community is a benefit for users on gaining knowledge, emotional interactions such as care about each other could transfer compassion and empathy. At the same time, the users' behaviours changed because of the community engagement, for example, the more open-minded on testing STDs/HIV could help on users' health co-creation. However, lack of studies researching the motivations and outcomes of individuals engaging with the online sexual health community, filling this research gap in order to obtain a better understating the factors which motivated users to engage with online sexual health communities, as well the outcomes after the engagement is urgent. By developing a conceptual framework regarding user's intentions to engage with online sexual health communities and the benefits of engagement, not only contribute to the engagement theory but also provide a guideline for online sexual community creators to improve the community for the sake of the benefits of community members.

CHAPTER 3. METHODOLOGY

3.1. Chapter Overview

This chapter covers the methodology undertaken in this research. The chapter commences with the research paradigm in section 3.2, and the philosophical is viewed in section 3.3. The research approach is explained in section 3.4, followed by a research design in section 3.5. Data is collected in section 3.6 and analysed in section 3.7. Finally, the chapter is summarised in section 3.8, followed by the assessment of reliability and validity in section 3.8. Finally, the chapter is summarised in section 3.9.

3.2. Research Paradigm

Kuhn (1962) described research paradigm as a set of common beliefs and agreements shared by research regarding on how to understand and solve the problem. In other words, research paradigm is a worldview or a set of linked assumptions about the world which is shared by a community of scientists investigating the world (Guba and Lincoln, 1994; Healy & Perry, 2000). A research paradigm is a recognised pattern that a specific scientific community must follow when engaging in a certain kind of scientific activities, which includes a shared worldview of the fundamental theoretical paradigms, methods, means, standards, and all that is relevant to scientific research (Milliken, 2001). The choice of research paradigm influences how individuals see the world, determines their perspective and forms their understanding of how things are connected. For researchers, the research paradigm is viewed as a framework comprised of a compilation of attitudes, values, beliefs, procedures and techniques, through which theoretical explanations are formed (Trochim and Donnelly, 2006). A suitable research paradigm determines the final position regarding the subject of current research. Thus, it is important to identify the research paradigm, which could help researchers to establish an appropriate research methodology.

According to Saunders et al. (2009), there are two main assumptions based on research paradigms which provide the foundations of the whole edifice, namely ontology and epistemology. Ontology was defined *as 'the nature of our beliefs about reality'* (Richards, 2003, p.33). Based on the assumption of what is reality, how it exists and what the truth is, ontology concerns reality and the nature of existence (Becker & Niehaves, 2007). Influenced by ontology, epistemology refers to *'the branch of philosophy that studies that nature of knowledge and the process by which knowledge is acquired and validated'* (Gall, Gall & Borg, 2003, p.13). Rather than research on the knowledge itself, epistemology investigates how the knowledge formed and understand what it means to know (Gary, 2014). Epistemology was described as what the researcher believes about the nature of reality will dictate the kind of relationship, which they think the research should have for what they studied (Guba & Lincoln, 1994, p.108). The belief of ontology leads to a certain epistemological assumption, Guba and Lincoln (1994) emphasised that researchers must keep a belief of objective detachment or value freedom, in order to study 'how things really are' and 'how things really work'. Easterby-Smith et al. (2002) suggested that epistemology is benefits to clarify the issue of research design and guides researchers on selecting a suitable research strategy and methods to collect empirical evidence.

The research paradigm is a set of shared assumptions that determine the research philosophy, which combined by both ontology and epistemology, particular epistemologies and ontologies favour particular philosophy that conforms to the understanding of knowledge and reality. The next sections will explain the details of selecting a suitable research philosophy.

3.3. Research Philosophy

Research philosophy is the development of the knowledge adopted by the researchers in their research and explores the nature of that knowledge (Saunders et al., 2009). Research philosophy involves not only the nature of the knowledge but also how this knowledge comes into being and how it is transmitted through language (Schlegel, 2015). An appropriate research philosophy helps in selecting a suitable research strategy and methods (Saunders et al., 2012).

There are two major and basic research philosophy thoughts, and they are positivism and interpretivism (Bryman, 2012). Positivism refers to 'An epistemological position that advocates that application of the methods of the natural sciences to the study of social reality and beyond' (Bryman, 2012, p. 28). Positivism views that reality is independent and is not influenced by the individual's sense but ruled under immutable laws (Gall et al., 2003).

Because the social phenomena are governed by laws, from the perspective of positivism, an objective and scientific method can formulate the laws by numerical data and factual statements (Rehman and Alharthi, 2016). Starting from the viewpoint of phenomenology, positivism believes that scientific laws can be obtained through the induction of phenomena (Bryman and Bell, 2011). Positivism aims to establish the objectivity of knowledge, and positivism researchers adopt theories to improve our understanding of phenomena by building a set of hypotheses and testing theories (Saunders et al., 2012; Babbie, 2015). Positivism is generally associated with quantitative methods, collecting numerical data and analysing statistics are the main oftenets of quantitative investigation and understanding of human behaviour (Saunder et al., 2012).

Contrary to positivism, interpretivism refers to 'A term that usually denotes an alternative to the positivist orthodoxy that has held sway for decades. It is predicated upon the view that a strategy is required that respects the differences between people and the objects of the natural sciences and therefore requires the social scientist to grasp the subjective meaning of social action' (Bryman, 2012, p. 30). Different from positivism, interpretivism ontology is relativism which interpretive researchers believe there are multiple realities exist while the truth is only existed with meaning and mediated by individuals' senses (Guba & Lincoln, 2005). Epistemological position of interpretivism is subjective, emphasised that the truth cannot be generalised but can be transferred to other similar contents, the method of understanding the social phenomena always required the interactions between individuals and society (Flick, 2004). Interpretivism believes that the world is subjective, and that the real world is the product of human interpretation of different behaviours and conditions, the truth of the real world is constructed subjectively by human thoughts rather than objectively and uniquely (Collins, 2010). Rather than using numerical data and factual pieces of evidence to investigate the truth, interpretive research aims to understand the social phenomena between individuals' interaction because of multiple knowledge established from a different perspective, which comes along with individuals' unique experience (Rehman and Alharthi, 2016). Cohen et al., (2007) emphasised the methodology of interpretive should through the eyes of the participants to understand the social phenomena rather than the eyes of the researcher. Researchers should go deep into real life to understand and interpret and reconstruct these concepts and meanings through scientific means and language, therefore, rather than using numerical data to test theories in a quantitative study. Interpretivism approach is widely used in qualitative research in order to understand a social phenomenon and the participants' motivation (Saunders et al., 2012).

Although interpretivism has been criticised too 'soft' due to the lack of objectivity (Grix, 2004), it still the most appropriate philosophy can be used on investigating social phenomena, exploring the complexities and conundrums of the immensely complicated social world that we inhabit (Gall et al., 2003; Richards, 2003; Gage, 2007). Interpretivism research aims to understand human behaviours instead of explaining people and society, much focus on people's interpretations of it. For example, Green and Thorogood (2018) emphasised researchers are more enthusiastic on patients' interpretations of their feelings and experience regarding on the medication or treatment which have been employed for their diseases, compare to simply understand how patients use the medication or how the treatment was conducted under the content of health research.

The present study attempts to investigate the motivations affect consumers' engagement with the online sexual health community, and what the outcomes are of engaging this community. Interpretivism emphasises the importance of people's subjectivity in understanding a new phenomenon, which allows multiple perspectives and versions of truths to emerge (Willis, 2007; Brink et al., 2012). Based on the purpose of this study, an interpretivism philosophy is adopted in this research, which allows research to understand the world through participants' perceptions and experience about the engagement with the online sexual health community. An interpretivism philosophy is beneficial because this study aims to investigate consumers' motivations of their engagement towards an online sexual health community, the reason of engaging could be various depending on individuals' different circumstances such as health conditions, knowledge background, personal experiences etc., hence an in-depth understanding is required. In detail, interpretivism indicates that the participants of the study are the interpreter and co-producer of meaningful data (Goldkuhl et al., 2012). Thus, this study believes by exploring individuals' motivation to engage with online sexual health community and the consequences of engagement, interpretivism is considered as an appropriate philosophy for this study.

3.4. Research Approach

The research approach is a plan and procedure that consists of the steps of broad assumptions to detailed methods of data collection, analysis, and interpretation. There are two major approaches, which are the inductive and the deductive approach (Collis and Hussey, 2014). According to Bryman (2015), the main difference between deductive and inductive methods is the relevance of hypothesis and research that deductive methods are often used to test the validity of hypotheses, while inductive methods benefit the emergence of new theories.

Gulati (2009, p. 42) stated "deductive means reasoning from the particular to the general. If a causal relationship or link seems to be implied by a particular theory or case example, it might be true in many cases. A deductive design might test to see if this relationship or link did obtain on more general circumstances". Deductive research usually based on the existed conceptual and theoretical structure then tested by empirical observation (Collis and Hussey, 2014). On the contrary to the inductive approach, the process of a deductive approach, which starts from building up hypothesises based on existing theories, then designing research to test hypothesises (Wilson, 2010).

Different from the deductive research approach, the inductive approach is a mode of thinking and a form of reasoning which analyses and generalises the general principles of facts obtained by observation, experiment and investigation (Goddard & Melville, 2004). It discovers the essence through the phenomenon, classifies particular physical phenomenon into a specific category, and finds out the law governing this phenomenon (Bernard, 2011). Inductive reasoning is always considered as a "bottom-up" approach which the researchers build up an abstraction or to describe a picture of the phenomenon through observations (Lodico et al., 2010). The process of inductive approach, which always starts from observing a specific phenomenon, the theory acts as the result of the study (Bryman, 2012).

The current study intends to investigate the motivations and outcomes of consumer' engagement with the online sexual health community. Due to the lack of comprehensive frameworks in this context, an inductive research approach is employed in this study, and starts with the observation and examination of events and specific processes in order to induce general inferences from particular instances and develop a theoretical framework from the observation of empirical reality. This study performed as an in-depth interaction with consumers who are using online sexual health community aims to find out the motivations and benefits of engagement, the specific and detailed research design will be explained in the next section.

3.5. Research Design

Research design refers to "organising activities, including the collection of data in ways that are most likely to achieve research aims" (Easterby-Smith et al., 1991, p. 33). The importance of research design cannot be ignored because a correct and appropriate research design is a prerequisite for the success of a study (Collis and Hussey, 2014). Churchill and Iacobucci (2010) mentioned that research design indicates an overall process of the current study and the steps of data collection and analysis, in order to provide the answers to the research questions.

3.5.1. Research Strategy

Research strategy refers to "The general plan of how the researcher will go about answering the research questions" (Saunders et al. 2009; p. 90). In other words, the research strategy is guided by research questions and objectives. Research strategy enables researchers to answer the research questions and the elementary questions which established the research flow and structure (Saunders et al., 2009). Regarding different research approaches, there are two main research methods which are qualitative and quantitative (Alasuutari et al., 2008). However, various factors determine the choice of research strategy, which depends on the aim of the study, research questions and objectives and the researcher's justification.

Bryman and Bell (2007, p. 154) described quantitative research as "Entailing the collection of numerical data and exhibiting the view of the relationship between theory and research as deductive, a predilection for natural science approach, and as having an objectivist conception of social reality". Quantitative research usually explains social phenomena in the form of data, and then evaluates and verifies the hypothesis, model or theory proposed before by collecting data and evidence (Anol, 2012). Different from the 'bottom-up' qualitative method, the quantitative research method is a 'top-down' research process, begins from the theory, then develop hypotheses, collect and analyse the data, the results will show the acceptance or rejection of the hypotheses, finally, by examining the relationships between different variables and factors, a quantitative method is used for testing theories (Creswell, 2009). In other words, quantitative research is a systematic empirical study of observable phenomena through statistical, mathematical or computational techniques, which mainly applies statistical techniques to study the relationship between numerical measurement variables (Given, 2008).

Qualitative research is a scientific method of observation to gather non-numerical data (Maxfield & Babbie, 2014). Qualitative research focuses on the meaning, conceptual definition, features, metaphors, symbols and descriptions of things rather than the counting or measurement of things (Berg & Lune, 2017). The qualitative study answers the why and how of a phenomenon, rather than focusing on how often it happened (Berg et al., 2012). Qualitative research aims to the analysis and research of social phenomena through digging problems, understanding event phenomena, analysing human behaviours and viewpoints, and the in-depth analysis of the development process and characteristics of social phenomena (Creswell, 2007). Qualitative method is especially applied in the social sciences and natural sciences subjects (Given, 2008). When the researcher aims to discover the unfold surface of a phenomenon and gather deep and rich thoughts of individuals or groups of people (Carson et al., 2001), a qualitative method is utilised because it can explain the way and the reason why a phenomenon occurred (Creswell, 2007). Qualitative methods are sometimes criticised because of their lack of universality, their over-dependence on the researchers' subjective explanations and the difficulty experienced by subsequent researchers to duplicate the work. However, qualitative methods are still an appropriate strategy which are beneficial in providing rich data about people and situations in real life and to be better able to understand behaviour in its broader context (Vaus, 2002).

The typical research objective of health study is to gain an understanding of human health, health behaviours and practices (Green & Thorogood, 2018). Qualitative research strategy roots on social science and humanities disciplines which contribute to people's understanding of the relationship between health and human behaviours (Henderson, 1935; Kleinman, 1973; Helman, 2000). Practically, the qualitative strategy is adopted by health practitioners to understand the needs of patients. Rather than quantify a social phenomenon or question about 'how many/ much', qualitative research focuses on understanding phenomena by questioning about the reason or motivation.

Qualitative method is commonly employed in health-related studies to explore more about phenomena in order to gain a better undersetting and fitting for the needs of patients. Geneau et al. (2008) employed a qualitative method, conducted semi-structured interviews to explore the willingness of cataract patients to pay for surgery. A semi-structured interview was also employed by Petersen et al. (2014), studied the experiences of patients who received at least one course of SCT (stem cell therapy) at an overseas clinic in the last five years. Other pieces of research regarding on information-seeking also confirmed the benefits of conducting qualitative research, Leydon et al. (2000) adopted in-depth interviews to find out the reason why cancer patients only want to seek information about their illness from physicians. Broom (2005) investigates how access to information and online support affects men's experiences of disease and the relationship between doctors and patients. A focus group was developed by Evans et al., (2001), aimed to investigate the factors that affect parents' decisions to accept or reject the MMR (measles, mumps and rubella) immunisation. Christianson et al., (2007) conducted in-depth semi-structured interviews which studied sexuality and risk in HIV-positive youths in Sweden in order to understand how they came to be diagnosed with HIV. The findings showed a richness of real lived experiences, which offered the insights and understanding of how and why the young population are at risk of contracting HIV.

This current study proposes to find out the reason why people use the online sexual health community and what are the benefits they received after using the community. To be more precise, this research aims to investigate the motivations and outcomes of consumer' engagement with the online sexual health community. A qualitative research strategy is employed in this study because it is widely adopted in health-related research and attempts to gather an in-depth understanding of the phenomenon investigated.

3.5.2. Research Instrument: Semi-structured interviews

Among the different data collection methods of qualitative research, interview instrument has been widely used in conducting field studies, even not the primary method, interview method was often adopted as a pilot study before the questionnaire was designed for some quantitative study (Qu and Dumay, 2011). Interviews and daily communications are different, which the interviews required 'a respect for, and curiosity about what people say, and a systematic effort to hear and understand what people tell you' (Rubin and Rubin, 1995, p17). Full preparation is needed as the unprepared interview will lead to invalid or disappointing answers, waste both interviewers and interviewees' time (Hannabuss, 1996). It is never easy to conduct a successful interview in order to answer the research questions, many details should be considered such as the objectives of an interview, how many interviewees and what type of the interview, as well as the choice of data analysis methods (Doyle, 2004). Therefore, a carefully designed and well-planned interview method is required.

The method of interview is viewed as the art of exploring and understanding the answers. Depending on the number of interviewees, the interview can generally conduct with individual or a group of participates, as known as focus groups (Gubrium and Holstein, 2001). Focus groups interview more than one participates in the meantime, rather than 'answering' the question, the interviewers in focus groups act as a moderator, the data come out by all participates' discussion via communicating (Qu and Dumay, 2011). Because the researcher is not the dominant role, the less bias occurs, it also benefits on saving time for both interviewers and interviewees (Doyle, 2004). However, focus groups are not suitable for researching sensitive and reluctant topics, which may involve their ethics or professional confidentiality (Qu and Dumay, 2011). The current study aims to investigate the motivations and outcomes of consumers' engagement with the online sexual health community, as such the content of interviews may involve the participants' personal sexual behaviours and sexual health concerns. Therefore, the focus group is not the appropriate interview method for this study.

Fontana and Frey (1998) emphasised that the classification of the type of research interview is based on the degree of structure. Accordingly, there are three types of interviews: the 'structured interview', 'unstructured interview' and 'semi-structured interview'. The structured interview is described as a set of pre-developed questions which answered by all participants in the same order, and questions are strictly controlled by interviewers in order to minimise researcher bias and improve the generalizability of the findings (Qu and Dymay, 2011). However, a structured interview was criticised as the highly standardised procedures hinder on collecting rich data (Doyle, 2004), because of the very little room for interviewers to dig in-depth information due to the lack of flexibility (Fontana and Frey, 1998). On the contrast way, unstructured interview strongly leads by participates with a relaxed and unassessed interview process, which interviewers do not know all the necessary questions in advanced, the whole process is very flexible finished by open-ended questions (Hannabuss, 1996; Fontana and Frey, 1998). For an unstructured interview it is commonly argued that the data only represents the participants' perspective in a particular time or context, as time passes, the data may no longer reflect the current situation (Freeman, 1984). The most commonly used interview type in qualitative research is the semi-structured interview, which questions based on identified themes, consistent and systematic questions with probes aimed to find out more detailed responses. An interview guide is required in order to make sure the same thematic approach is applied during the interview with all participants (Qu and Dymay, 2011). The semi-structured interview allows researchers to modify the style, ordering and terminology according to the actual situation of the interview, with a flexible, accessible and intelligible atmosphere which advantages on gathering rich and in-depth information through a discoursed interpersonal conversation (Kvale and Brinkmann, 2009; Qu and Dymay, 2011). Different from the structured interview which believes the objective truth will be answered the same way by different interviewees, the semi-structured interview requires researchers to use scheduled and unscheduled probes and follow up on questions, it is beneficial in producing different responses from participants' own experiences and backgrounds (Denzin and Lincoln, 1998).

3.5.3. Justification of the chosen OSHC

The rapid development of the internet has provided new communication methods that benefit both providers and users enabling the sharing of information, consumption experiences and opinions (Hennig-Thurau et al., 2004). Three types of information sources were earlier studied by Cox (1967):

- Marketer-dominated sources refer to the information fully controlled by the organizations, such as firm websites.
- Consumer-dominated sources are based on interpersonal communications such as online communities and forums.
- Neutral sources are independently measured from the third parties, for instance, customer reports.

Among all the different sources, consumer-dominated sources hold the most credibility, in which users provide opinion and information based on their own experience (Shao, 2009). Consumer-dominated sources, such as online review websites and communities, are helpful in supporting users' decision-making before buying products or services (Helm, 2001; Cheung and Thadani, 2012). Social media platforms are described as the group of internet-based applications which build on the ideological and technological foundations of web 2.0, and allow the creation and exchange of user-generated content (Kaplan and Haenlein, 2010). Within a relatively speech-free virtual environment, the information is perceived as more reliable (Willemsen et al., 2011; Erkan and Evans, 2014).

The Facebook online group (community) was chosen as the targeted research platform for this study. One of the significant features is Facebook groups, a virtual community that connects with certain people who share common interests (Facebook, 2021). Facebook communities are co-managed by a creator and moderators, where the themes of the group are all-encompassing and relevant to users' lives.

According to the latest data of the most popular social networks, Facebook was the leading social network with more than 2.85 billion monthly active users (Statista, 2021). A recent study carried out by Facebook and The Governance Lab at NYU found that more than 1.8 billion people use Facebook groups every month, and over 50% of these users are in five or more groups. The current study investigates the motivations of users' engagement towards an online sexual health community and the consequences of engagement. Thus, this study believes that it is crucial to choose a suitable Facebook online sexual health community, for collecting rich and targeted experimental data.

PrEp Facts: Rethinking HIV Prevention and Sex was chosen as the target platform for this research. The reasons for the selection will be discussed in three aspects: the number of group users, professional level of information, and community management mechanism.
Among all the information-based Facebook groups related to sexual health, the targeted community was established in 2013 and now has more than 20.9K users, which became the most popular sexual health correlated Facebook group, with an average of five new posts a day keeping this group active.

Regarding the professionalism of information, many of the group members were actual doctors or had sexual health expertise, ensuring the quality of the information provided. The chances of finding inaccurate or questionable messages are minimal, as expert group members quickly identify and remove low-quality information. Moreover, because the subject of this group is about sexual health, ‘high-quality information’ also refers to compassionate messages and positive vibes.

The community management mechanism guarantees that the rights and interests of all team members are protected. More specifically, a list of group rules from the administrators, including ten requirements about what behaviour one should follow when engaging with this group. This group is under the management of Facebook, and all data is kept under GDPR and accompanied by the Facebook privacy policy. Nine moderators are actively supervising this group to ensure the rights of all users.

Based on the above three main reasons, PrEp Facts: Rethinking HIV Prevention and Sex is taken as the experimental data source in this study, and it is believed that the data obtained will be profound and meaningful.

3.5.4. Inclusion Criteria

The selection of appropriate participants is vital for the data collection process, potentially enhancing the gathering of more information (Englander, 2012). Unlike a quantitative study, qualitative research focuses more on the meanings of the phenomenon rather than the statistics (Giorgi, 2009). Thus, when selecting the candidates for phenomenological study, the participants' experience is often an important consideration (Englander, 2012).

When designing high-quality research protocols, it is crucial to establish the inclusion criteria (Patino and Ferreira, 2018). Inclusion criteria are defined as the critical features of the target population that the investigators will use to answer their research questions (Hulley et al., 2007). In the current research, these criteria have been set to identify the respondents dealing with sexual health issues recently so that suitable participants are expected to have more than one year of usage of the targeted online sexual health community, and to have checked, replied, and posted sexual health-related concerns in the past six months.

3.5.5. Research Sample

Bryman (2012, p. 187) stated the population refers to "The universe of the units from which the sample is to be selected, the term 'unites' is employed because it is not necessarily people who are being sampled. It is important to note that the sample selection drives the quality of quantitative research; the sampling process must be clarified before the main study (Fink, 2002).

In the main, two types of sample selection are used: probability sampling and non-probability sampling. Probability sampling refers to "A sample that has been selected using random selection so that each unit in the population has known chance of being selected. It is generally assumed that a representative sample is more likely to be the outcome when this method of selection from the population is employed" (Bryman, 2012, p. 187). There are several types of probability sampling techniques, including simple random sampling, systematic sampling, stratified random sampling, cluster sampling, and stage sampling (Black, 1999). Tansey (2009) pointed out that probability sampling has its advantages in that it avoids the systematic error and selection bias. Because it enables generalisations from the sample to the broader population, it increases the accuracy of sampling error estimation and provides a higher level of reliability in research findings, but this method is usually more time-consuming and more expensive than non-probability sampling methods (Tansey, 2009).

On the other hand, non-probability sampling is defined as "A sample that has not been selected using a random selection method. Essentially, it implies that some units in the population are more likely to be selected than others" (Bryman, 2012, p. 187). Black (1999) states that there are three main techniques of non-probability sampling methods: purposive sampling (judgmental sampling), quota sampling, snowball sampling and convenience sampling. Compared with the probability sampling method, the population of a non-probability sampling selection cannot be identified and depends on the researchers' judgement. However, a non-probability sampling method could reflect the descriptive comments about the sample, the time and cost are less than probability sampling method, even though it requires more efforts on planning (Tansey, 2009). According to Black, 1999, the comparison between the advantages and disadvantages among different sampling methods can be shown as in Table 3.1 below.

Technique	**Descriptions**	**Advantages**	**Disadvantages**
Simple Random	Random sample from whole population.	Highly representative if all subjects participate; the ideal	Not possible without complete list or population members; potentially uneconomical to achieve; can be disruptive to isolate members from a group; time-scale may be too long, data/ sample could change.
Stratified Random	Random sample from identifiable groups (strata), subgroups, etc.	Can ensure that specific groups are represented even proportionally, in the sample(s) (e.g. by gender), by selecting individuals from strata list.	More complex, requires greater effort than simple random; strata must be carefully defined.
Cluster	Random samples of successive clusters of subjects (e.g. by institution) until small groups are chosen as units.	Possible to select randomly when no single list of population members exists, but local lists do; data collected on group may avoid introduction of confounding by isolating members.	Cluster in a level must be equivalent and some natural ones are not for essential characteristics (e.g., geographic; numbers equal, but unemployment rates differ).
Stage	Combination of cluster (randomly selecting clusters) and random or stratified random sampling of individuals.	Can make up probability sample by random at stages and within groups; possible to select random sample when population lists are very localized.	Complex, combines limitations of clyster and stratified random sampling.

Purposive (Judgemental)	Hand-pick subjects on the basis of specific characteristics.	Ensures balance of group sizes when multiple groups are to be selected.	Samples are not easily defensible as being representative of populations due to potential subjectivity of researcher.
Quota	Select individual as they come to fill a quota by characteristics proportional to populations.	Ensures selection of adequate numbers of subjects with appropriate characteristics.	Not possible to prove that the sample is representative of designated population.
Snowball	Subjects with desired traits or characteristics give names of further appropriate subjects.	Possible to include members of groups where no lists or identifiable clusters even exist (e.g., drug abusers, criminals).	No way of knowing whether the sample is representative of the population.
Convenience	Either asking for volunteers, or the outcome of not all those selected finally participating, or a set of subjects who just happen to be available.	Inexpensive way of ensuring sufficient numbers for a study.	Can be highly unrepresentative.

Table 3.1: Different sampling methods

There is one particularly useful sampling method in qualitative research, namely purposive sampling, also called judgmental, selective or subjective sampling, and is based on a researcher's own judgement when choosing participates. Ritchie et al., (2003, p. 77) defined purposive sampling as a strategy where "Members of a sample are chosen with a purpose to represent a location or type in relation to the criterion". As a type of non-probability sampling, purposive sampling occurs when the elements selected for the sample are chosen according to the researcher's judgment. Researchers generally believe that they can get a representative sample through reasonable judgment, which will save time and money (Black, 2010). This sampling technique also benefits critical thinking and defines the parameters of the population, which is suitable for an early-stage study (Miles and Huberman, 1994). Moreover, the purposive sampling technique may prove effective when only a limited number of people can be used as the main data source due to the nature, purpose and objectives of the research design (Black, 1999).

The snowball sampling technique is simply defined as "A technique for finding research subjects. One subject gives the researcher the name of another subject, which in turn provides the name of a third, and so on" (Vogt, 1999; Atkinson and Flint, 2001, p.1). Snowball sampling is described as a random sample of individuals drawn from a given finite population and is undertaken when a participant knows others who can fulfil the qualifications defined for the target population (Salganik & Heckathorn, 2004; Berg, 2006). The snowball sampling method requests that existing participants help in recruiting new prospective subjects from amongst their acquaintances, this is also called 'referral sampling' or 'chain sampling' (Goodman, 1961). When collecting data from virtual social networks, this sampling technique is called 'virtual snowball sampling' (Baltar & Brunet, 2012).

Snowball sampling has been used in both qualitative and quantitative research and is particularly suitable when dealing with hard-to-reach populations (for example, drug users and sex workers). By employing the snowball sampling technique, researchers can be linked to a specific network group through social interaction with the existing subjects in the network (Faugier &Sargeant, 1997; Atkinson &Flint, 2001). The snowball sampling technique has been widely employed within various studies; drug users (Waters, 2015; Sourinejad et al., 2020); prostitution (Twizelimana, 2020); people living with AIDS (Pollak and Schlitz, 1988); pickpockets (Inciardi, 1977); several diseases (Rankin and Bhopal, 2001; Jägervall et al., 2020) and HIV and STDs (Feng et al., 2010; Guo et al., 2011; Nyaga et al., 2020).

In this piece of research, the population constitutes consumers who are seeking information around sexual health-related concerns and conditions. It is impossible to study all of the members of the target populations and therefore, the sample selected should reflect the whole population (Bryman &Bell, 2007). This research focuses on investigating the motivations and benefits of engaging with OSHCs. In order to access valid data, a non-probability sampling method has been chosen for this research. Target participants are defined as the active members of an OSHC. They have at least three years' worth of user experiences within the OSHC. Specifically, purposive sampling has been adopted for the current study, which refers to the participants who regularly post questions on community message boards, or answer questions from other users' posts. Snowball sampling is also employed because it is an effective method by which to recruit numerous participants who satisfy the participation criteria within a limited time and budget (Benfield and Szlemko., 2006).

Snowball sampling is an appropriate technique deployed in order to reach more potential participants and trace their connections (Bryman, 2002). However, the main reason for adopting snowball sampling is because it is very effective at collecting data from hard-to-reach sample populations. Such sample populations are usually vulnerable or stigmatized individuals, and the number of such respondents is relatively small, or requires an established trust base or social connections to initiate research, such as drug users or sex workers (Baltar and Brunet, 2012). Snowball sampling helps researchers identify 'hidden populations' that target sensitive research topics. For example, the aforementioned study adopted snowball sampling to recruit a total of 2,051 subjects and looked at the association between HIV infection rates and intravenous drug use (Sedgwick, 2013). Snowball sampling helps researchers identify 'hidden populations' for sensitive research topics like sexual health, or health more broadly, because a particular group of patients are often required to cooperate.

The outbreak of COVID-19 not only damaged patients' physical conditions but also their mental wellbeing. Arpacioglu et al. (2020) adopted the snowball sampling method to investigate the secondary trauma among health care workers under the influence of COVID-19 and related factors affecting their psychological condition. The study highlights the importance of providing regular social support to high-risk groups such as health care workers during a pandemic, as well as checking and controlling their mental health.

Cui et al. (2014) pointed out that snowball sampling requires a connection between participants and a willingness to maintain and provide that attachment. Therefore, snowball sampling is more appropriate to the current research, in the context of OSHCs, because the close relationships among community members reinforce their connections, which further provides a better opportunity to conduct research. Although snowball sampling is criticised as being subjective to selection bias (Stainton, 2018), the overall advantages outweigh the disadvantages for adopting the method when collecting data.

3.6. Data Collection Method

3.6.1. Pilot Test

The pilot test assists the research in determining if there are flaws, limitations, or other weaknesses within the interview design and will allow the researcher to make necessary revisions before the implementation of the study (Kvale, 2007).

The core issue at the centre of data collection via interviews for qualitative research is understanding the subject from the perspectives of the interviewees (Percy et al., 2015). Thus, the interview questions are crucial to the research. Paisley and Reeves (2001) state that the interview questions themselves are viewed as the heart of interviewing. Therefore, a pilot test for the interview is necessary to pre-test the questions and gain practice before the main study (Majid et al., 2017).

Although the pilot test is widely used for *quantitative* research, the importance of a pilot test for *qualitative* research cannot be ignored (Tashakkori and Teddlie, 2003; Majid et al., 2017). It helps identify whether there are flaws, limitations or other weaknesses within the interview questions, which in turn provides a chance to modify the potential issues before undertaking the main study (Van Teijlingen & Hundley, 2002; Kvale, 2007). A pilot test helps strengthen the interview procedures, which in turn allows the relevant adjustment regarding the interview guide and the interview questions before primary data collection is undertaken (Majid et al., 2017).

This piece of research conducted four pilot tests amongst participants who have used the online sexual health community **PrEp Facts: Rethinking HIV Prevention and Sex** over a period of three years. Each interviewer will get a £15 Amazon.com e-gift card. All of the four interviews were conducted face-to-face, each interview lasted between 40 minutes and an hour. Participants were asked to give comments regarding the interview questions, and these were noted by the interviewer. The participants of the pilot test were comprised two females and two males whose ages ranged between 25 and 40 years old. All participants were employed full-time in the UK. The pilot test indicated that most of the questions are tightly connected with the research questions. Some vague words were replaced due to the feedback from the pilot tests: the word 'engage' was replaced with 'use' to simplify the meaning of engagement. In addition, to avoid terminology misunderstanding, term 'community' was adapted to 'forum'. A small number of questions were modified due to repetition and the potential for misunderstanding, whilst the sequence of the questions was also checked – no modification to the sequence was required.

3.6.2. Data Collection

Before beginning the data collection process, this study conducted preparatory work, including checking all necessary documents such as researcher consent forms and interview questions to make sure all information is accurate. A digital recruitment leaflet including the introduction of this study and the expectations of interviewees was posted on the targeted Facebook online community after getting permission from the group administrator.

This study was fully supported by the targeted online community creator who helped to disseminate information and re-post the interview recruitment. Interestingly, one respondent noted that the researcher deliberately added the location to the recruitment post (Newcastle University Business School), which increased the credibility of this study.

The final version of the interview questions was confirmed according to the pilot study, with a small amount of modification, and some mistakes around the wording of questions were corrected. An invitation about this piece of research was posted on a well-know OSHC established within Facebook, the aforementioned **PrEp Facts: Rethinking HIV Prevention and Sex** (https://www.facebook.com/groups/PrEPFacts). A set of interview documents will be sent privately to the interviewees who matched the participant requirements, and these documents include an information sheet, an interview consent form and a researcher consent form. All of the information is highly confidential and strictly follows the rules of GDPI.

The whole data collection process took about three months, from December 2019 to the end of March 2020. Our study aims to investigate the phenomenon of the motivations about consumer engagement towards online sexual health-related communities and the consequences after engagement. Thus, a qualitative interview strategy was adopted for gaining in-depth data. All interviews were planned as face-to-face, where interaction between the interviewer and the interviewee is direct and without delays due to technical disruptions (Opdenakker, 2006). Furthermore, the physical meeting has the advantage of creating a comfortable atmosphere, combining body language, facial expressions, and other non-verbal social signals, which helps the researcher perceive the participant's attitude directly (Saarijärvi and Bratt, 2021).

However, the COVID-19 pandemic broke out at the end of February 2020. A national lockdown was applied on the 23 March 2020 (UK Government, 2020). This catastrophe for all humanity has also inconvenienced this study regarding the method of data collection. Due to the lockdown policy, the requirement of social distancing was the most significant obstruction to this study because the interview method had to change from the planned face-to-face approach to remote interviews via professional conferencing software such as Zoom and Skype. Thus, fifteen interviews were conducted via Zoom and Skype, depending on the participant's preference.

This research concerns the potential issues regarding video interviewing demanding reliable technology, where a good internet connection and good quality communication tools (microphone and camera) are crucial (Krouwel et al., 2019). Moreover, especially for this sensitive topic, it is vital to consider the confidentiality of the participants, and the researcher must ensure that there are no uninvited persons present in the room where the interview is taking place (Saarijärvi & Bratt, 2021).

Therefore, during each online interview, the researcher must keep external interference to a minimum. For instance, ensuring that the whole interview is carried out smoothly with a stable internet connection is conducive to information collection. In order to offer interviewees, the most comfortable atmosphere, the interview time and software are determined by the participants. Moreover, as this study involves the sexual health experience of the respondents, for the protection of their privacy, interviewees can choose voice-only interviews (no camera). Fortunately, there were no significant differences in data richness, when comparing face-to-face interviews and online interviews. It is worth mentioning that potentially online interviews are more beneficial when obtaining sensitive information, while face-to-face interviews are less effective (Malhotra and Das, 2013).

All the interviews were conducted in English except for two interviewees who insisted on using Mandarin. According to Clark & Buran (2006), for each interview, the recorded data must be transcribed as soon as possible in order to ensure as much accuracy as possible. The interview data were manually transcribed, meaning the interview content is typed while listening to the recording. The exact process was also carried out for the two Mandarin interview documents and later translated into English by professional translation software (Youdao). Based on the differences in grammar and voice between Mandarin and English, the researcher (who is fluent in English and Mandarin) reviewed the results several times to ensure there were no languages biases and all information was accurately translated.

Although there is no specific criterion for the number of improbability samples in qualitative research, the target sample's size often depends on 'theoretical saturation' (Guest et al., 2006; Kvale, 2008). The theoretical saturation was defined earlier as 'no additional data are being found, whereby the researcher can develop properties of the category. As [the researcher] sees similar instances over and over again, the researcher becomes empirically confident that a category is saturated' (Glaser and Strauss, 1967, p. 61). In summary, theoretical saturation occurs when the data's content is redundant and repetitive (Morse et al., 2014). When the data reaches theoretical saturation, collecting more data about the theoretical category will not reveal any new information or generate new attributes (Charmaz, 2006). Theoretical saturation is considered the gold standard for determining the endpoint of qualitative analysis (Roy et al., 2015). It is the end of the data collection phase when respondents have repetitive answers to the questions raised, and no new insights or themes are found.

In the current study, theoretical saturation occurred in the seventeenth interview, wherein the interviewee's answers were similar to the previous results. For example, information relevance, information accuracy, information professionalism and the credibility of the information source were repeatedly mentioned to describe the motivations behind engagement with the target online sexual health community. Therefore, after completing the remaining three interviews, this study's data collection process was officially completed. In total, 20 people participated to this study. All interviewees were asked about their use of the OSHC mentioned above. The participants were recruited through a post on the previously mentioned OSHC Facebook group. The interested candidates were contacted formally through an email invitation. With their acceptance, the information sheet, the participants' form, and the research consent form were sent to them to sign. These documents are presented in the appendix. The interview venue and the specific interview date were agreed with each participant based on their convenience.

The research background of this study is based on an online community related to sexual health, which inevitably involves some sensitive topics, such as sexual behaviour and sexually transmitted diseases. The interview strategy is critical in order to avoid upsetting the interviewees which would potentially lead to the failure of the research (Mealer and Jones， 2014). Two important principles run through the whole interview strategy, namely the interviewer’s attitude and interview questions (Dempsey et al., 2016; Speer and Tenbrink, 2020). Interviewees are usually sensitive to the attitudes of interviewers, and so the researcher’s attitude should not display personal judgment, prejudice and speculation. A friendly and positive interview attitude is more likely to win the interviewees' trust and frankness (Murray, 2003; Kawulich, 2011). Regarding the interview questions themselves, researchers should avoid time-wasting and meaningless questions. For example, this study focuses on users' motivation for using online sexual health communities, rather than focusing on the interviewees' medical history. Also, questions that are preconceived or prejudiced, such as those that question the participants' sexual orientation should not be considered. In addition, researchers should be careful not to ask questions that are too complex or have too much irrelevant information. Health, and especially medical terms related to sexual health, should be taken into account in the design of the research questions, and the use of overly complex and unfamiliar vocabulary should be avoided.

This study aims to determine the motivations and outcomes of consumer engagement with the online sexual health community. Sexual health-related concerns and fear of sexually transmitted diseases are not unique to any group, and any person who has sex will potentially be exposed to sexually transmitted diseases or problems related to sexual knowledge. Therefore, object of this study is not targeted at any specific community, such as LGBTQ. However, because men who have sex with men (MSM) are more likely to be exposed to sexually transmitted infections, the male homosexual community has increased levels of concern about sex-related issues.

This study's participants were from Facebook's most popular sexual health-related community, which is dominated by male users. Therefore, the final sample of this study was made up of 20 people, including 15 males and 5 females. Through the data collection method of snowball sampling (Bryman, 2002), members of the community forwarded interview invitations to each other and the author of this piece of research received positive responses from some community members within a concise period of time. Most of the participants in this study are active users in the target community, with which they have engaged for a long period of time and often actively participate in discussions with other users. It is worth mentioning that the founder of the community used in this study was also interviewed, with rich and meaningful data provided. Respondents are from different countries and work in different jobs, ranging in age from 25 to 66. Their education level ranged from undergraduate level to doctoral level. All participants were given a £15 Amazon.com e-gift card in return for their participation. The demographic information of the participants is displayed in Table 3.2 below

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Participant	Gender	Age	Year of Use	Ethnicity	Educational Level	Career
ID 1	Male	32	3	Russian	Undergraduate	Restaurant Manager
ID 2	Female	34	3	Chinese	Postgraduate	PhD Candidate
ID 3	Female	31	1	Bangladesh	Postgraduate	Student
ID 4	Male	30	2	Chinese	Doctoral Degree	Bank Manager
ID 5	Male	28	3	Chinese	Undergraduate	Photographer
ID 6	Female	28	3	Chinese	Postgraduate	Director
ID 7	Female	25	2	Chinese	Postgraduate	Student
ID 8	Male	27	4-5	British	Undergraduate	Graphic Artist
ID 9	Male	28	2	American	Undergraduate	HIV Institution
ID 10	Male	50	6	American	Undergraduate	IT Service
ID 11	Male	33	1.5	British	Undergraduate	Marketing Manager
ID 12	Male	44	4	Portuguese	Undergraduate	Teacher
ID 13	Male	29	2	Chine HK	Postgraduate	Teacher
ID 14	Male	41	2	Mexico	Postgraduate	Insurance Company
ID 15	Female	28	4-5	Chinese	Postgraduate	Education Manager
ID 16	Male	52	5-6	British	Doctoral Degree	Health Promoter
ID 17	Male	28	1	Chinese	Undergraduate	Bank Manager
ID 18	Male	48	7	American	Postgraduate	Psychotherapist
ID 19	Male	62	4	Australian	Undergraduate	Medical Provider
ID 20	Male	66	5	French	Postgraduate	Engineer

Table 3.2: Demographic Information

3.6.3. Ethical Considerations

Ethical concerns relating to the study has been defined as: 'ethical concerns are present in all research designs and go beyond data collection to include analysis and publication' (Burton, 2000, p. 299). There are four major aspects that researchers need to pay full attention to regarding ethical concerns: participants, data protection, anonymity and confidentiality (Collis and Hussey, 2003). Before conducting the interviews, the ethics forms and participant forms were reviewed and approved by Newcastle University., The researcher consent form, interview consent form and information sheet are attached in the appendix. All of the interview transcripts are highly protected and strictly follow general data protection regulation (Data Protection Regulation, 2018).

3.6.4. Reflection of conducting research in sensitive topic

The fundamental purpose of qualitative research interviews is to investigate respondents' views and opinions based on their unique experiences (Rossetto et al., 2014). However, interviewers need to plan carefully when researching sensitive topics, presupposing the ethical obligation to ensure that the data are collected to the maximum extent possible while protecting respondents (Gleicher, 2019).

This current study aims to discover the phenomenal motivation and outcomes of engagement in the online sexual health community. The interview content will involve the experiences of the targeted online group, wherein potential respondents may expose their sexual health-related experiences. In addition to ensuring a high degree of confidentiality in the interview content, interviewers should also protect the respondents' emotions, pay attention to wording, and treat each participant with respect and sincerity (Corbin and Morse, 2003). Thus, these two requirements were particularly noted.

Respect

As a prerequisite for communication, respect does not simply mean a positive attitude. For sensitive topics, interviewers should also respect the content of the interview. For example, this study involves sexual health, and it is inevitable to talk about topics related to sexual experience. Therefore, interviewers should treat the interview content professionally and not make accusations or comments regarding respondents' sexual behaviours based on personal views.

Smiling, maintaining eye contact, and taking notes made participants feel respected and willing to provide more information.

Interview language

When it comes to sensitive topics, wording plays a decisive role. Using the right words and positive language is especially important when talking about disabilities and health conditions. For example, rather than using terms such as ‘afflicted by’, ‘suffering from’ or ‘victim of’, people living with disabilities are frequently addressed during conversations. Moreover, when referring to a negative test result, 'clear' is always the correct word to 'clean'. Although they essentially mean the same thing, they have very different language connotations. A 'clean' test report means that the person diagnosed with an STD is' dirty ', which is entirely wrong. Therefore, always use accurate and appropriate interview language to make participants feel comfortable and not judged.

Various studies involve sensitive topics, and this study only involves a superficial branch (sexual health). According to different research topics, the design of the interview should be flexible and varied. The data should be collected to the maximum extent that the interests of both interviewees and interviewers are not infringed (Gleicher, 2019).

3.7. Data Analysis Method

After the data has been collected, it is important to employ an appropriate data analysis method, followed by a rigorous and methodical analysis in order to obtain a meaningful and useful result (Attride-Stirling, 2001). Data analysis procedure is understood to be the most complex process of qualitative research (Thorne, 2000). Qualitative researchers are required to demonstrate this process through methods such as recording, systematising, coding, theming, disclosing, decontextualising and recontextualising to achieve clarity and credibility (Attride-Stirling, 2001, Cote & Turgeon, 2005; Ryan, Coughlan, & Cronin, 2007, Starks & Trinidad, 2007).

Thematic analysis is defined as "A method for identifying, analysing and reporting patterns within data" (Braun & Clarke, 2006, p. 79), and has been argued to be the foundational method for qualitative research because it can provide core skills for collecting different forms of quantitative analysis (Braun & Clarke, 2006). Thematic analysis is viewed as a translator for communication between researchers using different research methods (Boyatzis, 1998). Via a dataset which uses identifying, analysing, organizing, describing and reporting themes, the thematic analysis produces reliable and perceptive findings (Braun & Clarke, 2006). Because of the flexibility of thematic analysis process, there has been some criticism that it could lead to inconsistency and lack of coherence in the results (Holloway & Todres, 2003). However, the advantages of thematic analysis cannot be ignored; it is a highly flexible approach which can fit various studies and contexts and provides rich and in-depth data (King, 2004). The thematic analysis evaluates the different perspectives of the participants, distinguishing similarities and differences, and further generating insights, helping to provide a well-organized research report (King, 2004; Braun & Clarke, 2006). Moreover, the thematic analysis provides a clear guide for researchers who are relatively unfamiliar with qualitative research methods (Braun & Clarke, 2006). Thematic analysis was adopted in this study to investigate different participants' perspectives to produce various and unanticipated insights (Fereday and Muir-Cochrane, 2016), which allowed the for the generation of prevailing themes and a summarising of the critical characteristics of the data into thematic codes and performing data analysis (Nowell et al. 2017; Braun et al., 2019).

In this study, all the interview contents will be recorded in the form of audio files. Transcribing is usually a process of listening to the recording of an interview while using a computer to input the content of the interview as text. The interviewer must pay great attention in order to accurately and clearly transcribe all the information. During the interview, the quietness of the surrounding environment, the quality of recording tools, the interviewee’s language habits, and accents and other objective factors all have a certain impact on the resulting transcription. Therefore, all interviews were conducted in a quiet environment, like a quiet room or a meeting room, to ensure the clarity of the recording. After finishing the transcription process, the interviewer listened to the recording repeatedly and proofread the transcripts carefully.

According to Braun and Clarke (2006), there are six processes which make up thematic analysis. The first step is familiarising oneself with the data – notes and are made while reading and rereading the transcripts. In this study, all the interview transcripts were read at least five times, in order to gain familiarity with the content. Initial thoughts were set aside and later generated as codes, referring to the second step of thematic analysis – this study used Nvivo software. Nvivo is a widely used data management tool specific to the analysis of qualitative data. The most significant advantage of Nvivo is that it saves a lot of data analysis time when compared to completing the coding work manually. As a data analysis method, Nvivo was found to help researchers conduct text data processing such as coding and theme generating and link these themes together to further analyse the relationship between them. Nvivo is widely used in analysing interview data in the qualitative study (King, 2004; Beddall-Hill et al., 2011). Compared with manual data analysis, which takes a long time and is prone to errors when searching for information, Nvivo saves the time of manual coding, makes it easier to reshape and encode, and helps to create topics, which makes retrieval more convenient (Mclafferty and Farley, 2006). Overall, Nvivo helps improve the accuracy of qualitative research (Bezeley, 2007).

The open coding technique was adopted in this study for data analysis (Strauss and Corbin, 2014). Open coding is described as a process for developing properties and dimensions of the concepts based on certain data pieces and in turn exploring their in-depth meanings (Strauss and Corbin, 1988). Open coding was employed line-by-line to generate themes, all data were coded systematically three times within different periods. Axial coding was used to categorise the codes under a higher-level concept (Strauss and Corbin, 1998). Some codes were found to have a similar meaning or to refer to a common phenomenon, wherein themes are established from a different set of codes. For example, based on the question about the types of information consumers use to engage with an online sexual health community, participants mentioned different informational themes such as accurate information, relevant information, and professional information which this study ultimately integrated into a single theme, namely information quality.

After generating the themes, a careful refinement of these themes is required, in order to review not only the level of the coded data, but also the themes. Thereafter a thematic map was produced. All generated themes need to be defined and named in step five. Namely, one must clearly identify the themes from the previous studies (if the theme has existed previously); otherwise, researchers need to provide their own definitions. Eleven themes emerged from this empirical research; some of the themes were found to be consistent with previous studies such as ‘social support’ and ‘source credibility’, wherein the definitions were adopted from the extant research. New themes like ‘community quality’ are primarily defined in this study. A comprehensive coding framework with all quotes, codes, themes and definitions is displayed in the appendix. Finally, the last step for thematic analysis requires a concise, coherent, logical, non-repetitive and interesting data analysis report, combined with sufficient evidence to reinforce each theme using direct quotes from the data that comprised the systematic research findings.

3.8. Reliability and Validity Assessment

Although the terms 'reliability' and 'validity' are tools used for essentially positivist epistemology in quantitative research (Winter, 2000), a suitable qualifying check or measure for qualitative research results is required. Denzi (1978) first outlined a triangulation technique, which stated that the triangulation method could avoid the deviation of experimental results. There are four main methods used for qualitative research data analysis: data triangulation, investigator triangulation, theory triangulation and methodology triangulation, (Denzi, 1978). for improving the validity and reliability of research or evaluation of findings (Golafshani, 2003; Haring, 2008).

The triangulation technique was adopted in this current research to ensure bias and errors could be credibly reduced (Filieri et al., 2017). Specifically, the investigator triangulation technique was used by asking three professional researchers in the same field who were not involved in the research to examine the interview data to guarantee the reliability and validity of the results. Some codes and themes were adjusted by generating all three researchers' suggestions.

3.9. Chapter Summary

This chapter has presented the research methodology used in this study. Firstly, we have distinguished the different research paradigms and confirmed that interpretivism philosophy is the most suitable for this study. Next, the research design, the research strategy and research method have been identified. Qualitative research with semi-structured interviews was selected where the research data was collected from 20 participants in order to investigate the motivations and outcomes of consumer engagement with the online sexual health community. Four pilot tests were conducted to validate the interview questions and strengthen the interview procedures. Furthermore, coding progress was conducted both manually and with software named NVivo 12. The next chapter will provide the findings of this empirical research.

CHAPTER 4. FINDINGS

4.1. Chapter Overview

This chapter begins by reporting the results of validity and reliability check in section 4.2. Next, section 4.3 provides detailed findings of the qualitative study regarding the motivations and the outcomes of consumers' engagement towards online sexual health community are presented in section 4.4, where all of the themes and codes will be presented in the following sections and sub-sections. Both software coding (NVivo 12) and manually coding (Microsoft Word) technics were applied to process the data and report results, followed with the conceptual framework emerged from this study in section 4.5. Finally, this chapter is summarised in section 4.6.

4.2. Results of Validity and Reliability Assessment

This research has adopted one of the triangulation techniques – investigator triangulation – to examine this empirical study's reliability and validity (Denzi, 1978). Five interview transcripts were given to three other researchers for validity and reliability tests. All of them are professional marketing researchers and very familiar with qualitative research. The three researchers' analysis results will be compared with the previous results, wherein the assessment of reliability and validity showed that most codes and themes were consistent.

4.3. Motivations for consumer engagement with the online sexual health community

This current study considers eight motivating themes: information quality (4.3.1), information quantity (4.3.2), social support (4.3.3), fear (4.3.4), source credibility (4.3.5), convenience (4.3.6), online community quality (4.3.7) and privacy concerns (4.3.8). These themes regard consumers' engagement towards the OSHC which emerged from the interview data. All themes and codes that form themes will be stated in detail in the following sub-sections.

4.3.1. Theme 1. Information Quality

Information quality is defined as 'the quality of the content of a consumer review from the perspective of information characteristics' (Park et al., 2007, p. 128). It is also defined as "the audience's subjective perception of the arguments in the persuasive message as strong and cogent on the one hand versus weak and specious on the other" (Petty & Cacioppo, 1987, p. 264-265). Information quality is an important motivation for information adoption; how people perceive and believe the information from websites (Wathen and Burkell, 2002). In this research, information quality was considered to be the foremost motivating theme regarding consumer engagement with the online sexual health community. Information quality is constituted by these six codes: information accuracy, information relevancy, information timeliness, information completeness, information understandability and information specialty. Each code will be further explained in the following sub-sections.

4.3.1.1. Information Accuracy [Code 1]

Information accuracy refers to whether information from websites is based on the truth, and the degree to which it is free of errors (Flanagin and Metzger, 2000). Information accuracy refers to the correctness of the information, and accurate information can help people make reasonable judgments and decisions, thus influencing their behaviour. Highly accurate information proves the high quality of the information. Information accuracy is essential to people seeking sexual health-related information. If the information is not accurate, there can be severe outcomes for the OSHC user. For example, a wrong diagnosis will lead to treatment delay, potentially leading later to treatment difficulty. If the information provided by the online sexual health community is correct, users are more likely to engage with this community.

'The reply itself, let's see. I personal feel descriptive answer is a more rational answer. For example, some of the answers have exclamation marks or are very drama, or are very emotional words, I think there is not wonderful or something. So, if someone using these words, it makes me think this is not real. Or if it is just a personal answer, but some users replied to me very logical and organized. The logic, I think, is very important, and I think the answer might be reasonable.' [ID 15, Page 7, Line 24-29, Age 28]

‘They recognised my symptoms. On the top of that, they asked some very specific question, which were very appropriate for my case. Then I realised that they might have diagnosed me correctly. When I followed their advice that gave me some relief.’ [ID3, Page1, Line18-22, Age31]

Accurate information is particularly important in health-related online groups because the contents are tightly associated with questioners' health conditions. Adopting inaccurate information could directly threaten their lives, such as missing the best treatment time or worsening the illness by mistaking the illness medicines. Specifically, this research is under the concept of sexual health. Most symptoms of STDs are similar, where the accurate information is usually not a single sentence but inferred from more details asked about the questioner. A detailed reply should be logical and neutral, without personal emotions and experiences involved. The accuracy of the information is conducive to a correct diagnosis of the disease and the most appropriate treatment, thus improving health status more effectively.

4.3.1.2. Information Relevance [Code 2]

In this context, information relevance refers to the extent to which a review is applicable and helpful for the task or question at hand and depends on different consumers’ needs in specific situations (Wang and Strong, 1996). The information relevance level refers to whether the information matches the user’s needs, thus saving their time when seeking the information relevant to their question or concerns. As a key element of information quality (Dunk, 2004), information relevance was found to be necessary in the online sexual health community, where users are more likely to interact with the community if they can find the information related to their concerns.

‘I felt that it was necessary that the problem he described should be relevant to my problem.’ [ID 8, Page 4, Line 24-25, Age 28]

‘But actually, by responding with a commentary and with experience, people might say, I experienced that. I experienced that to you and what I did about it was rather than following the traditional medical advice, I tried doing this this and someone else might then chat in with, so I tried exactly the same thing. It worked, or it didn't work for me. So, for me, it's more than trusting the facts, it's also the exchange between people who might have acted upon that Information.’ [ID 16, Page 3, Line 1-5, Age 52]

Whether or not to adopt a message is related to how relevant the information is to the question, which should be pertinent and meaningful to the questioners and should be in their area of responsibility. Regarding the comments on the OSHC, high relevance information usually starts a discussion with personal experience based on the questions raised. This information attaches to the sexual health-related concerns, which is even more valuable to the posted questions for suggestions and advice because the experiences could potentially guide the questioner to achieve a better health status.

4.3.1.3. Information Timeliness [Code 3]

Information timeliness refers to whether the information is received in time to make a decision (Jobber, 1999). Information timeliness as with other key elements of information quality described means that the information should be available when needed (Bailey and Pearson 1983). Information timeliness is thus described as significant, in-time information that helps solve the user's health concerns. Health issues can be accompanied with serious concerns, such as correct antibiotics usage so those seeking a response online favour up-to-date information. In this study, whether or not the information is provided on time by the OSHC is mentioned many times by different participants.

'The reason is that I want to stay in touch about the news. If there's any new medicine or there's a new sexual practice that it's gonna be healthier or not. That's the main reason that I'm using these forums. I am more likely to use it to find out new updated information.' [ID 14, Page 1, Line 25-27, Age 41]

'That's a lot of people who post articles that might be out of date, or the information is wrong. So, I am much more likely to do some kind of fact check on it or ask somebody who I think will know more about it.' [ID 16, Page 4, Line 30-32, Age 52]

As an internet-based online health community, the timeliness of information posted by users must be guaranteed, which the information needs to be always up to date. As well as the accuracy of the information, timeliness is crucial for users who adopt the information. Outdated information, however accurate, has little or no validity for emerging problems. The

OSHC used in this study, with nearly 20,000 users participating, ensures the rapid updating of information related to sexual health, which became a distinct reason for users engagement. Besides the benefits of diagnosing and treating advice for STDs, timeliness information is also an ascendancy for users who intend to gain more sexual-health related knowledge.

4.3.1.4. Information Completeness [Code 4]

Information completeness can be described as the degree to which the information source provides all necessary contents (Shen et al., 2013). The completeness of the information plays a significant role in the information quality (Wixom and Todd, 2005). Information completeness refers to information that is wide and in-depth and includes all the key components. Because the online environment does not allow for physical diagnoses, users who post sexual health related on OSHCs need a more detailed and comprehensive answer to help them make the correct decision regarding their illness or concerns.

'A one-sentence response, direct, subjective, and without any scientific basis is a bad response, and a simplistic response I don't like.' [ID 15, Page 5, Line 23-24, Age 28]

'We say the type of information and the amount of details and the whole conversation. I would say these are the main.' [ID 1, Page 10, Line 30-31, Age 32]

Although information cannot always be fully complete, every reasonable effort should be made to obtain the completeness of the information. A complete message should have the conditions of all the facts necessary for the decision-maker to solve the problem at hand using such information. A single sentence cannot always conclude the sexual-health-related questions, which completed information must be precise and in detail. As we have mentioned before, all health diseases should ultimately be confirmed by reliable laboratory tests only. However, the more complete the information provided, such as the analysis of symptoms and the judgment of behaviour, the more likely it is to help the questioner more effectively.

4.3.1.5. Information Understandability [Code 5]

Information understandability refers to the readability and ease with which users can understand what is being said to them. This includes the language used, and the semantic and lexical expressions used by reviewers (Wang and Strong, 1996). For information to be understandable, it needs to be readable and of good quality (Wang and Strong, 1996). With regards to health especially, whether the information provided is easy to understand is important because not everyone can understand all the specialist medical terms. A comment that has accurate grammar, precise words, and engages with the user's issue using understandable language is what users prefer.

'If the answer gives me a lot of Information in there and it does not use too much terminology, easy for me to understand.' [ID 4, Page 3, Line 24-25, Age 30]

'It means the users understand what is the word and the users can change to another word easy to for the someone don't have the background or don't have the knowledge about it to understand that.' [ID 4, Page 4, Line 16-18, Age 30]

The understandability of the information directly affects the effective transmission of the content. Within the sexual health-based online community, the extent of understanding the information mentioned by many participants, especially those who do not have a medical background. The information needs to be easy for them to comprehend to make correct decisions regarding their sexual health-related concerns. The information described with plain language with good writing and less professional medical terminologies or provided further explanation for the information that requires professional knowledge is preferred by users to adopt.

4.3.1.6. Information Uniqueness [Code 6]

There is no clear definition of information uniqueness, rather it is described as the kind of knowledge possessed by an individual belonging to the petitioning organisation's product, service, research, equipment, techniques, management, or other interests and its application in international markets. Otherwise, information uniqueness can be an advanced level of knowledge or expertise in an organisation's processes and procedures. In this research, information related to sexual health is considered to be the specific information people are seeking, namely from PrEp, the aforementioned OSHC. For example, finding out more information about a new medicine used in preventing HIV is, for some of the users, the main reason for the engagement with this community.

'Because when I started using this group, there was a lot of information we were sharing that wasn't really available anywhere else. Now the Information is available everywhere, people are talking about PrEp in every media source, news, or organization.' [ID 18, Page 1, Line 9-12, Age 48]

There are many Fakebook-based OSHC established, one of the reasons why the OSHC chosen by this study is the most popular is the uniqueness of the information provided. More specifically, the knowledge regarding PrEp was rare to be found anywhere on the internet except this online group. Unless a common illness like cold or flu, sexual health-related concerns are relatively uncommon. The unique and distinctive information added value to this OSHC, which users believe that their concerns can be more easily answered and effectively resolved, thereby increased the intention of engagement.

4.3.2. Theme 2. Information Quantality

Information quantity, which is also regarded as information volume, refers to how the quantity or volume of available data is appropriate for a task (Wang and Strong, 1996). Quantity in online consumer reviews research refers to the number of recommendations, whereas quantity in advertising research simply refers to the number of comments (Lee et al., 2008). According to Anderson and Sailsbury (2003), information quantity can predict users' behaviours because the greater the number of reviews, the better the sales of this product. Because consumers may not read all the reviews, they may consider only the product or service with a large number of replies (Chattrjee, 2001; Cheung and Thadani, 2010). Information quantity is regarded as a key motivation for positive eWOM; more comments increase the likelihood of receiving a high-quality answer. In the context of sexual health, due to the limitations of face-to-face diagnoses, a high number of replies is beneficial in analysing the different possibilities regarding the illness, which will in turn help solve sexual health-related concerns.

'Um, but if it's something that I know nothing about, for example, if in my mind, I know that we're not allowed to ship medication to Mexico with the courier and someone comes online that says 'you can ship medications to Mexico', I'm not just going to accept it. want more people to weigh in and say, yes, I've received medication, and this is how we did it. I think if it conflicts with my ideas, knowledge, then I'm not just gonna accept one answer.' [ID 18, Page 7, Line 31-33; Page 8, Line 1-3, Age 48]

This is important. Like I said before that I prefer to compare the answers between different users, if they give me the same answers, I will believe that the that's a correct answer. And if they give me different answers that maybe have some problem in there, the number of answers is important for me, let us assume if there have over five answers, it would be better for me to evaluate the quality of the answers.' [ID 4, Page 3, Line 19-21, Age 30]

The quantity of the information was argued has less importance under the content of online groups, such as the online brand community, where information quality is valued more by consumers. However, when it comes to online health forums, the quantity of information becomes an essential factor. More information received regarding one health-related concern increases the possibility of helpful information. Moreover, since sexual health-related concerns are less common, more responses indicate the universality of the problem, which is beneficial for diagnosing the conditions and reducing anxiety due to the suspicion of an unknown disease.

4.3.3. Theme 3. Social Support

Social support is defined as a verbal and nonverbal communication between recipients and providers that reduces uncertainty about the situation, the self, the other, or the relationship, and functions to enhance the perception of personal control in one's experience (Albrecht and Adelman, 1987). It also refers to an individual's experiences of being cared for, being responded to, and being helped by people in that individual's social group (Cobb, 1976). Although social support was found to be very helpful in dealing with stressful circumstances, it is also present in everyday occurrences within personal interactions (Barnes and Duck, 1994). Social support is generally categorized into five different support systems: informational support, emotional support, esteem support, social network support and tangible support (Cutrona and Suhr, 1992). Two types of social support have emerged in this study:

informational support and emotional support, which will be further described in the next sub-sections.

4.3.3.1. Seeking Informational Support [Code 1]

Informational support refers to the messages that include knowledge or facts, such as advice or feedback on actions (Ko, 2013). Messages can be advice, guidance, suggestions or any general information useful for the questioner, which always has the potential benefits of helping others to problem-solve (Langford et al., 1997; Wills, 1991). Users using the online sexual health community seek information-based support for their disease-related concerns. They hope to get information related to their illness, to help them understand their health status and make further decisions about whether to seek medical advice. This information could be the description of the type of sexual health-related disease and the corresponding symptoms and the information on treatment after diagnosis, for example.

'Mostly I was very concerned about sexually transmittable diseases, STDs. And I am not talking about HIV, I am talking about other things, I was reading some people talking about the usage of the Doxycycline for preventing STDs like PrEp, and this is the question that I asked.' [ID 12, Page 2, Line 22-24, Age 44]

'In the beginning, I had some questions, since there were people from the AIDS association in the chat groups, so we had a lot of answers, we could ask a lot of questions and had a lot of answers.' [ID 20, Page 1, Line 24-26, Age 66]

Information-based help refers to the message that contains the facts which can satisfy the questioners' needs. In this study, the informational help could be categorised into two aspects. The first aspect is seeking a diagnosis, which the questions were raised in response to concerns about the unknown sexual transmitted infections. The questioner wishes to obtain relevant information about the diagnosis, for example, by analysing the behaviour and deducing the STD(s) that may be acquired in combination with the symptoms. The second perspective is about seeking solutions, which the questioners are looking for detailed suggestions and advice regarding an emerging concern related to sexual health. Two aspects expect high-quality information provided, which enhances the motivation of engagement.

4.3.3.2. Providing Informational Support [Code 2]

There exist different forms of informational support In this current study, providing informational support emerged as coming from those users who are willing to help others by giving suggestions and recommendations related to the questioner's illness or concerns, helping to diagnose, or even just some tips for improving one's sex life. These responses were based on user's different educational levels, career backgrounds and various life experiences.

'Yeah, I post questions in relation to helping people understand informing and issues around PrEp and syphilis and sexual health. I generally tend to post in response to other people's questions. I rarely be the first person to ask a question. I will mostly be responding to a question or a comment that someone else has made.' [ID 16, Page 2, Line 1-3, Age 52]

'Now I'm more advising people when someone asks a question or has a comment, and then sometimes I write something about it, like someone asked if the site is trustworthy to purchase and if the PrEp sold there is reliable.' [ID 12, Page 4, Line 6-10, Age 44]

In contrast to seeking informational help, the intention of providing the information is also found as a motivation for users' engagement with the OSHC. This behaviour is mentioned by the members who have long-time engagement, the users with a medical background or working in sexual health-related organisations. These users are willing to help others by constantly replying to sexual health-related questions. The engagement with the OSHC is an interactive learning process, which after a period of engagement, the questioner tends to be more active in answering other users' questions by using the knowledge gained from this online community.

4.3.3.3. Seeking Emotional Support [Code 3]

Emotional support relates to caring, affection, concern, trust, intimacy, acceptance, encouragement, empathy, and sympathy (Slevin et al., 1996; Langford et al., 1997; Ko, 2013;). In online community content, emotional support is described as messages or comments that involve emotional concerns (House et al., 1988). In addition to simply seeking informational help, users who have concerns about their sexual health conditions are usually looking for emotional support especially after been diagnosed with a sexual health infection. Because of the uniqueness of sexually related illnesses, people can feel ashamed and embarrassed to disclose details, so they need encouragement and concern from other users which make them feel they are not alone in facing their illness.

'I think that I feel identified with people there, I think that people think the same way as me. So, I feel that by going there that I'm not alone in my thoughts and they're not the only one. So it's like a comfort of knowing that other people have the same fears, the same issues that some people are experiencing, the same discrimination in, or the same problems for…discriminated… even sexually because they are not very well seen because they like to have bareback sex.' [ID 12, Page 3, Line 19-22, Age 44]

'Um, I think when you read them, I think it's a reassurance they gave, I think that's probably the most important part. Um, yeah, that kind of emotional support that we're all…I think that's why people on their for me is that they're looking for some kind of emotional validation.' [ID 11, Page 5, Line 33-35, Age 33]

Unlike other online communities, OSHC users look for sexual health-related information and seek emotional support. Two reasons that motivated users to use the OSHC are reflected in the data. One is the concern about sexual health and the need for emotional support from other users to take diagnosis and treatment. Another reason happened to the users diagnosed with sexually transmitted diseases. Users are more likely to feel that they are not isolated and more confident to seek treatment through communication with other users who have experienced the same illness.

4.3.3.4. Providing Emotional Support [Code 4]

Like providing informational support, some users prefer to provide emotional support such as encouraging others who have been diagnosed with the same illness. They do this by sharing their experiences, their feelings, and the effectiveness of their treatment. Individuals can also feel that they become more valued by providing emotional support (Slevin et al., 1996).

Providing emotional supports also creates a positive vibe in the virtual group, which further stimulates engagement with the OSHC.

'The online forums have created a feeling of community around the world where people have been willing to give their time and help others and inform others in a way that I think is totally unique and hasn't happened in any other scenario.' [ID 19, Page 9, Line 35-38, Age 62]

'It is that kind of like emotional validation, you will see, and the people are going through similar things that…yeah, I think it just kind of reassures you that sometimes you do have like regardless of forgot to take PrEp, you still have those fears.' [ID 11, Page 2, Line 8-10, Age 33]

A few participants mentioned the intention of providing emotional support in OSHC. Different from informational support, emotional support requires less knowledge about sexual health. People diagnosed with STDs might be worried about losing control as their illness progresses, while encouraging someone to express their wishes about their care in advance can help them feel more in control. The concerns of HIV infection are widely discussed in this OSHC. Providing emotional support also improves the healing process and help questioners feel safe and more empowered with managing their treatment and recovery.

4.3.4 Theme 4. Fear

The source of fear is our own perception of danger (Merriam-Webster's collegiate dictionary, 2016). There is a physiological basis for this association: At the brain's base, there is an almond-shaped structure called the amygdala which is the brain's "fear centre" and plays a key role in identifying panic signals. Through sensational manifestations, certain behaviours or states associated with possible negative results which threaten and exert pressure on the target audience. This makes them realise the seriousness of their problem and experience the associated emotional reactions, such as insecurity or anxiety (Witte, 1992). Fear is an effective motivator; the stronger the fear, the greater the changes in attitude, intention and behaviour (Higbee, 1969). One of the important motivations for engagement with the online sexual health community is fear. Users fear getting sexually transmitted diseases and other negative outcomes such as being laughed at or suffering tough treatment processes, users desire more information from the community to solve their sexual health-related concerns. The theme of fear consists of three codes namely anxiety and loneliness, which will be stated in the following sub-sections.

4.3.4.1. Anxiety [Code 1]

According to the American Psychological Association, anxiety is characterized by tension, worried thoughts and physical changes like increased blood pressure. Anxiety is a direct product of fear – fear of a particular object can lead to immediate anxiety, for example, the fear of contracting HIV could lead to an anxious mood wherein the person may keep worrying about getting infected, which can further affect their daily life and emotions. Anxiety may even cause physical issues like sleep disturbances and mental instability. Thus, users receiving information from the community can be helped to address their illness correctly, ease their mind, and reduce anxiety.

'I could only recall like I ever asking questions about HIV, but that's not true, I've also asked about other STDs, but basically it is always almost always like I have had something that I thought might be risky.' [ID 8, Page 2, Line 21-23, Age 28]

'I check quite often, whether I have a paranoid of them, like if I've caught HIV, which is obviously a very common fear for a lot of gay men who are not playing responsibly, but checking my still look in, like what are the symptoms?' [ID 11, Page 5, Line 33-35, Age 33]

The difference between sexually transmitted infections and everyday illnesses such as colds and fevers are that the emotional toll of contracting an STD can be enormous. Most STDs can be easily treated, and even HIV is not a life-threatening disease if the appropriate treatment is operated. However, waiting for the test results can be agonising because of the anxiety about infection. OSHC brings together a variety of users with different experiences and knowledge regarding sexual health. Questioners' anxiety can be effectively alleviated by communicating with other OSHC users, getting valuable information regarding their sexual health-related concerns.

4.3.4.2. Loneliness [Code 2]

Loneliness is another manifestation of fear, which was defined very early as *'the absence or perceived absence of satisfying social relationships, accompanied by symptoms of psychological distress that are related to the actual or perceived absence…part as a response to the absence of important social reinforcements (Young, 1982, p. 380)'.* Unlike common diseases, sexually transmitted diseases (STDS) often cause people to feel excluded and unaccepted by everything around them, resulting in a great sense of loneliness. The outcomes of loneliness are incalculable; self-harm and suicide resulting from loneliness are not uncommon. Online sexual health community creates a chance for people who have concerns or who have been diagnosed with a sexually transmitted disease gathering together, provides a judge-free and supportive environment where people can speak freely.

'I got the feedback from people and said I has been feeling like I'm not all alone that when I have a question, and I think it's a weird question, it turns out a lot of people have the same question.' [ID 18, Page 5, Line 33-35, Age 48]

'I don't know. I think that I feel identified with people there, I think that people think the same way as me. So I feel that by going there that I'm not alone in my thoughts and they're not the only one.' [ID 12, Page 3, Line17-19, Age 44]

Not everyone experiences an STD diagnosis, and for those who are diagnosed, they can feel excluded and isolated because discrimination and stigma against sexually transmitted diseases make it difficult for those afflicted to talk about it. If it doesn't improve over time, loneliness will potentially cause more serious mental illness and can be a severe threat to the patient's health. OSHC has provided a platform for users to discuss the concerns of sexual health without worrying about being mistreated. Through engagement with the OSHC, users who have sexual health-related concerns find it easier to find others with similar experiences and thus reduce their level of loneliness as a result of being within the care of the group.

4.3.5. Theme 5. Source Credibility

Source credibility was described as the extent to which an information source is perceived to believable, competent and trustworthy by information recipients (Petty and Caciopo, 1986).

Source credibility has been found as an important motivation affect consumer's behaviour in the context of online community (Reichelt, Sievert and Jacob, 2014; Erkan and Evans, 2016; Djafarova and Rushworth, 2017). If most of the information attributed by a credible source, users are more willing to involve with this community, because the information they received could be transferred to their own knowledge (Ko et al., 2005). Three dimensions of source credibility were wildly researched named source attractiveness, source trustworthiness and source expertise. However, because the target online sexual community is mainly information and knowledge orientated platforms, source attractiveness emerged from the data. Thus, two codes found as source trustworthiness and source expertise are establishing theme source credibility.

4.3.5.1. Source Trustworthiness [Code 1]

As a dimension of source credibility, Hovland, Janis, and Kelley (1953) defined source trustworthiness as *'the degree of confidence in the communicator's intent to communicate the assertions he considers most valid (p. 21).'* In an offline environment, source trustworthiness can be found by the person's identification, career and education background. However, these elements are much difficult to prove because the user's personal profile could be faked. Source trustworthiness is described as how much information the receiver can put confidence on that attributes a source's motives to persuade users to adopt specific information and expertise emphasizes the synthesis of competence, skill, and knowledge-based on experience (Tormala et al., 2006). If users perceive the source as trustworthy, they will spend more time on this community to get more reliable information about their own sexual health conditions.

'Yes, and depends on the other people's choice of answer, because there is some reading or comments thumb up, I will also believe that if everyone thinks that the answer is more credible, and that he is reliable, I may trust him more.' [ID 15, Page 7, Line 8-1, Age 28]

'So, looking either at their Facebook profile or their previous postings or by seeing a trusted person, reference them and say, this is the person who is the director of whatever or this person runs this clinic in province town. So your answers are going to then have more weight than somebody else's.' [ID 10, Page 8, Line 26-28, Age 50]

The extent of the source trustworthiness is significant in an online community. However, the anonymity in the Internet environment and the personalised users' profile will lead to doubts about users' real identities in the circumstances of the health-based online community. It is not easy to distinguish the authenticity of the sources because the profile could be edit, where the users ensure the source identifications by looking at the past activities and the quality of the previous comments contributed by them. One respondent mentioned the information popularity indicates the trustworthy level of the source that the more times a message is liked, the higher the quality of the message and the trustworthiness of the information source.

4.3.5.2. Source Expertise [Code 2]

Another dimension of source credibility emerged from this study is source expertise, defined as *'the extent to which a source is believed to be capable of making valid assertions' (Hovland et al., 1953, p.21).* As the perceived knowledge, skills and experience of a reviewer, source expertise indicates the ability to provide accurate information (Ohanian, 1990; Senecal and Nantel, 2004). Same as source trustworthiness, the profile regarding a user's expertise may also be difficult to judge the authenticity. Thus, reviewing the context in the comments can help questioners decide the replier's expertise, an expert message considered completeness, factual and high quality. In the content of online sexual health community, the expertise of source highly influenced users' intention to involve with the community from anywhere else because they prefer to receive the information from the expertise of sexual health rather than someone who works out of sexual health area.

’It has to do with the person who answering the question. For example, he said he was a doctor, or he said he had worked in a clinic before, or he said his friend, or himself was a medical student, he had such a professional background or professional experience, this kind of support would make me believe his answer more.’ [ID 15, Page 6, Line 25-28, Age 28]

'I think it's really important, the most important. If a doctor says in my experience are they say in black and white or you should be doing this or you should not do that... then I would take that more.' [ID 8, Page 5, Line 5-7, Age 28]

Source expertise refers to the source of information is seen as knowledgeable about the topic of the message. In general, doctors are perceived to have higher expertise in providing medical-related information. Thus, users prefer to adopt the information associated with sexual health from the doctors or health practitioners who work in sexual health clinics because of the greater chance of obtaining accurate information. However, the sources' identity information can be personalised freely and is challenging to recognise. The quality of the information provided by the user is used to indicate expertise sources where high-quality information could reflect the profession of the information provider.

4.3.6. Theme 6. Convenience

Convenience could be simply described as the fitness or suitability of a kind of appliance, device, or service conducive to an act or fulfilling a requirement. Online retail and mobile retail have further increased the level of convenience by making it available anytime and anywhere. Convenience has been studied as a key motivation behind customer loyalty in online shopping, viewed as the degree to which consumers struggle to save time in their shopping (Thakur et al., 2016). In the current piece of research, we expand the definition of convenience from the interview results, and not only focus on saving time but also on the convenience presented through addressing language barriers, ease of access and saving costs, which are further described in the following sub-sections.

4.3.6.1. Language Barriers [Code 1]

'Language barriers' is a figurative phrase used primarily to refer to linguistic barriers to communication, namely the difficulties in communication experienced by people or groups originally speaking a different language, or even different dialects in some cases. People facing language barriers can be faced with huge inconveniences when seeking medical help: information could be mistranslated or misunderstood due to the language barriers. OSHCs solve this issue by unifying language into English, which is considered the most widely used language, thus increasing communication. Users are more willing to engage with this community because they do not need to be concerned about confusion due to the language barriers.

'I do think why not in my case, since I live in Mexico, and I don't speak a lot of Spanish, and so the language barrier would be a concern as well. So I obviously, if I do see someone face to face, I can use Google translator, whatever. But if I need to call someone, then it would be more difficult for me to communicate them.'. [ID 13, Page 3, Line 28-32, Age 29]

'In my specific case, I'm in a foreign country and in a very desert place in the countryside. So, it's easier for me to use forums in languages that I know and with people whom I trust.'. [ID 20, Page 4, Line 2-3, Age 66]

Language barriers can seriously affect communication effectiveness, especially when the conversation involves professional terminology, such as medical terms or medicine names. Due to language barriers, patients may delay consultation and miss the best time for treatment, with significant health consequences, while sharing the same language in a conversation is beneficial for enhancing trust. English is the only language allowed to be used in the chosen OSHC, which convenient communication by solving the language barrier and, therefore, attracting more users to engage with this online community.

4.3.6.2. Ease of Access [Code 2]

Traditional offline medical treatment system is restricted by many factors, such as time and space. In the OSHC, there is no need for a scheduled appointment, nor is there a time limit on doctor-patient consultations. The online sexual health community exists within a virtual environment, allowing users access without the traditional limits. Any device that can access the internet can fulfil user’s need for to seek convenient medical help. In addition, this improves consumer engagement with the online sexual health community.

‘Second point was, as I told you, the GP was not really available and I need to know what I am dealing with. Okay, so like even if it was something bad, I only have to know it after a week or so. So in this way, what's going on? What's going on? This thing is really helpful, at least. I mean it was in time, I think, and readily available.’ [ID 3, Page 2, Line 13-16, Age 31]

‘So I can't really visualize warrior, I don't know if I just show up with anyone is going to entertain me, if I could call them. Um, if they could understand what I'm asking, or the opening hours, like maybe I'm not free to actually go. But on Facebook, I can just do it 24/7.’ [ID 13, Page 4, Line 16-19, Age 29]

Limited medical resources were mentioned many times in this study. Participants expressed concern about the limited time for the consultation with their health providers. Due to the impact of COVID-19, NHS is under enormous pressure, which makes it more difficult to book appointments. Moreover, not all patients have sufficient medical knowledge and can well-understand the information related to their health concerns. Within a minimal consultation period, there is a complexity for patients to get a complete picture of their disease in the limited time available. With the advantage of staying active, OSHC greatly facilitates users to seek help anytime and anywhere, which users do not need to worry about limited consultation time and can then get a comprehensive understanding of their sexual health issues.

4.3.6.3. Saving Costs [Code 3]

Cost-saving not only refers to time, but to also energy and money. The existence of the online sexual health community affects people's decisions about whether they need to make an appointment with health practitioners or doctors. Based on the information provided by other users within this community, questioners can decide if it is necessary to go to hospital based on the severity of their conditions, or if their concerns can be solved through engagement with this community. The energy and money needed to visit a doctor can be reduced. It saves personal costs; it saves medical resources and reduces the pressure associated with taking medication by avoiding unnecessary medical treatment.

‘If I take the time to go to the hospital exclusively, just for the physical symptoms that I can handle by myself, it will be very time consuming and cause the abuse of medical resources, so the second benefit is to save me a lot of practice and energy is spent on unnecessary things.’. [ID 7, Page 17, Line 19-20, Age 25]

'Oh, yeah, because the hospital where I had to go was far away from my house. So it was easier and more convenient to ask questions using Facebook.'. [ID 20, Page 2, Line 19-29, Age 66]

The 24/7 availability of the OSHC provides excellent convenience for users seeking sexual health-related support, which also saves costs. The costs are not only related to the particular time and effort but also referred to the medical resources. Through the collective contributions of the online community members, the sexual health-related concerns could be quickly solved. Although all STDs ultimately require professional examination, the information in OSHC can help users make the most appropriate decision. Users can make more accurate medical decisions based on the severity of the condition discussed in the OSHC, thus reducing unnecessary costs, and reserving limited medical resources for patients in greater need.

4.3.7. Theme 7. Online Community Quality

There is no definition of online community quality in past studies. However, the importance of this term has emerged in this research. The data has confirmed that users' intentions with regard to engagement with the online sexual health community is closely connected to the online community's quality. The higher the quality of the online community as perceived by the users, the greater the possibility that users will engage with this community. Four codes emerged to describe the online community's quality: moderation system, profession verification, reporting tools and a code of conduct emerged to describe quality. Each code will be explained fully in the following sub-sections.

4.3.7.1. Moderation System [Code 1]

A moderation system is a method by which the webmaster chooses to sort contributions that are irrelevant, obscene, illegal, or insulting from contributions that are supportive and informative. The moderation system is important for online communities because users can post anything they want, meaning that each comment's quality contributes to the community's overall quality. A strict moderation system can ensure that posts or comments have a theoretical or factual basis, and their content will not adversely affect other users. Users prefer to engage with online communities which have a complete moderation system, to guarantee that the community's information is trustworthy and reliable.

'I know that I can report that comment or that person. I see the report function, or I can contact one of the moderators than flag the issue.' [ID 16, Page 8, Line 7-8, Age 52]

'This is very important to me that there's moderation on the forum that I usually go, this moderation is taking care of the group as a whole and they are also taking care of the people are allowed to be who they want to be, doesn't matter what their preferences are or if it's funny or kinky or whatever, but it's their preference.'. [ID 12, Page 5, Line 2-6, Age 44]

The internet provides an environment for people to speak freely where the users can express their opinions anonymously. However, not every user's behaviour and language can be standardised entirely, which a moderation mechanism should be established to supervise the online environment and ensure users' rights and interests from infringement. Users prefer to engage with a well-organised virtual community where they perceive safe and comfortable. Specifically, a well-managed moderation system continues operating in the OSHC researched in this study. As a science-based online community about sexual health, the information posted must be non-bias and up to date. Nine Moderators rigorously review every piece of information to ensure it is of high quality and professional.

4.3.7.2. Code of Conduct [Code 2]

A code of conduct refers to the principles, values, standards and rules that act as guidelines and have the overall benefit of the stakeholders in mind whilst at the same time respecting the rights of members (Tourani, 2017). An online community will attract more users when it has a clear code of conduct wherein each user can understand what kind of behaviour is acceptable.

You can't call people just respectful names. And that still comes up these days, that just came up the other day in a long thread about Coronavirus, which was I wasn't happy about. But we lost like five members in that group in that thread, because they're just so rude and mean and angry. [ID 18, Page 4, Line 3-6, Age 48]

'I think he's been to have a very clear code of conduct and that code of conduct changes and it adapts, and it's built upon, but a very clear code of conduct like if you're coming into this group, here's what is expected of you.'. [ID 16, Page 6, Line 14-16, Age 52]

Although the code of conduct may vary in detail, it should be available in every high-quality online community. The code of conduct is usually a set of basic requirements for the behaviour of community members and actions to be taken if community rules are violated. A code of conduct that governs each community member's behaviour helps improve the community's quality and attract more users.

4.3.8. Theme 8. Privacy Concerns

Privacy is regarded as an important factor affecting users' engagement with the online community (Murphy et al., 2014). The level of privacy concern for online community users usually depends on the level of information disclosure; the more intimate the disclosure, the greater the level of privacy concern (Sun et al., 2015; Shibchurn and Yan, 2015). Privacy concern is defined as the *'individual's subjective views of fairness within the context of information privacy'* (Malhotra et al., 2004). Privacy concerns are influenced by the type of information being offered; the most intimate information (such as an individual’s illness history and sexual health conditions) usually need to be kept strictly confidential because disclosing such information can result in serious outcomes. Regarding OSHC content, users can disclose their personal health information in exchange for health advice, for a health risk assessment, for disease prevention, or for medical advice. They can share their histories, their experiences, and feelings with patients who have experienced similar health problems. Thus, ‘privacy concern’ emerged as a key motivation in influencing users' engagement intention when considering sensitive topics, perceived stigma and perceived discrimination.

4.3.8.1. Sensitive Topics [Code 1]

There is no widely accepted definition of the term ‘sensitive topics’, although most researchers would probably agree that certain subjects such as income, sex, and religion, are definitely examples of the concept. The definition of sensitive topics is always affected by culture, religion, or specific social norms, so homosexuality for example, is generally more acceptable to non-Muslim cultures, making it difficult for some people from particular cultural or religious backgrounds to seek sexual health-related help in an offline environment. The online sexual health community allows people to discuss these sensitive issues within a judgement-free and guilt-free online environment, regardless of their gender, race, and religion.

'Ok, in the field of China, it is very sensitive to ask people questions about sexual life, so if you're on the forum, people don't know who you are, and then you ask, you get a lot of information, while protecting your privacy, because you're anonymous.' [sic]. [ID 6, Page 6, Line 20-22, Age 28]

'Because I think this kind of question is quite sensitive and private, so it can be controlled in my own, and all the acceptance is controlled by me.' [sic]. [ID 15, Page 11, Line 33-35, Age 28]

Although people are more open-minded than before, sexual-related conversions are still considered sensitive topics that are not easy to be discussed in public due to the concerns because an individual's privacy is potentially exposed. However, this phenomenon can be a hindrance to people who has sexual health-related needs. China was pointed out to elucidate the problem further, which due to the influence of traditional culture, specific sexual health-related services are not standard in most cities where individuals are challenging to find a place to consult the concerns about sexual health. OSHC has provided a platform for people to discuss various topics related to sexual health anonymously, without the concerns about their privacy being violated.

4.3.8.2. Perceived Stigma and Discrimination [Code 2]

Perceived stigma refers to an individual's fear that they will be subjected to negative societal attitudes because they have a particular trait (Scrambler and Hopkins, 1986), such as skin colour, IQ, sexual preference or a particular medical condition (Link and Phelan, 2006). Perceived stigma related to sexually transmitted diseases and HIV are stereotyped with undesirable characteristics like 'dirty'. This stereotyping is thought to be an important barrier against STD/HIV prevention (Cunningham et al., 2002). People who have been stigmatized may delay or deny their STD/HIV testing, which further hinders the immediate treatment once they have revealed their sexual history. The online sexual health community has created an opportunity for people who are concerned about their sexual health to communicate with other users in a safe environment where their privacy will be highly protected and they themselves will not be stigmatized.

Perceived discrimination is described as concentrating on patterns of dominance and oppression, viewed as expressions of a struggle for power and privilege (Marshall, 1998). In the manner of stigma, discrimination based on incorrectly labelling people, in this case, people who have revealed their sexual history or sexual health conditions. However, rather than simply remaining a negative or hypercritical thought, discrimination raises these judgements to a behavioural level, perhaps through physical movements such as punching or verbal abuse. In this online sexual health community, many users have the same experiences regarding STD infections or HIV diagnoses, and there is a strict moderation mechanism, so offensive comments and verbal abuse are relatively minor; in this particular OSHC, the discrimination rate is close to zero.

And online forums can attract people and responses that can often be quite stigmatizing and bullying and I certainly seen some quite polarized discussions that I always been very terrible careful. I have to say the PrEp facts forum in particular is very thoughtfully moderated that I always get it right. [ID 16, Page 2, Line 24-27, Age 52]

Because I have condom less sex with large numbers of partners and I have been diagnosed with STIs before. Um, I am not HIV positive, so I'm not personally affected by stigma against HIV, but it's still a lot of stigma against HIV affects HIV negative people as well. [ID 9, Page 8, Line 21-24, Age 28]

Due to it is a disease or problem related to sex, is a very sensitive topic in China, so some users have carried out language attacks on him, with words of discrimination and sarcasm. I feel bad!'. [ID 7, Page 18, Line 5-7, Age 25]

I've been accused of asking sex-related questions, especially when I ask for tips on how to have a better sex life, it may be a bit sensitive in China. When I ask such questions, some people will attack the character, they think ask such a question is wrong. When I asked how to have a better sexual experience, some netizens directly asked me whether I was a social worker (prostitute), which I think is discriminatory. [ID 6, Page 13, Line 6-11, Age 28]

Sexual health topics are sensitive because they are often associated with stigma and discrimination. For example, sexually transmitted diseases are often blamed on promiscuous sexual behaviour due to misperceptions. The concerns about stigmatisation and discrimination are severe obstacles to the confidence of people to pursue sexual health.

Patients may hide their sexual health status to avoid unfair treatment but may consequence worse health conditions. OSHC has developed a judge-free atmosphere where users do not need to worry about discrimination or stigmatisation and can recount their concerns in more detail. Furthermore, the occasional biased information will be corrected as soon as possible because of the strict moderation administration, which warrants a harmonious online community.

4.4. Outcomes of consumer engagement towards the online sexual health community

Four themes have emerged in this study regarding the outcomes of consumers' engagement with the online sexual health community: health empowerment (4.3.1), entertainment (4.3.2), and networking (4.3.3) will be further introduced on the following sub-sections.

4.4.1 Theme 1. Health Empowerment

Health empowerment was described as an individual's awareness of the ability to participate knowingly in discussions around health and healthcare decisions (Shearer, 2004). Health empowerment was found to be a key outcome after an individual had engaged with the sexual health community. This sense of empowerment was stated as one of the important benefits of using this community. The following sub-sections will describe the four key codes of this theme: knowledge accumulation, confidence in treatment, and preparation for doctor's appointments.

4.4.1.1. Knowledge Accumulation [Code 1]

Knowledge accumulation can be described as a process wherein one individual share their knowledge with others, and as such the knowledge accumulates, which could result in a new learning process (Magali, 2017). The online sexual health community allows users to communicate regarding their different sexual health concerns accumulate more knowledge therefore unconsciously improving their cognitive level. Users will take forward this knowledge to better understand, master and empower their health conditions in terms of sexually transmitted diseases.

'So, after reading the forum and the questions, I felt that I'm more experienced, also my knowledge has increased. And this is Information that I got, which is more valuable than the Information I got from the health practitioners in my country. I would say, yes, I am much more knowledgeable.' [ID 12, Page 5, Line 18-21, Age 44]

'But actually, lots of the interactions are really quiet in depth. And you can get a lot of Information, even if you're not participating in that discussion. So, it's not just the beneficiaries. The benefit of intervention isn't just the person who's typing. The beneficiary of the Information includes anybody else who's engaging and reading that interaction.' [ID 16, Page 3, Line 30-133, Age 52]

Due to the enormous information contributed by the OSHC members, one obvious consequence is gaining more knowledge about sexual health. Community members do not necessarily need to post or comment, but knowledge about sexual health accumulates by simply browsing. Moreover, participants in this study mentioned that the knowledge gained from this OSHC is more valuable than the information from their health providers because OSHC members provide scientific facts from Google and their own experiences, which make the information estimable. As the duration of engagement grows, users accumulate knowledge continuously and change from the initial questioner to the responder by using the knowledge acquired in the OSHC.

4.4.1.2. Treatment Confidence [Code 2]

In terms of the treatment, STDs and HIV are not like the more standard diseases commonly understood by individuals. Sexually transmitted diseases are much more complicated and often perceived as life-threatening, leading people to believe that curing them is a challenge. The online sexual health community provides a chance for people to interact and talk with others who have experienced the same sexual health issues and diseases, thus giving the questioner a more secure grounding in the treatment available.

'Because he has suffered the same illness as me, and he was successfully cured, I can use his treatment method, and his successful treatment of the case makes me more confident to face the disease.' [sic]. [ID 7, Page 10, Line 25-27, Age 25]

In addition to accumulating knowledge, the information received from other users is also mentioned as the advantage of building confidence in the diagnosis and treatment related to sexual health. On the one hand, resistance to screening for sexual health conditions comes from misconceptions about sexually transmitted diseases within a judge-free online environment. Users can speak out the sexual health-related concerns and get encouraged by others to take the diagnostic. On the other hand, due to the unfamiliarity of sexual health conditions, patients are more likely to perceive STDs as severe diseases and difficult to cure. By referencing the other users' successful treatment experiences, the confidence in curing and managing their sexual health conditions grows.

4.4.1.3. Preparation for a Doctor's Appointment [Code 3]

According to the NHS (2018), patients can wait up to four hours to be seen, only to have approximately seven minutes with their assigned doctor. Patients may also face difficulties in understanding the medical terminology that the doctor uses. Users who engage with online sexual health communities can benefit from the information offered by other users within the community and this will help them better prepare for their appointment and will help their communication with their doctor. Because there is no time limit in the online communities, patients can take the time they need to properly process the information presented to them better understand what the doctor has said.

'Obviously, but it's quite nice because they do present in quite a practical way, and then it's quite healthy. Then you can bring up these examples when you talk to your health professional.' [ID 11, Page 4, Line 21-23, Age 33]

'If my health problem is not very serious, then I can save the time to see the doctor, but if my health problem is more serious, then before I go to see a doctor, the response from users of this forum allows me to get at least one psychological preparation, so as not to panic when the doctor tells me the situation.' [ID 7, Page 17, Line 11-14, Age 25]

The engagement with OHSC was found to help prepare for a doctor's appointment. As earlier mentioned by the other participants, the consultation time with the health providers is minimal, which most patients who do not have enough knowledge about sexual health cannot fully understand their health conditions but completely follow the doctor's prescription. During the period of engagement with the OSHC, users can obtain various suggestions from other users based on their experience and discuss with their doctor to get a clear idea about their health concerns and find the most appropriate treatment. A unique benefit was mentioned by one of the interviewees that if the questioner's description or body symptom indicates a potential risk of contracting STDs, from the comments of the other OSHC users, the questioner will be better prepared psychologically to face the unpleasant test results, much easier to accept and hold more faith in a successful treatment.

4.4.2. Theme 2. Entertainment

Entertainment was studied as a key factor that influences users' intention to engage with the online brand community (Andre, 2015; Lin & Lu, 2011; Chen et al., 2013; Gao and Feng, 2016; Hollebeek et al., 2019). Previous research has shown there to be four main contexts of 'entertainment': relaxation or escapism, having fun and passing the time (Muntinga et al., 2011), inspiration and mood management (Heinonen, 2011), and enjoyment (Whiting and Williams, 2013). Unlike with previous findings, in this study entertainment has emerged as an outcome factor, established with two codes: emotional relief and sexual satisfaction.

4.4.2.1. Emotional Relief [Code 1]

Users who are concerned about their sexual health always feel the burden of their concern and the potential negative outcomes equated with them. However, with online sexual health communities, users who engage with those communities can find a sense of relief when they bring up their own concerns regarding their sexual health. This type of community is unique because other users who also engage with the community can inform those with the concerns that their sexual health diseases are not a death- sentence, because they have their own personal experiences to draw upon. Thus, they can guide and inform others.

'This will allow me to calmly deal with my health problems. So, I feel that using the health forum not only solves health problems, but also seeks a kind of psychological comfort.' [sic]. [ID 11, Page 5, Line 17-19, Age 33]

'The things I think are most important to me because they not only really changed about protecting the body from HIV, but they're really about addressing the mind and the heart.' [sic]. [ID 18, Page 7, Line 2-3, Age 48]

The diagnosis of STDs can not only depend on the information contributed by the OSHC members because the assumption is mainly based on the questioner's description, which only can only serve as a reference. The final testing result from the lab is the only definitive confirmation. However, the informational help and the emotional support regarding the worry about sexual health received from the OSHC can help relieve user pressure. The emotional relief was highlighted by most of the participants as a significant outcome of the engagement with OSHC.

4.4.2.2. Sexual Satisfaction [Code 2]

Sexual satisfaction has been defined as *a sense of enjoyment or satisfaction with one's sexual life [and] is a highly personal sentiment greatly related to an individual's past sexual experiences, current expectations, and future aspirations'* (Davidson, 1995, p. 237). Online sexual health communities provide information regarding diagnosing, treating, or curing sexual health-related illnesses and offering guidance for a better sexual experience, such as extending the duration of sex with a better performance.

'Of course, and my sexual life has improved dramatically.' [sic]. [ID 5, Page 5, Line 26, Age 28]

'But when I post the questions, it was really are looking for Information, like trustworthy and reliable information that can help me to have a better sexual life, so trustworthy and reliable Information, yes.' [sic]. [ID 12, Page 3, Line 28-31, Age 44]

The classification of sexual health is not limited to STDs free, but also the possibility of having pleasurable and safe sexual experiences. Sexual health-related topics posted in the

OSHC are not all about STDs, which the concerns regarding a better sexual quality are always discussed. It is not very comfortable to discuss it in daily life as a sensitive topic due to privacy concerns. OSHC allows users to speak anonymously, and through discussions with other users, questioners can apply the advice to achieve a better quality of sexual life without fear of identity being revealed.

4.5. Conceptual Framework

This study aims to determine the factors that motivate consumers to engage with OSHC and the outcomes of this engagement. This fills the previous research gap by developing a conceptual framework emerging from the data analysis with eight motivations and three outcomes of consumer engagement with OSHC. This conceptual framework is presented in Figure 4. below.

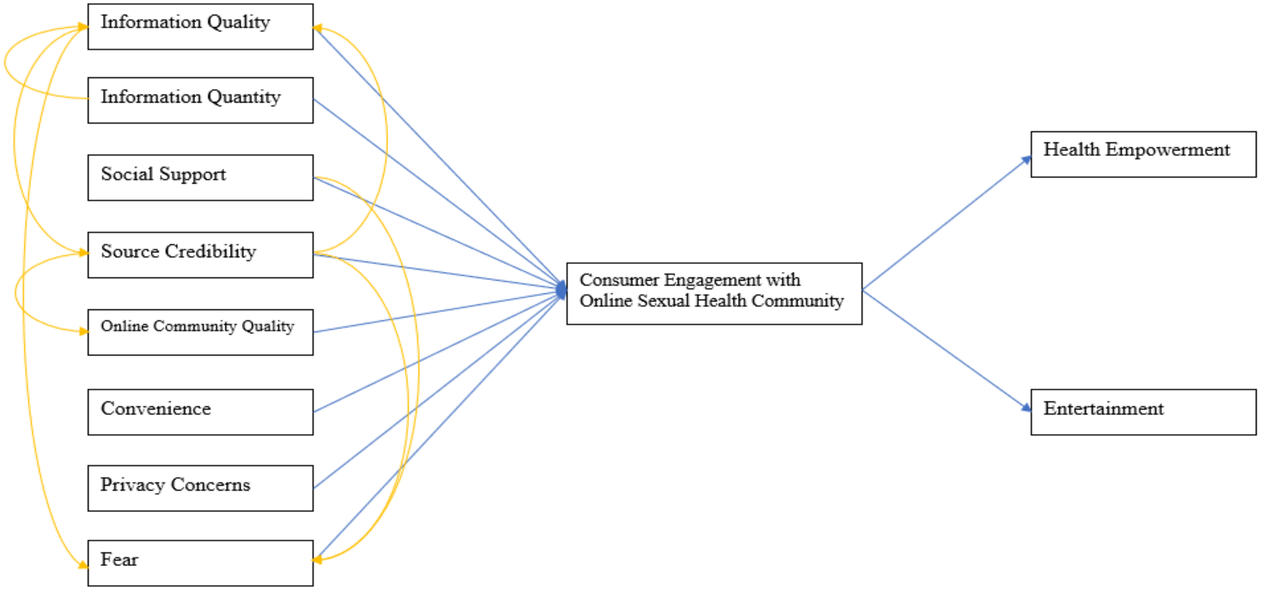

Figure 4. Conceptual Framework

4.6. Chapter Summary

This chapter has presented the research methodology and findings for this study. From the evaluation of validity and credibility, eleven themes are confirmed from the qualitative interview research, eight of which are motivation factors and three are outcome factors. Each factor was detailed, introduced and analysed while the thematic map and coding framework were also provided, followed by the conceptual framework emerging from this study, which is presented at the end of this chapter. The next chapter will discuss the results by combining the findings from the interview data and related literature.

CHAPTER 5. DISCUSSION

5.1. Chapter Overview

This chapter presents the qualitative findings from the current study and provides a complete argument to answer the research questions, combining the previous literature relating to consumers’ online community engagement. This chapter begins with the motivations behind consumer engagement with the online sexual health community, followed by consumer engagement outcomes in section 5.3. Moreover, the potential relationships between some of the motivations will be introduced in section 5.4. A chapter summary is provided in section 5.5.

5.2. Motivations of consumer engagement towards online sexual health community

5.2.1. Information Quality

Information quality emerged as the prime motivating factor for consumer engagement with the OSHC. Bhatti et al. (2000) outlined that the fundamental function (of an online community) is to provide information. The majority of consumers within the online community are information consumers (Simon and Tossan, 2018). The quality of brand-related information was found as a determining factor in consumer engagement with online communities (Dessart et al., 2015). A virtual community is composed of a group of people who communicate, interact, access, share and transfer topic-related experience and knowledge supported by information technology (Kim & Son, 2009).

Information quality is defined as ‘a consumer's perception of product and company information based on a set of judgment criteria that cover accuracy, relevance, helpfulness, up-to-datedness, and square measures' (Ou & Sia, 2010, p. 918). Information quality must meet the objective of a specific activity (or query) if the online community's information is to reach consumers' expectations. Thus, consumers’ intention to engage with this community is increased (Roberts, 1988; Eppler, 2006; Liu et al., 2017). The slogan 'content is king' was first detailed by Huizingh

(2000), and emphasised the importance of information quality for consumers to judge the performance of a company's website and further attract more online consumers (Cao et al.; Day, 1997; Huizingh, 2000; Iyer, 2001; Katerattanakul & Siau, 1999).

Information quality has been found to be one of the key motivations stimulating consumer engagement with an online community and strongly influences their behaviours (Goh et al., 2013; O'Brien and Toms, 2008; Dolakai et al., 2009; Reitz, 2012). High-quality information based on a consumer's real experience maintains a long-lasting relationship between consumer and community, further enhancing their willingness to engage (Dessart et al., 2015). On the contrary, inadequate information means users have to spend more time searching for the answers they need, and this disrupts their engagement (Gu et al., 2007). High-quality information that provides useful content for solving an issue, the more willing they are to engage with the community in order to obtain more information related to their needs.

There have been a number of studies relating to the dimensions of information quality. Mckinney et al. (2002) listed six dimensions of information quality: reliability, objectivity, value-added, timeliness, richness, and format. Wang and Strong (1996) state the dimensions of information quality as: value-added, relevant, timely, complete and extensive. Of all the dimensions that were studied, up-to-date, relevant and accurate information was found to be the most important element influencing online consumers' behaviour (Au et al., 2008; Watts and Zhang, 2008; Jang et al., 2008; Cao et al., 2005; Ou and Sia, 2010; Zhang and von Dran, 2000; Dholakia et al., 2009; Zheng et al., 2013).

However, all the information quality dimensions came from an information system user’s viewpoint. In this study, the emphasis is on consumers and, in particular those with queries about sexual health. This study investigated the dimensions of information quality in the context of the online sexual health community. Six dimensions emerged from the interview data: information accuracy, information relevance, information timeliness, information completeness, information understandability, and information specialty. Information understandability and information ***uniqueness*** are newly emerged dimensions.

‘Information accuracy’ can described as the information provided being correct, unbiased and trustworthy. Unlike other online communities, health communities take greater responsibility in terms of the accuracy of information offered. This is because false or inaccurate information may delay the diagnosis and treatment of patients, thus causing potentially serious outcomes. Users are open to receiving replies containing high-quality information, such as an accurate description of symptoms and infection window for syphilis. Highly accurate information indicates a good quality of information, which motivates the consumer's intention to engage with the online sexual health community.

'Information relevance' is described as the extent to which the answer provided matches the question posed, or whether it satisfies the needs of the questioner. Highly relevant information can help users save their time and costs because the answer targets the questions directly, thus further enhancing their interaction with the OSHC. Due to the difference in people's sexual history, users' sexual health concerns may differ. Therefore, answers should be very relevant to the question raised and based on a user's individual circumstance. The most relevant information can help users find the answer much quicker and more comfortably, thus increasing their willingness to engage with the OSHC.

'Information timeliness' was found to be an essential element when considering information quality Information timeliness means that the information given is up-to-date and offered in a timely manner. Users in the online sexual health community want to access the most current information available. For example, a new medicine for the treatment of HIV can potentially have a life-changing result in terms of the patient suffering fewer side-effects in their treatment. Therefore, ensuring the information provided is always renewed, strengthens the relationship between the users and the community, thereby increasing the former's desire to engage.

'Information completeness' regards the inclusion of the most critical elements within a response. Rather than a simple 'yes' or 'no' answer, users prefer to receive comments with in-depth information. In terms of helping people diagnose an STD, the more information provided (such as an evaluation of the possibility of a person getting infected by analysing their behaviour), combined with factual evidence or links to professional citations, the more motivated users will be to engage with this community.

'Information understandability' was an essential dimension to information quality, especially with regards to the content of the OSHC. Information understandability refers to the ease with which a user can read and understand the OSHC content. It considers the detail of the vocabulary, the grammar and verbal expression. Unlike other online communities, the online sexual health community, because of the specific nature of the knowledge conveyed and discussed, a greater degree of attention is required regarding how words are used in descriptions and responses. Users favour seeing answers that can describe a complex STD in a simple and understandable phrase, for example using ‘HPV vaccination’ instead of 'quadrivalent vaccination'. The more understandable the information, the more satisfied the users, and the greater their engagement with the OSHC.

‘Information uniqueness’ has emerged from this study. It is viewed as the specific of the information adopted by this specific community. A number of participants pointed out that they use this online community because it contains the newest information relating to PrEp. Therefore, information uniqueness can be viewed as another critical dimension to information quality which directly influences engagement with this online sexual health community.

All six key dimensions found within this current study constitute key motivators for consumers to engage with the online sexual health community.

5.2.2. Information Quantity

‘Information quantity’ is a relatively newly found motivating factor in the study of online community engagement. Information quantity has been studied in online consumer reviews and can be described as the number of replies to one question posted in the online community (Wang and Stong, 1996). The quantity of reviews refers to the popularity of the answer, which could be useful for reducing risk (Chatterjee, 2001). In this study, information quantity is described as the number of comments regarding one question posted by users engaged in this online sexual health community. Interestingly, one participant pointed out that a higher rate of replies increased the likelihood that the answer given was the correct one. In the sphere of online sexual health, those posing questions like to receive more answers, and answers that can help reduce their anxiety. Those posing questions feel that the greater the rate of similar or same answers means there is a higher possibility that the answer is correct. Having confidence in a correct answer can further help the questioner solve their concerns seek immediate treatment. Therefore, information quantity was confirmed as another motivation behind consumer engagement with the online sexual health community.

5.2.3. Social Support

‘Social support’ is considered a significant, influential factor regarding why users engage with online communities (Huang et al., 2010; Obst and Stafurik, 2010; Shaw and Gant, 2002). Social support is described as an experience in which individuals receive care, help, and respond to other people within a social group (Cobe, 1976; House, 1981). Social support from others was found as a motivator for community engagement because it can help reduce the stress (Barnes and Duck, 1994). Social support can generally be viewed as *providing* social support and *seeking* (receiving) social support. The support may not have a real benefit or take a decisive role, but kind and positive feedback can make the receiver feel better. Laurenceau et al. (1998) found that users are more willing to engage with a community if it can provide adequate social support.

Social support is a multidimensional construct regarding different the different contexts in which we consider it (Madjar, 2008; Sabherwal et al., 2005; Xie, 2008; Wang et al., 2014). There are four main types of social support: informational, emotional, instrumental and appraisal support stated by House (1981). Sabherwal et al. (2005) categorised social support into two types: ‘intangible support’ which refers to informational support and emotional support, and ‘tangible support’ such as money or material support, especially useful when people are facing health stresses. Studies about social support within the online health community's content viewed this concept in three dimensions: informational support, emotional support, and companionship (Bambina et al., 2007; Keating, 2013). Considering the background of this current research in terms of the online sexual health community, wherein the primary function is to provide an opportunity for communicating sexual health concerns, tangible support is barely mentioned in this here. Informational and emotional support were positively stated by participants who were providing or seeking social support.

‘Informational support’ is described as providing messages containing recommendations, suggestions, advice, knowledge, or any information that can help solve problems. Emotional support tends to provide messages that involve care, empathy, understanding, or anything that can be defined as emotional (Taylor, 2004; Ko, 2013). Regarding sexual health, a sexually transmitted disease may be perceived as incurable and chronic. Users who provide correct information can help questioners resolve their concerns whilst respecting the user’s respect and reputation. Users who provide emotional support always convey an atmosphere of harmony, perhaps their empathy or benevolence leads them to engage with the online community. When they see other users asking for help, they are willing to offer emotional support by referencing their own experience in order to encourage the questioner and to provide emotional support. With sexual health-related concerns, users can often feel lonely or desperate, and emotional support can be very encouraging. In this study those seeking support featured more than those providing support, which reflects Wang et al. (2014) 's research that users who are more active in engaging with an online community are 'seekers.

This study found that there were two different behaviours regarding the two types of social support: the provision of informational support, seeking information support, providing emotional support, and seeking emotional support. The theme of social support was found to be a key motivator in a user’s intention to engage with the OSHC.

5.2.4. Fear

As a psychological term, fear has barely been studied in the context of consumer engagement with the online community. Fear refers to the state of panic and emergency caused by people or animals in the face of real or imaginary danger and by things they hate. Fear is a kind of self-defence mechanism for human beings. From the perspective of psychology, because we do not know the unknown, we can only rely on the data and knowledge gained from our past experience to analyse such things, and when we cannot get a correct understanding of them, psychological problems arise. In previous studies, fear was found to be a motivating influence on people's attitudes, their intentions and their behaviour (Higbee, 1969).

Fear was found to be one of the motivating factors in this study which stimulated a user’s intention to engage with the online sexual health community. OSHC users feel frightened of getting a sexually transmitted disease, because of the long, painful treatment process associated with some STDs, the cost of the illness, and the impact on their jobs and careers. Due to the specific nature of sexually transmitted diseases, individuals with relevant concerns also fear being exposed to other and judged by them. Because of the fear, consumers need a place to resolve their concerns and the online community provides an opportunity for every user who needs help regarding their sexual health. to interact with other users they can exchange information, receive care, and encourage others who have the same concerns. This has the effect of decreasing their levels of fear. Three dimensions of fear were found from the interviews: anxiety and loneliness.

Anxiety is described as a negative emotion caused by fear of the unknown. It is well-known that most sexually transmitted diseases are acquired through sexual activity, but a small number of sexually transmitted diseases can be acquired through physical contact – syphilis for example. Moreover, unlike a cold or 'flu, in most cases, the symptoms that follow infection are mild and easily ignored, or not noticeable at all, the symptoms of an HIV infection are very similar to influenza. However, it is not common nor easy to find a sexual health clinic in some countries, like China for example. This is due to people's religious beliefs and traditional ethical beliefs. Furthermore, they are anxious about the diseases themselves and the negative impact on themselves after being diagnosed. By engaging with the OSHC, reading the various information and the experiences of other users, many felt that their uncertainty and their degree of anxiety was reduced.

Another undesirable emotion triggered by fear was found in this study: loneliness. Loneliness is viewed as a type of fear that arises from a lack of contact or communication with others, or a fear that the individual may lose contact or communication with others in the future. The factors behind loneliness are various and include social, psychological, emotional and physical factors. The degree of loneliness was also found to be tightly connected to the level of an individual's social connection (Weiss, 1973). Loneliness has been studied regarding branded communities in relation to human's need to belong (Snyder and Newman, 2019). In this study, loneliness is understood as a fear of isolation because of different sexual orientations, unique sexual behaviours or the diagnosis of an STD. Loneliness drives the desire to engage with the online sexual health community because of the urge to identify with others. Most users in this OSHC identify in similar ways, so engaging with the community is beneficial to them in terms of increasing their sense of belonging and decreasing their fear of loneliness.

5.2.5. Source Credibility

As a widely studied factor, source credibility is viewed as the degree of information which recipients perceive is believable, competent and trustworthy (Petty and Caciopo, 1986). The greater the credibility of the source, the more significant a user’s changes in behaviour and belief than with a low credibility source (Petty and Cacioppo, 1986). Source credibility was found to be an essential factor affecting users’ behaviour in the context of the online community. For example, the influence source credibility has on purchase intention (Nekmat and Gower, 2012; Zhang et al., 2014), information adoption (Sussman and Siegal, 2003), and information usefulness (Chen et al., 2014; Filieri, 2015; Lopez and Sicilia, 2014a: 2014b). The most well-known three dimensions of source credibility are source trustworthiness, source expertise and source attractiveness (Ohanian, 1990). Source attractiveness was not mentioned by the participants in this study due to the targeted online community being primarily an information exchange and problem-solving platform.

Source trustworthiness is described as the receiver's level of confidence that the most valid information is being provided by the sender (Hovland et al., 1953). If the information evaluated as honest, valid and to the point, the source will be considered trustworthy (Hovland and Weiss, 1951). In this study, users' information can be customised by themselves; it is hard to find out if the user's information is real or fake due to the online environment's background. Therefore, source trustworthiness was viewed as the degree of authenticity regarding the information provided. Furthermore, information is seen as more authentic if it is based on user's real experience. For example, many users are not very clear about the symptom-window for syphilis. If the answer they receive is from a user who has been infected with syphilis, then his/her personal experience will help the questioner determine whether they are infected based on their physical symptoms, therefore the source is perceived as being credible and trustworthy.

Another aspect of source credibility was also mentioned by the participants: source expertise. This refers to the degree to which the source is believed to provide valid information based on their education, career background and social level (Hovland et al., 1953). As well as source trustworthiness, the expertise mentioned in the source's profile can be customised; this can be indicative that the source’s expertise will be reflected in the information they provide. Regarding sexual health information, one participant mentioned that an expert source should provide traceable information that can be cross-checked for accuracy or they should reference evidence, for example for the infection window for HIV infection. The professional nature of a source's language and terminology they use also indicates their expertise level, providing further evidence of the source's credibility.

Source credibility was seen as a motivating factor for consumer engagement (Yang et al., 2010; Tsai and Men, 2013). However, it showed no significant influence on consumer engagement, especially when the users were seeking information. Source credibility was found as a motivator for consumers' attitude and behaviour change in the context of the online health community; the higher the perceived level of source credibility, the greater the possibility that users will adopt information from the message (Kareklas et al., 2015). Major and Clomen (2012) studied the effectiveness of the HIV/AIDS message provided by credible sources among young African Americans. The results show that messages from physicians are the most effective source for delivering HIV/AIDS-related information. In this study, source credibility is an essential motivation for consumer engagement with the online sexual health community. The higher the level of perceived credibility, the greater the chance of resolving sexual health concerns, which in turn influences the consumer's intention to engage.

5.2.6. Convenience

Convenience can be defined as *a reduction in the amount of consumer time and energy required to acquire, use, and dispose of a product or service relative to the time and energy required by other offerings in the product/service class'* (Brown & McEnally, 1992, p. 49). Convenience is found to save consumers cognitive, emotional and physical activities while purchasing, detailed in the time and effort saved by customers in the context of online shopping (Jiang et al., 2013; Berry et al., 2002). Convenience can lead to positive outcomes after consumer engagement such as an increase re-purchase intention, customer satisfaction and positive word-of-mouth (Seiders et al., 2007; Berry et al., 2002; Colwell et al., 2008).

Convenience has been studied as an essential motivator which affects consumer engagement behaviour (Van Doorn et al., 2010; Morris, 2016; Bazi et al., 2020). Because of the customer's cost of time and effort determines the customer's level of engagement with the community, the more convenient the online community is perceived to be, the greater the user's willingness to engage. In this current study, convenience is reflected via three perspectives: addressing language barriers, ease of access and cost-saving. Addressing language barriers reduces misunderstanding and confusion about the sexual health information provided. Agreeing to use English as the language of communication in online communities facilitates the transmission of information, improves the effectiveness of communication, and thus promotes users' willingness to engage.

Ease of access breaks the traditional way of gathering seen in offline communities by providing via an internet connection every user with a communication platform free from time and space restrictions. There is no requirement for a specific electronic device, whether it is a computer, tablet, or just a phone, as long as there is an internet connection, users can engage with the online community at any time when they need help with sexual health-related concerns or they simply need to obtain knowledge. Ease of access also improves the degree of convenience when using the community, further motivating the community's behaviour.

Saving costs refers to saving users' time, energy, or efforts by enjoying the convenience of the online community outlined in the previous paragraph. From the interviews, this study agrees with the previous research regarding saving money and time. Moreover, saving costs also refers to saving the cost of public and medical resources. One participant mentioned that if the online community could solve her concerns, there is also a significant saving on medical resources for minor problems that can be resolved without going to hospital. If unnecessary travel can be reduced, then the environmental pollution caused by transportation can also be relatively reduced. All three elements constitute the theme of convenience, which is considered another key motivation for consumer engagement with the online sexual health community.

5.2.7. Online Community Quality

Online community quality was first discussed in this study in the context of consumer engagement with an online community. It emerged as a significant motivation for every participant interviewed with regards to engaging with the OSHC. Online community quality refers to a detailed description of an online community that users want and are willing to engage with. It is an essential component of an online community that users are happy to engage. If an online community obtains the necessary factors for users' intention of engaging will also be improved accordingly. Two components of online community quality emerged from this study: the moderation system and code of conduct.

Most of the participants mentioned the administrative moderation as a necessary element that an excellent online community should have. Controlled by a few key members of the community, a moderation system works by reviewing every post and comment to ensure that the content of the message does not have any negative impact on other users, such as incorrect or inaccurate information, comments with discriminatory and abusive content, and posts unrelated to the online community. Because the internet gives users absolute freedom of speech, a strict regulatory regime can effectively filter all worthless information, creating a more harmonious and high-quality online community, which users desire to engage with.

Codes of conduct refer to the basic rules that every user must obey while engaging with the community. Community members' actions strictly follow a set of precise requirements, including what behaviours are allowed and the outcomes of breaking the code of conduct. An online community with a clear code of conduct is perceived as high quality wherein consumers have a greater desire to engage, because of the overall benefits to all users in terms of exchanging information related to sexual health.

Online community quality is newly mentioned in the study of online community engagement, and its importance as a motivator cannot be ignored. High-quality online communities can provide more help to the users who have concerns which need to be resolved compared with low-quality online communities, such as communities lacking in management and community principles. The higher the quality of users' perception of the online community, the higher their motivation will be to engage with the community. Therefore, online community quality was confirmed as a significant motivation for consumer engagement towards the online sexual health community.

5.2.8. Privacy Concerns

Privacy concerns are considered as one of the essential factors in the context of online activities. Collier (1995) argued that people's concerns about privacy are increasingly attributed to the development of information technology, which further explains that information processing technology is increasingly capable of processing users' personal information. However, such ability is beyond users' knowledge and control, thus posing threats to users' privacy, and users' concerns about personal privacy which will affect the credibility of social media, in turn manifested in the negative impact of increased uncertainty and vulnerability regarding users' willingness to use social media (Malhotra et al., 2004; Barney and Hansen, 1994; Connolly and Bannister, 2007). Although different users have different levels of privacy concerns based on the sensitivity of the information they share, concerns around disclosing personal information within an online environment regarding on one's health conditions are always considered as a priority. The disclosure of otherwise private health issues can cause damage to personal interests and reputation, which affects intent to interact with an online platform (Mothersbaugh et al., 2012).

The theme of privacy concerns consists of three crucial elements: sensitive topics, perceived stigma, and perceived discrimination. Sensitive topics are specifically referring to information and knowledge regarding sexual health, which is extremely important in users' privacy concerns. Sexual health-related information is considered to be more sensitive than general health information. Due to the influence of race, culture, and other factors, sexual health-related privacy exposure puts patients in a risky position wherein they may face judgement, ridicule or even prejudice. The online sexual health community provides a platform where users' sexual health-related privacy is highly protected, where users do not need to worry about adverse outcomes caused by disclosing personal sexual health information. Thus, users will be more comfortable in engaging with the online community.

Perceived stigma and perceived discrimination are derived from an incorrect or biased perception regarding a particular trait (Scrambler and Hopkins, 1986; Link and Phelan, 2006; Marshall, 1998). Where discrimination has moved from a cognitive dimension to a behavioural dimension it can be seen in verbal insults or physical attacks. An online sexual health community gathers together a group of users who share the same traits regarding sexual behaviour, sexual orientation and sexual diseases. Therefore, the possibility of being stigmatised and discriminated by other users is near zero. Consequently, users' intention to engage with the online community increases because there is no discrimination and stigmatisation, and their privacy is highly protected. Thus, this study believes that privacy concerns act as another critical motivation for users' engagement in online sexual health communities.

5.3. Outcomes of consumer engagement towards the online sexual health community

5.3.1. Health Empowerment

One of the most critical consumer engagement outcomes towards online sexual health community was found to be health empowerment. Empowerment was described earlier as a process by which individuals, organizations or communities gain mastery over their affairs (Rappaport, 1987). Because this process is not only about the people changing, but also concerns changes to their environment, organization or system, thus the definition for empowerment can be viewed as a complex process wherein individuals work together in order to control events that affect their life and health (Laverack, 2006; Fisher and Gosselink, 2008; Woodall et al., 2010). In the context of health research, empowerment was viewed as a dynamic health process of purposefully participating in changing oneself and the environment, recognizing patterns and using internal resources to promote happiness (Shearer et al., 2004). Specifically, health empowerment was described as an awareness of the ability to participate knowingly in health and healthcare decisions (Shearer, 2004).

Empowerment has been studied as an essential outcome in consumer brand engagement (Popay et al., 2007; Bowden, 2009; Bordie et al., 2013). However, studies regarding health empowerment within the context of community engagement are relatively rare, especially in the context of the OSHC. Previous studies have found that there are advantages of health empowerment for individuals in terms of improving their self-efficacy and self-esteem. This is especially true for young people (Laverack, 2006; Fisher & Gosselink, 2008; Wallerstein, 2006; Gibbon, 2000; Crossley, 2001; Jacobs, 2006; Aday & Kehoe, 2008). Via the OSHC, users increase their sense of control over their health and lives (Laverack, 2006; Hatzidimitriadou, 2002; Rogers & Robinson, 2004) and accumulate personal health knowledge and awareness (Crossley, 2001). In the research considering high-risk groups such as sex workers, drug users, and men who have sex with men (MSM), health empowerment was found to benefit their behavioural change, for example, greater condom use for reducing STD/HIV infection (Wallerstein, 2006; Crossley, 2001). Studies also found health empowerment a positive outcome of participating in communities, allowing users to cope better with stressful events by sharing their concerns with the community (Laverack, 2006; Wallerstein, 2006; Rogers & Robinson, 2004).

In this study, health empowerment is represented in knowledge accumulation, confidence in treatment and preparation for a doctor's appointment. Because of the various different information available within the online sexual health community based on different users' backgrounds and experience, the process of engagement with this community can be viewed as an opportunity to acquire sexual health-related knowledge, which is beneficial in increasing knowledge reserves and empowering users to better control their sexual health behaviours and conditions.

Some participants mentioned 'confidence in treatment', which refers to the degree of belief in successfully treating or curing sexually transmitted diseases. Unlike common diseases like colds or 'flu, sexually transmitted diseases are usually stereotyped as incurable or very difficult to treat and are often labelled with an 'death signal' as with HIV/AIDS. Because the online sexual health community is constituted of users diagnosed with STDs/HIV/AIDS, it benefits from providing a better or correct understanding of STDs/HIV/AIDS by interacting and communicating with users. The information provided by this community tells us that most STDs are curable or manageable, which is advantageous for users in helping them gain a positive attitude because they are able to see that others have been successfully treated for an STD.

A recent report highlights the enormous pressure the NHS is facing because it is overloaded with patients, which has also caused a massive impact on the effectiveness of appropriate treatments. After all, the unit time for each patient is minimal (NHS Digital, 2019). Regarding those who are unfamiliar with the relevant information around STDs/HIV, there are some patients who need more time to interact with their doctors or GPs in order to get a better understanding of their sexual health-related concerns, rather than simply being informed to take a specific medicine. Some OSHC users look forward to receiving more comprehensive information in terms of their concerns. The OSHC provides a chance for users to understand their sexual health-related illness by interacting with other users, which also helps them better prepare before the doctors' appointment. One participant pointed out that the power of treatment is no longer in the hands of doctors alone regarding HIV prevention. Users can bring the information about PrEp which they gathered from the online community to their doctors which is not only a more efficient use of the limited time available during a typical doctor's appointment, but leaves the user better empowered to address responsibility for their sexual health.

Interestingly, the three dimensions of health empowerment reflect more general consumer engagement with the online community. ***Uniqueness*** knowledge and knowledge accumulation changes the users' cognition in terms of their understanding of sexual health information. The confidence they have in treatment regarding the emotional benefits of engaging with the community while preparing for doctors' appointments reflects the behavioural changes following their engagement with the OSHC.

5.3.2. Entertainment

Entertainment was an important motivation for consumer online brand community engagement (Son et al., 2012; Rohm et al., 2013; Azar et al., 2016; Barger et al., 2016; Tsai and Men, 2013: 2017). Entertainment refers to the relaxation, enjoyment, and emotional relief generated by temporarily escaping from mundane routines (Park, Kee, and Valenzuela 2009; Shao 2009). Although entertainment was found to be a motivation for engagement, it may change over time according to the consumer's needs and the information about the brand and its products (Shao and Ross, 2015; Barger et al., 2016). In this study, entertainment not a motivating factor. The reason may be because the most common reason for engaging with an OSHC is because users have concerns and worries about diseases relevant to sexual health. Because of this, there are very few people visiting the community who are seeking entertainment.

Rather than acting as a motivating factor, entertainment was a key outcome of consumer engagement with the online sexual health community. According to descriptions from previous studies, entertainment also refers to relaxation and emotional relief from the current situation (Park et al., 2009). In this study, entertainment emerged from the perspective of emotional relief and sexual satisfaction. Emotional relief was found to be particularly important in this research, due to the context of sexual health concerns. In the meantime, receiving informational and emotional help and support by sharing experiences can help to significantly reduce users' anxiety and stress, thus giving them some relief from their negative emotions.

Moorman and Smit (2011) noted that sexual arousal is related to entertainment and is a motivating factor for consumer engagement with an online community. In contrast to sexual arousal, in this research, sexual satisfaction was mentioned by few participants who described an increase in their sense of enjoyment performing sex-related activities after adopting recommendations and suggestions from the OSHC. Both emotional relief and sexual satisfaction contribute to the theme of entertainment, which was seen as an actual consumer engagement outcome with the online sexual health community.

5.4. Potential Iterative Relationship between the Variables

5.4.1. Information Quality and Fear

Information quality emerged as the main motivating factor for consumer engagement with the OSHC. As online community is composed of various people communicating, interacting, accessing, sharing and transfering topic-related experience and knowledge supported by information technology (Kim & Son, 2009). High-quality information that provides useful content for solving an issue, or eases users' anxiety will likely stimulate consumer engagement within the community wherein they can obtain more information related to their needs.

The quality of brand-related information was found to be a determining factor in consumer engagement with online communities (Dessart et al., 2015). Within the relationship with Fear – the state when people feel panic and anxious with health problems, it is observed that by the more high-quality the information provided in an OSHC which provides helpful advice or solutions, obtained by users, the less fearful those users can be. Because of the fear, consumers need a place to resolve their concerns and online communities enable them to access information, or interact with others anonymously, which is particularly important for those with stigmatised illnesses (Barney et al., 2011) or sexual health problems. By interacting with other users, they can exchange information, receive care, and encourage others who have the same concerns. With high-quality information, users are prompted, stimulated even, to reduce their anxiety.

5.4.2. Information Quality and Source credibility

Source credibility was found to be an essential factor affecting users' behaviour in the context of the online community and one that also stimulates consumer engagement (Yang et al., 2010;

Tsai and Men, 2013). The higher the perceived level of source credibility, the greater the possibility that users will adopt information from the message (Kareklas et al., 2015).

The most relevant aspect of source credibility to Information Quality is source expertise. This refers to the degree to which the source is believed to provide valid information based on their education, career background and social level (Hovland et al., 1953). If the information is observed as comprehensive and helpful to users, it is likely come from experts, or even doctors, and so users can put more trust in those providing information. The expertise mentioned in the source's profile can be customised; this can be indicative that the source’s expertise will be reflected within the information they provide (Heelye et al., 2013). The professional nature of a source’s language and the terminology they use also indicates their level of expertise, providing further evidence of the source's credibility (König et al., 2019).

5.4.3. Information Quantity and Information Quality

Information quantity has been studied in online consumer reviews and can be described as the number of replies to one question posted in the online community (Wang and Strong., 1996). The quantity of reviews refers to the popularity of the answer, which could be useful for reducing risk (Chatterjee, 2001). In this study, information quantity is described as the number of comments regarding one question posted by users engaged in online sexual health community. Within the context of this relationship, Information Quantity indicates the degree of high quality information.

5.4.4. Source credibility and Information Quality

Health consumers can easily access and engage with various information on the internet, especially via online communities (Chang et al, 2020). The quality of health information on online platforms is variable and generally speaking, this is concerning. Users provide and share information with others on different platforms on social media; however, information accuracy is questionable.

Sui and Zhang (2021) indicated that both perceived information quality and perceived source credibility can strengthen perceived information credibility. In some cases, the information source can be less important than that of the influence of the information quality on information credibility. Yet, the cognitive conflict and knowledge self-confidence of information receivers weaken the influence of information quality on information credibility. Conversely, cognitive conflict can consolidate the effects of source credibility on information credibility. Likewise, perceived information quality might be affected by understandability, relevance and information usefulness, whilst source expertise and authority can affect perceived source reliability. If the information users obtain comes from a credible, reliable source such as official health units or qualified doctors/experts, that information is recognised as comprehensive with and the quality as trustworthy.

5.4.5. Source credibility and online community quality

Online community quality refers to a detailed description of an online community that users want and are willing to engage with. Such communities, in terms of health-care professionals, can connect other people indirectly by referring the individual who is in need to someone else who might have the relevant knowledge and be willing to help (Hara N, 2007).

Online community quality is newly mentioned in the study of online community engagement, and its importance as a motivator cannot be ignored. High-quality online communities can provide more help to the users with concerns compared with low-quality online communities, such as communities lacking in management and community principles. High-quality information from online communities will be positively reflected in user perception and engagement (Filieri et al, 2015). The higher the quality of users' perception of the online community, the higher their motivation will be to engage with the community. High-quality online communities can also be recognised by the source credibility where information is provided by experts/doctors. The high proportion of good information from credible sources and user regard for information quality, demonstrates that an online community has high-quality content and can be considered reliable (Jiang et al., 2021).

5.4.6. Source credibility and Fear

The emergence of social media facilitated the creation of various online healthcare communities, where users can provide, share and seek healthcare-related information from others who have experienced similar problems. However, with the huge increase of user-generated content, the need to constantly analyse the contents' quality is crucial as one sifts through enormous amounts of healthcare information (Jin et al., 2016). A source that is considered more credible is identified to strengthen message compliance by increasing both the perceived message threat and efficacy (De et al., 2017). The relationship between source credibility and users' fear can be identified as when users get scared by sexual health problems, and afterward they seek for advice/help in online healthcare communities. If the perceived information is observed to be credible and providing high-quality content, there is a high possibility that the source giving such information come from experts/doctors, and this will stimulate the users to put more trust in that source and therefore, ease the fear about the problems they are facing. If the qualifications of authors are cited with good quality contents, this will further increase users' preference in visiting that community (Katharina et al., 2021).

5.4.7. Social support and Fear

Social support is described as an experience in which individuals receive care, help, and respond to other people within a social group (Cobe, 1976; House, 1981). Considering the background of this current research in terms of the online sexual health community, wherein the primary function is to provide an opportunity for communicating sexual health concerns, Informational and emotional support have the most relevant elements for further analysis.

Within the online sexual health community, users who provide correct information can help questioners resolve their concerns whilst respecting the user's private and reputation (Yan et al., 2016). In parallel, users who provide emotional support always convey an atmosphere of harmony, perhaps their empathy or benevolence leads them to engage with the online community. When they see other users asking for help, they are willing to offer emotional support by referencing their own experience in order to encourage the questioner and to provide emotional support. With sexual health-related concerns, users can often feel lonely or desperate, and emotional support can be very encouraging. This would help the users in need feel less scared and can find a way to solve such problems, or further seek for professional medical treatments in time.

In contrast, Fear and Social Support can have an adverse relationship with one another: . When users feel desperate and deeply anxious about their health problems, they need more social support from others to help them ease their depression. The higher the level of social support and optimism provided by caregivers, and in the case of online sexual health communities the sharing of sympathy, and the emotional support, were associated with lower levels of depression and generalised anxiety for the users in need (Schung et al., 2021).

5.5. Chapter Summary

This chapter has presented the research discussion for this study, where twelve themes regarding the research questions have been comprehensively evaluated. Each theme was integrated with the previous studies and further extended in this research regarding the motivations and outcomes of consumer engagement with the online sexual health community. The next chapter will discuss the contributions, limitations and recommendations for future research.

CHAPTER 6. CONCLUSION

6.1. Chapter Overview

This final chapter aims to provide conclusions for this study. It begins with section 6.2, discussing the theoretical contributions regarding the theories and previous studies employed during the current research. A discussion of the practical follows in section 6.3. Recommendations for future study and an evaluation of the limitations of this empirical research is provided in section 6.4. A chapter summary follows in section 6.5.

6.2. Theoretical Contribution

Theoretically, this study's first and most important contribution is developing a conceptual framework for the online community’s motivations to engage with the said community and the outcomes of this engagement. In particular, this study has assessed this engagement in the context of MSM (men who have sex with men). This research is the first study which provides a detailed and comprehensive model identifying the motivations behind engagement with this community and the benefits following on from the engagement. This model is based on the concept of consumer online brand community engagement, where relationship marketing, social exchange theory and service-dominant logic theory act as a fundamental, crucial theoretical basis.

Relationship marketing is a strategy that can maintain loyalty, interaction, and long-term engagement between customers and enterprises (Berry, 1983; Payne, 1995). It was also a critical element in building a close relationship between users and suppliers, which enhances the consumer’s intention to engage with the community if their needs can be satisfied. In the online community context, the relationship occurs by exchanging information, experiences and emotions within a network environment. A good relationship is based on each user's continuous interaction to have their concerns solved. This study specifically refers to sexual health-related questions. However, relationship marketing theory has been studied within the context of engagement with the online sexual health community. This study is based on the principle of relationship marketing wherein an individual’s behaviour is an exchange process, which can be measured by cost and reward (Blau, 1963). For example, interview question nine asked the benefits of using (engaging with) this online sexual health forum (community) and was aimed at determining the important rewards for consumer engagement with the OHSC. Thus, this study's third contribution is in employing relationship marketing as one of the theoretical foundations of consumer online sexual health community engagement to design the interview questions, in order to integrate the outcomes of consumer engagement with OSHC, thereby consolidating its consumer engagement research position and expanding the use of this theory in the context of OSHC.

Social exchange theory was described as the exchange behaviour between two parties: the object being exchanged can be tangible or intangible (Homans, 1961). In the context of the online community, social exchange theory was found to stimulate the circle of interaction between users, which further explained as the pressure (or responsibility) one user feels to offer help to another user, if they themselves have been the recipient of help If the rewards happen, the exchange follows (Blau, 1964). Social exchange theory was studied as a critical theoretical foundation to explain the reason for consumers' behaviour change in terms of engagement with the online community (Shtatfeld et al., 2009; Jin et al., 2010; Shiau and Luo, 2012; Yan et al., 2016). With the rapid development of the economy, people's needs also increase. Simple goods supply can no longer meet consumers' needs, and service is what they value more (Drucker, 1980). Therefore, service-dominant logic (S-DL) has been employed as the last critical theoretical support of consumer online community engagement in this study. Service dominant logic emphasises that consumers are looking for tangible goods and exchanging information, skills, and experiences (Vargo and Lusch, 2004). ‘Service’ is described as a professional ability through behaviour, process, and performance to benefit another entity or the entity itself. Service dominant logic emphasised the service as the fundamental basis of exchange and was stated as a guideline for researching the intention of consumer engagement beyond purchasing. By the process of achieving the target of value co-creation, service-dominant logic was found to be closely associated with an online brand community (Vargo and Lusch, 2004; Ballantyne and Aitken, 2007; Merz et al., 2009; Payne et al., 2009; Halliday, 2016; Vivek et al., 2016).

Social exchange theory and service dominant logic was studied as the fundamental theory for investigating consumer engagement motivation with the online brand community (Brodie et al., 2011; Hollebeek et al., 2014). However, no single research studied this within the context of the online sexual health community engagement, and this is perhaps because the consumers who engage with this community are mainly seeking services based on other users’ ability given by the informational, emotional and behavioural support, in order to help them solve their sexual health-related concerns. We believe the better service the community provided; the more possibility emerged for the consumer to engage with this community. More specifically, interview question four investigated the motivation of engagement by asking why consumers were using (engaging with) this OSHC and interview question seventeen confirmed the importance of service within an OSHC that questioned the aspects constituting a good OSHC. The result indicated that the communities provide better services in terms of solving the consumers' concerns related to sexual health. Therefore, the third contribution for this study can be presented as the employment of these two theories to find out the motivations behind consumer engagement towards online sexual health community.

Excepting the previous theories' contribution, this research has investigated several new motivations for consumer engagement, especially with the online sexual health community which can be generally viewed from two perspectives. On the one hand, this research has confirmed the importance of the motivations which were found in the previous studies such as information quality, social support, source credibility, convenience, and privacy concerns. On the other hand, some new motivations emerged from this research.

Fear was first found as a motivation stimulates consumers' willingness to engage with this online sexual health community, because of the worries related to sexual health diseases holding in their minds. Engaging with this community, such as asking questions and exchanging thoughts, could satisfy their needs regarding solving sexual health-related concerns. We stated that fear is a negative emotion, but it can lead to a positive result after fear is reduced by engaging with the community.

Information quantity was supersized found in this study because information quality was found has a way bigger impact than information quantity. Users ignore the number of replies the question received. The quality of information is their concerns because it is much possible to solve the questioner's question. We guess why information quantity was found as a motivation of engagement because the more quantity usually indicates the potential of finding a useful answer. Primarily when users concern about their health, every single message may become the solution regarding their worries. Thus, the quantity of information became a considerable motivation for the consumer to engage with the online sexual health community.

Online community quality was newly found in consumer online community engagement, which showed extremely important in this research. Because this community's content is a sexual health-related, especially targeting men homosexual groups, the topic's sensitivity should be highly controlled. A well-organised and strictly controlled community increases users' desire to engage with because they can perceive the community's safety and do not need to be worried about getting unrespectful treatment while maintaining the community's quality by flowering the rules conducts.

In terms of this research's outcomes, this study first found out health empowerment as a critical outcome of consumer engagement with the online sexual health community, and we dare to make a bold prediction that health empowerment will fit all consumer engagement with the online health community. Interestingly, the elements consist of health empowerment were surprisedly found matching with Hollebeek (2011) 's engagement model, which is informational, emotional and behavioral engagement. Detailed explains as Knowledge accumulation is the outcome of informational engagement because, during the interaction with other users in the community, the knowledge is relatively increasing. Confident on treatment is the benefits from emotional engagement because the support from other users can build the belief on curing the sexual disease and make the questioner feel empathy because they know they are not the only one who has this concern. Prepare for doctors' appointments is the effect of behavioral engagement with this community. By receiving the information from others' comments, users can get much well known on their concerns, further helping them discuss with their medical providers rather than simply obey their decisions. All three key elements contribute to the theme of health empowerment, which is believed to be a non-negligible outcome of consumer online health community engagement studies.

Moreover, entertainment was emerged as an outcome but not as motivation in the previous studies of consumer online community engagement. The reason can be positively related to the nature of the community, which is a sexual health-related online community, most of the users engage with this community is when they need help regarding on their sexual health-related concerns, therefore, the entertainment has not existed before they engage with this community but may happen after the engagement behavior presented. Because of the concerns were solved by other users' problems, the sense of entertainment followed appears. Thus, as another contribution to enriching the study of consumer engagement in the context of the online health community, entertainment was confirmed as an essential outcome. Besides the contributions to consumer engagement studies, this study also provides some necessary practical implications, as stated in the next section.

6.3. Practical Implication

Practically, this study's significant implication is provided with a relatively comprehensive understanding of consumers' motivation and outcomes with the online health community, especially with an online sexual health community. The inspirations from the themes being studied in this study significantly influence the founders of OSHC to improve the communities, further providing more benefits in resolving consumers' sexual health-related concerns.

More specifically, understanding the needs and motivations of why consumers are willing to engage with this online sexual health community could help guide the community creators to develop online communities that meet user preferences. For example, information quality was mentioned by almost every participant as a prerequisite condition for consumers to engage with. Thus, the online sexual health community founders need to guarantee the quality of information for the comments to ensure the information is accurate and non-bias, relevant to the questions posted and always provided with the most updated information. Moreover, source credibility was found important in critical information such as health-related, a comment contributed by the source, which is trustworthiness or from the expert's perspective, are more welcomed to be adopted by consumers, thereafter, if an OSHC constituted with more credible sources, such as doctors or health expertise, the more consumers would engage. The online community quality was found in this study to help control the quality of information and sources credibility, which is another theme found in this study. Online community quality has been found as an essential motivation that motived users' intention of engaging, the higher quality of the community the consumer perceived, the more willingness they would like to interact. Thus, the community creators should strictly control the community's quality in developing a comprehensive moderation system to ensure that all information is presented with high-quality, credible sources and collaboration with qualified health experts. The benefits for the users who engaged with this online sexual health community also cannot be ignored. Because the topics are related to sexual health knowledge and information, it is much embarrassing to talk about it in public, a highly secured and organized online community can satisfy the needs that consumers can solve while saving the costs for visiting doctors. Therefore, this study provides a measure of the online community that consumers are favorite to engage, based on a qualitative research method, all of the motivations indicated a manifestation of the users' needs for the community they want. Thus, if an online health community can provide all the necessary elements, it is much possible to fulfil the consumers' needs, which could help users save the time and energy on selecting a qualified online sexual health community. Furthermore, this can also thrive the engaging communities to develop with greater growth, backed by the satisfied users who have found proper answers for their concerns.

Besides, convenience and privacy concerns were an important reason for consumers engaging with OSHC, due to OSHC is not limited by time or space, users can solve their sexual health-related problems anytime and anywhere. However, OSHC is only an internet-based platform with the users-generated information-based online community, which can provide useful information, but the final diagnosis still needs to pass the hospital's professional test. In addition, OSHC is highly privacy related as it concerns users' sexual health information, which is difficult to discuss in daily life. OSHC provides a free and unfettered environment where users do not have to worry about their privacy being disclosed, by protecting users' privacy through a strict community mechanism, this study suggests that OSHC can cooperate with local medical institutions to provide users with direct appointments with these medical institutions in the process of compatibility to reduce the pressure on the NHS. It is also considered as an improvement in health consultancy services that the government health units/local medical institutions can further promote the OSHCs as a supporting service alongside them to ease the enormous pressure. Despite the significant support of OSHCs, the doctor dominant position must stay unchanged with the advice on treatments should be taken cautiously from the expertise doctors rather than extract information merely from OSHCs.

From the themes that indicate the outcomes of consumer engagement with OSHC, as well as the connections amongst the three relevant pillars (users, communicators creators and government health units), this study has highlighted the correlated business and management values, which afterward create further improvements amongst these pillars to better serving the society in terms of sexual health-related concerns. This study also found that entertainment and members networking are important as the engagement consequences. Since sexual health-related issues often bring anxiety or loneliness to the individual, OSCH founders should have fostered a strong connection between users. Healthy and rewarding social activities can make more users feel supported and encouraged, helping alleviate negative emotions. Although

COVID-19 is a big obstacle to offline gatherings, the online sexual health communities' managers can still hold various online gatherings and strengthen user connections, thus attracting more users to fit in with OHSC.

6.4. Limitation and Future Research Directions

This study provides several significant contributions to the existing research. However, limitations are unavoidable, and a number emerged during the course of this study. These limitations highlight critical aspects for future study that would provide valuable assistance to both academics and practitioners.

First and foremost, this study targets a specific health area, namely sexual health, especially among homosexual groups. Thus, the participants involved in this research all come from the same online sexual health community, *PrEp Facts: Rethinking HIV Prevention and Sex* (https://www.facebook.com/groups/PrEPFacts). We do not know if all of the motivations found in this study will fit other health research. Future study needs to expand the target online health community to improve further the framework employed for the sexual health community and become a complete model which fits into more online health communities.

Secondly, the conceptual framework has mainly emerged from male homosexual participants who engage with the targeted online sexual health community. The findings provided a limited understanding because they come only from homosexual users' perspectives and are centred on the risk of contracting STDs and HIV. Broadly, these risks are higher than in other demographic groups. The results might differ according to other sexual behaviours and sexual orientations. Accordingly, future studies should also consider examining this framework with different participants to find out new hidden motivations.

Moreover, this research has viewed the process of consumer engagement behaviour as an overall element but does not specify different levels. Future researchers could redesign the interview questions to include more detailed levels of engagement. For example, according to the needs of consumers, the level of engagement could be divided into three: cognitive, emotional and behavioural (Hollebeek, 2011). Or a researcher could consider engagement from online behaviours in terms of consuming, contributing and creating that users often demonstrate based on Moorman et al. (2011)'s study.

Finally, this study is exclusively qualitative research; the conceptual framework which comprises the themes came from the semi-structured interviews. Therefore, future scholars must test this framework by employing a quantitative research method, such as developing questionnaires regarding each theme from the current study with a significant number of participants, to test and improve this conceptual framework by using structural equation modelling, for example, to confirm the model and test the validity.

6.5. Chapter Summary

As the final chapter of this thesis, this chapter discusses the theoretical and practical contributions from the current study. A clear, brief summary has been provided in each section, followed by the limitations and recommendations for future studies. An appendix and bibliography will be presented at the end of this study.

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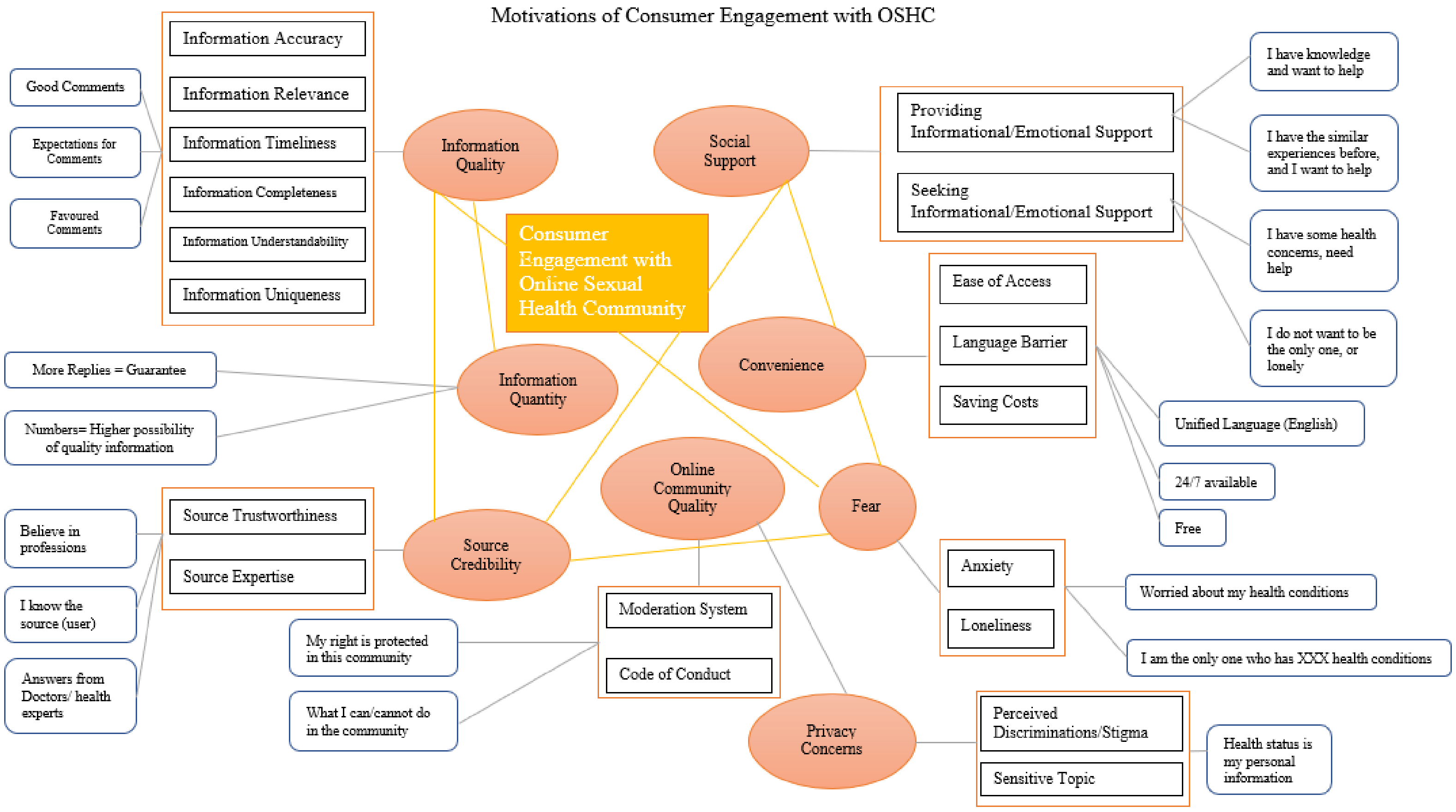
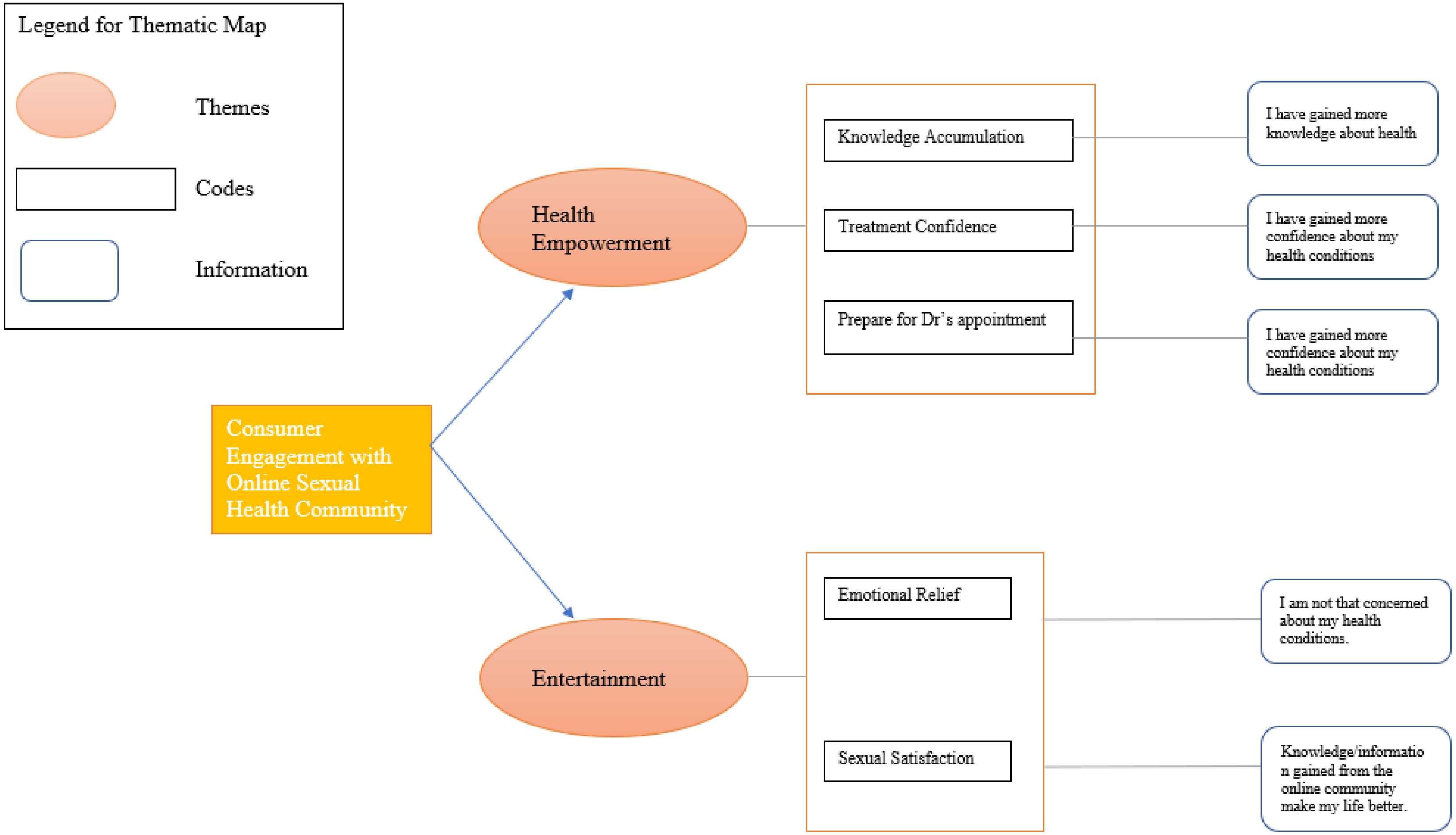
APPENDIX

Appendix 1. Thematic Map



Outcomes of Consumer Engagement with OSHC



Appendix 2. Coding Framework

Quote	**Initial Thoughts**	**Code**	**Theme**	**Definition**
'They recognised my symptoms. On the top of that, they asked some very specific question, which were very appropriate for my case. Then I realised that they might have diagnosed me correctly. When I followed their advice that gave me some relief.' *[ID3, Page1, Line18-22, Age31]*	• Correct Information • Information have potential on diagnosing sexual health conditions	Information Accuracy	Information Quality	*'The quality of the content of a consumer review from the perspective of information characteristics' (Park et al., 2007, p. 128).*
'But actually, by responding with a commentary and with experience, people might say, I experienced that. I experienced that to you and what I did about it was rather than following the traditional medical advice, I tried doing this this and someone else might then chat in with, so I tried exactly the same thing. It worked, or it didn't work for me. So, for me, it's more than trusting the facts, it's also the exchange between people who might have acted upon that Information.' [ID 16, Page 3, Line 1-5, Age 52]	• Information related to the question • Information based on the fact • Information with real experience has better quality	Information Relevancy		
'The reason is that I want to stay in touch about the news. If there's any new medicine or there's a new sexual practice that it's gonna be healthier or not. That's the main reason that I'm using these forums. I am more likely to use it to find out new updated information.' [ID 14, Page 1, Line 25-27, Age 41]	• Up-to-date information • New information regarding sexual health	Information Timeliness		
'A one-sentence response, direct, subjective, and without any scientific basis is a bad response, and a simplistic response I don't like.' [ID 15, Page 5, Line 23-24, Age 28]	• Reasonable information • Complete diagnose • Objective thoughts	Information Completeness		
'It means the users understand what is the word and the users can change to another word easy to for the someone don't have the background or don't have the knowledge about it to understand that.' [ID 4, Page 4, Line 16-18, Age 30]	• Easy to read • Less/No information needs professional knowledge	Information Understandability		
'Because when I started using this group, there was a lot of information we were sharing that wasn't really available anywhere else. Now the Information is available everywhere, people are talking about PrEp in every media source, news, or organization.' [ID 18, Page 1, Line 9-12, Age 48]	• Exclusive information • Information that difficult to receive from the other place	Information Uniqueness		

'This is important. Like I said before that I prefer to compare the answers between different users, if they give me the same answers, I will believe that the that's a correct answer. And if they give me different answers that maybe have some problem in there, the number of answers is important for me, let us assume if there have over five answers, it would be better for me to evaluate the quality of the answers.' ID 4, Page 3, Line 19-21, Age 30]	• Higher volume replies increased the possibility of expected information • The more reply helps on ease the mind and well prepare		Information Quantity	*'The quantity or volume of available data is appropriate for a task' (Wang and Strong, 1996).*
'Mostly I was very concerned about sexually transmittable diseases, STDs. And I am not talking about HIV, I am talking about other things, I was reading some people talking about the usage of the Doxycycline for preventing STDs like PrEp, and this is the question that I asked.' [ID 12, Page 2, Line 22-24, Age 44]	• Seeking Information about potential STDs diagnostic • Information regarding treatment and well-being	Seeking Informational Support		
'Yeah, I post questions in relation to helping people understand informing and issues around PrEp and syphilis and sexual health. I generally tend to post in response to other people's questions. I rarely be the first person to ask a question. I will mostly be responding to a question or a comment that someone else has made.' [ID 16, Page 2, Line 1-3, Age 52]	• Has knowledge and willing to help others • Has similar experiences about the sexual health concerns	Providing Informational Support	Social Support	*'As a verbal and nonverbal communication between recipients and providers that reduces uncertainty about the situation, the self, the other, or the relationship, and functions to enhance the perception of personal control in one's experience' (Albrecht and Adelman, 1987).*
'I think that I feel identified with people there, I think that people think the same way as me. So, I feel that by going there that I'm not alone in my thoughts and they're not the only one. So, it's like a comfort of knowing that other people have the same fears, the same issues that some people are experiencing, the same discrimination in, or the same problems for...discriminated... even sexually because they are not very well seen because they like to have bareback sex.' [ID 12, Page 3, Line 19-22, Age 44]	• Fear of getting STDs • Needs to be reassured regarding the sexual health concerns • Needs encourage and confidence	Seeking Emotional Support		
'The online forums have created a feeling of community around the world where people have been willing to give their time and help others and inform others in a way that I think is totally unique and hasn't happened in any other scenario.' [ID19, Page9, Line35-38, Age62]	• Compassion • Positive community vibe • Share experience	Providing Emotional Support		

'I could only recall like I ever asking questions about HIV, but that's not true, I've also asked about other STDs, but basically it is always almost always like I have had something that I thought might be risky.' [ID 8, Page 2, Line 21-23, Age 28]	- Scared of contracting sexual transmitted diseases - Stress due to sexual health condition - Mentally unstable	Anxiety	Fear	*'The state of panic and emergency caused by people or animals in the face of reality or imaginary danger and things they hate' (Higbee, 1969).*
'I don't know. I think that I feel identified with people there, I think that people think the same way as me. So, I feel that by going there that I'm not alone in my thoughts and they're not the only one.'[ID 12, Page 3, Line17-19, Age 44]	- Feeling excluded - Being isolated because of sexual health condition - Do not want to be alone	Longingness		
'So, looking either at their Facebook profile or their previous postings or by seeing a trusted person, reference them and say, this is the person who is the director of whatever or this person runs this clinic in province town. So, your answers are going to then have more weight than somebody else's.' [ID 10, Page 8, Line 26-28, Age 50	- With profile - Evidence on users' identification - Good quality information indicates trustworthy source	Source Trustworthiness	Source Credibility	*'The extent to which an information source is perceived to believable, competent and trustworthy by information recipients' (Petty and Caciopo, 1986).*
'It has to do with the person who answering the question. For example, he said he was a doctor, or he said he had worked in a clinic before, or he said his friend, or himself was a medical student, he had such a professional background or professional experience, this kind of support would make me believe his answer more.' [ID 15, Page 6, Line 25-28, Age 28]	- Identification - Related career - With experience/ knowledge on sexual health	Source Expertise		
'I do think why not in my case, since I live in Mexico, and I don't speak a lot of Spanish, and so the language barrier would be a concern as well. So, I obviously, if I do see someone face to face, I can use Google translator, whatever. But if I need to call someone, then it would be more difficult for me to communicate them.' [ID 13, Page 3, Line 28-32, Age 29]	- Cannot understand other language - Unable/ difficult to communicate in different language - Unified use of English	Language Barriers	Convenience	*'A reduction in the amount of consumer time and energy required to acquire, use, and dispose of a product or service relative to the time and energy required by other offerings in the product/service class' (Brown & McEnally, 1992, p. 49).*
'Second point was, as I told you, the GP was not really available, and I need to know what I am dealing with. Okay, so like even if it was something bad, I only have to know it after a week or so. So, in this way, what's going on? What's going on? This thing is really helpful, at least. I mean it was in time, I think, and readily available.' [ID 3, Page 2, Line 13-16, Age 31]	- Doctors/ health providers are not always available - Very limited consultation period - OSHC 24/7 available	Ease of Access		

‘If I take the time to go to the hospital exclusively, just for the physical symptoms that I can handle by myself, it will be very time consuming and cause the abuse of medical resources, so the second benefit is to save me a lot of practice and energy is spent on unnecessary things.’ [ID 7, Page 17, Line 19-20, Age 25]	• Avoid unnecessary costs (money, time) • Saving medical resources	Saving Costs		
‘This is very important to me that there's moderation on the forum that I usually go, this moderation is taking care of the group as a whole and they are also taking care of the people are allowed to be who they want to be, doesn't matter what their preferences are or if it's funny or kinky or whatever, but it's their preference.’ [ID 12, Page 5, Line 2-6, Age 44]	• Protect users’ right • Make sure the information is correct • Supervising community activities	Moderation System	Online Community Quality	A moderation system is a method the webmaster chooses to sort contributions that are irrelevant, obscene, illegal, or insulting regarding useful or informative contributions.（Emerged from this study）
'I think he's been to have a very clear code of conduct and that code of conduct changes, and it adapts, and it's built upon, but a very clear code of conduct like if you're coming into this group, here's what is expected of you.' [ID 16, Page 6, Line 14-16, Age 52]	• Regulate members’ behavior • Guideline of welcomed/ prohibited behaviours	Code of Conducts		
'Ok, in the field of China, it is very sensitive to ask people questions about sexual life, so if you're on the forum, people don't know who you are, and then you ask, you get a lot of information, while protecting your privacy, because you're anonymous.' [ID 6, Page 6, Line 20-22, Age 28]	• Scared of being exposed • Limited place to discuss sexual health conditions in some area • Able to be anonymous	Sensitive Topics	Privacy Concern	*‘An individual's subjective views of fairness within the context of information privacy' (Malhotra et al., 2004)*
I've been accused of asking sex-related questions, especially when I ask for tips on how to have a better sex life, it may be a bit sensitive in China. When I ask such questions, some people will attack the character, they think ask such a question is wrong. When I asked how to have a better sexual experience, some netizens directly asked me whether I was a social worker (prostitute), which I think is discriminatory. [ID 6, Page 13, Line 6-11, Age 28] *Um, I am not HIV positive, so I'm not personally affected by stigma against HIV, but it's still a lot of stigmas against HIV affects HIV negative people as well. [ID 9, Page 8, Line 21-24, Age 28]*	• Incorrect thoughts/idea regarding sex and sexual health • Judgement on acquiring STDs • Willingness to delay or ignore sexual health check and treatment. • Need a place to freely discuss sexual health conditions without being criticized	Perceived Stigma/ Discrimination		

‘So, after reading the forum and the questions, I felt that I’m more experienced, also my knowledge has increased. And this is Information that I got, which is more valuable than the Information I got from the health practitioners in my country. I would say, yes, I am much more knowledgeable.’ [ID 12, Page 5, Line 18-21, Age 44]	• Understand more about sexual health-related knowledge • Experienced information • Helping others by using the information obtained from the OSHC	Knowledge Accumulation	Health Empowerment	*‘An individual’s awareness of the ability to participate knowingly in discussions around health and healthcare decisions’ (Shearer, 2004)*
'Because he has suffered the same illness as me, and he was successfully cured, I can use his treatment method, and his successful treatment of the case makes me more confident to face the disease.’ [ID 7, Page 10, Line 25-27, Age 25]	• A perceived sense of community • Encouragement in taking sexual health tests and treatment	Treatment Confidence		
‘Obviously, but it’s quite nice because they do present in quite a practical way, and then it’s quite healthy. Then you can bring up these examples when you talk to your health professional.’ [ID 11, Page 4, Line 21-23, Age 33]	• Better communication with offline health providers • Sexual health co-operating • Well-preparation for negative results	Preparation for Doctor’s Appointment		
‘The things I think are most important to me because they not only really changed about protecting the body from HIV, but they’re really about addressing the mind and the heart.’ [ID 18, Page 7, Line 2-3, Age 48]	• Less worries about sexual health conditions • Ease of mind	Emotional Relief	Entertainment	‘The relaxation, enjoyment, and emotional relief generated by temporarily escaping from mundane routines’ (Park, Kee, and Valenzuela 2009).
'Of course, and my sexual life has improved dramatically.' [ID 5, Page 5, Line 26, Age 28]	• Experiential information from OSHC members • Tips for improving the quality of sexual life	Sexual Satisfaction		

Appendix 3. Participant Information Sheet for Interviewees

Newcastle
University
Business School

PARTICIPANT INFORMATION SHEET FOR INTERVIEWEES

This research project is identifying how consumers engage with online sexual health community. Our study aims to understand the motivations and outcomes behind engaging with online sexual health forums.

You are invited to take part in an interview relating to users' engagement with online health forums.

What is the purpose of the study? The findings of this interview will be used to develop and implement appropriate strategies relating to online sexual health forums. ***Please note that "use" and "engage" are used here interchangeable, and "forum" and "community" are used interchangeable.***

Do I have to take part? Participation in the study is voluntary. You have a right to decline the invitation or to withdraw from the study at any time without providing an explanation.

What will happen to me if I take part? If you agree to take part, you will be asked to discuss issues related to online sexual health forums. With your permission, the discussion will be recorded. The discussion will last about 30 minutes. Results will be anonymous (i.e. you will not be identifiable).

What are the advantages of participation? You will receive an electronic summary of the findings of this particular piece of work, when it is available. The study will contribute to illustrate how users decide to engage with online sexual health forums, which will yield in improving the consumers' engagement with online sexual forums, thus, help the sexual health forums users' to achieve their objectives of using these forums and enable the online forums to better manage the online sexual forums

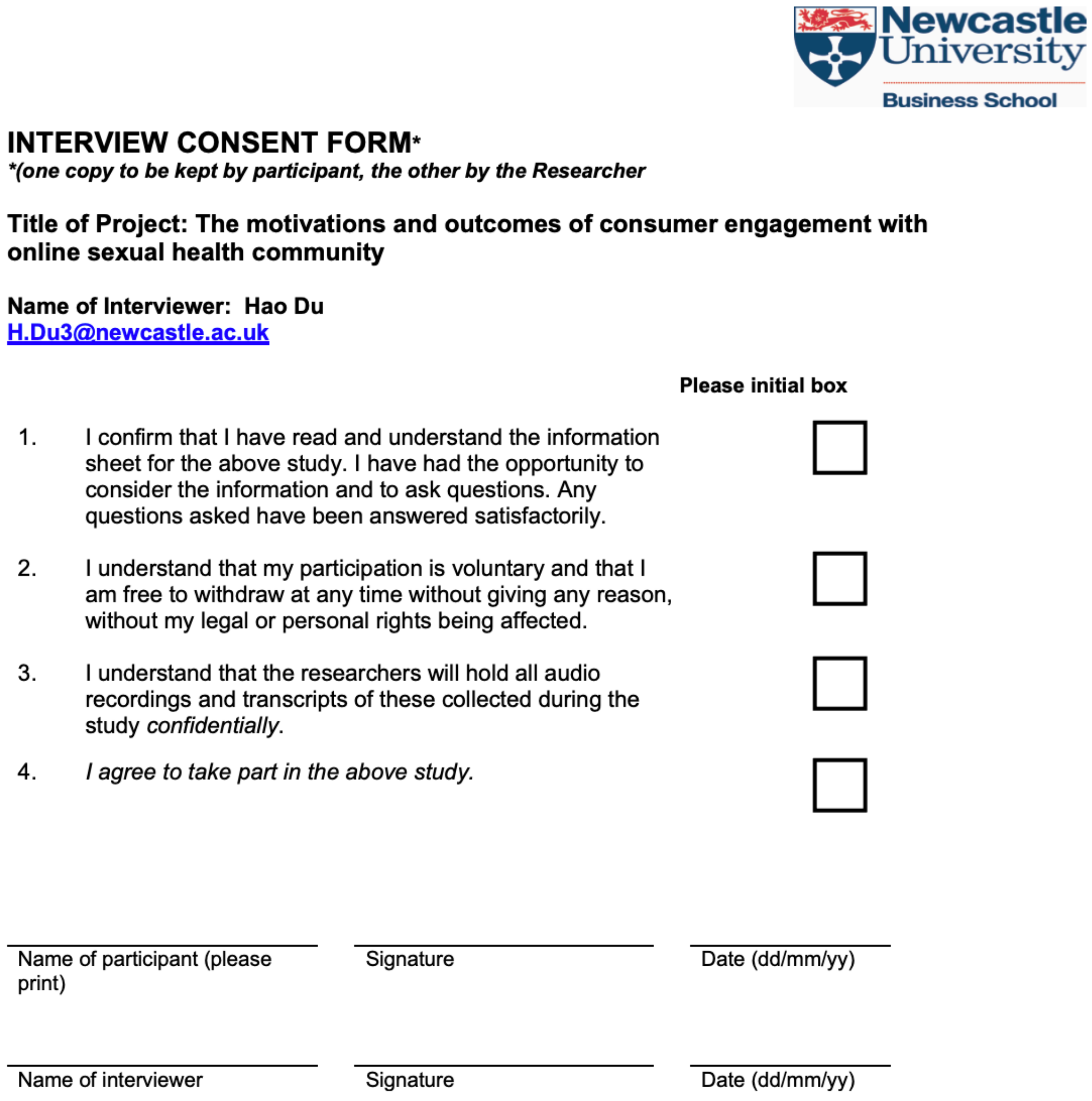
What if something goes wrong? It is extremely unlikely that something will go wrong during this study. Newcastle University insures its staff to carry out research involving people. The University knows about this research project and has approved it. Full ethical approval has been granted for the research using General Data Protection Regulation (GDPR).

Confidentiality: Any information you supply will be held in strict confidence, viewed only by the researchers (Hao Du, Prof. Raffaele Filieri, and Dr. Saurabh Bhattacharya) and then anonymised.

Contact details of interviewer:
Interviewer's Name: Hao Du, Email: H.Du3@newcaslte.ac.uk

If you wish to verify these details, you can contact the Project Co-coordinator:
Prof. Raffaele Filieri, Audencia Business School, Audencia University, Nantes, France.
Email: rfilieri@audencia.com
Dr. Saurabh Bhattacharya, Newcastle University Business School, Newcastle Upon Tyne.
Email: Saurabh.Bhattacharya@newcastle.ac.uk

Appendix 4. Interview Consent Form



Newcastle University
Business School

INTERVIEW CONSENT FORM*
(one copy to be kept by participant, the other by the Researcher

Title of Project: The motivations and outcomes of consumer engagement with online sexual health community

Name of Interviewer: Hao Du
H.Du3@newcastle.ac.uk

Please initial box

1. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information and to ask questions. Any questions asked have been answered satisfactorily. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my legal or personal rights being affected. ☐
3. I understand that the researchers will hold all audio recordings and transcripts of these collected during the study *confidentially*. ☐
4. *I agree to take part in the above study.* ☐

Name of participant (please print)	Signature	Date (dd/mm/yy)
Name of interviewer	Signature	Date (dd/mm/yy)

Appendix 5. Researcher Consent Form

Researcher Consent Form

Research project: The motivations and outcomes of consumer engagement with online sexual health community
Researcher: Hao Du (PhD candidate).
Supervisors: Prof. Raffaele Filieri and Dr Saurabh Bhattacharya
Research Participant's Name: ____
My name is Hao Du, a PhD Candidate at Newcastle University Business School. My research project is investigating the motivations and outcomes consumers engagement with online sexual health communities and how users behave on these forums.
Please note that "use" and "engage" are used here interchangeable, and "forum" and "community" are used interchangeable.
Our study aims to understand how users are motivated to engage with online sexual health forums. I would like to talk to you approximately 30 minutes. Ethical procedures, GDPR, for academic research undertaken from UK institutions require that interviewees explicitly agree to being interviewed and how the information contained in their interview will be used. This consent form is necessary for us to ensure that you understand the purpose of your involvement and that you agree to the conditions of your participation. Please read the accompanying information sheet and then sign this form to certify that you approve the following:

- The interview will be recorded, and a transcript will be produced.
- All data collected will be stored on the university's secure portal that has a secure SSL certificate.
- All questions are voluntary, and you can stop at any time you like.
- Once the interviews are complete, the data will be held for a maximum of three years before being destroyed.
- The data will be used only after it is fully anonymised.
- The transcript of the interviews will be analysed by Hao Du as a researcher.
- Access to the interview transcripts will be limited to Hao Du, Prof. Raffaele Filieri and Dr Saurabh Bhattacharya.
- Any summary interview content, or direct quotations from the interview will be available through academic publications.

Please tick this box if you wish for your name to be included in any acknowledgements
By signing this form, I agree that:
1. I am voluntarily taking part in this project. I understand that I don't have to take part, and I can stop the interview at any time.
2. The transcribed interview or extracts will be used for research purposes only.
3. I have read the information sheet.
4. I have been able to ask any questions I might have, and I understand that I am free to contact the researcher with any questions I may have in the future.

____
Printed Name

______________________________ ______________
Participant's Signature Date

______________________________ ______________
Researcher's Signature Date

This research has been reviewed and approved by Newcastle University Research Ethics Board. If you have any further questions or concern about this study, please contact:
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Appendix 6. Interview Questions

Section 1. Online Sexual Health Community (Forum)

1. Which is/are the online sexual health forum you are using now?
1.1. If there are multiple forums, can you rank them and let me know the reasons for your ranking (from the most preferred to the least preferred)?

2. How long have you been using [online sexual health forum]?

3. When was the last time you have been using [online sexual health forum]?

Section 2. Consumers Engagement (Usage) Motivations and outcomes

4. What is the reason of using this forum?
4.1. What is the most important reason for you to using the forum?

5. Have you ever posted any questions on [online sexual health forum]?

6. How did you feel about the answers to your question?

7. Did you trust the information on [online sexual health forum]?

8. What makes you to believe (or not to believe) [online sexual health forum]?
8.1. You will only rely on the comments which from the trustable source?

9. What are the benefits of using [online sexual health forum]?

10. How do you find about the profession of people who answers your question?
10.1. Is this important to you?
10.2. So how do you ascertain that the source is a credible source?

11. Which aspect of the comment do you consider important?

12. Do you care about the amount of information in the answer?

13. Do you feel the numbers of 'like' are important?
13.1. How do you think about the other reactions? E.g., love, ha-ha, sad, angry, lol and care?
13.2. Have you ever given any like or reactions?

14. Have you ever come across any unprofessional answers?
14.1. How do you feel about these answers?
14.2. And how do you judge the usefulness of the answers?

15. How do you think your subjective knowledge will affect your behaviours?
15.1. So, you will believe the message if you found that is same as you exist knowledge?

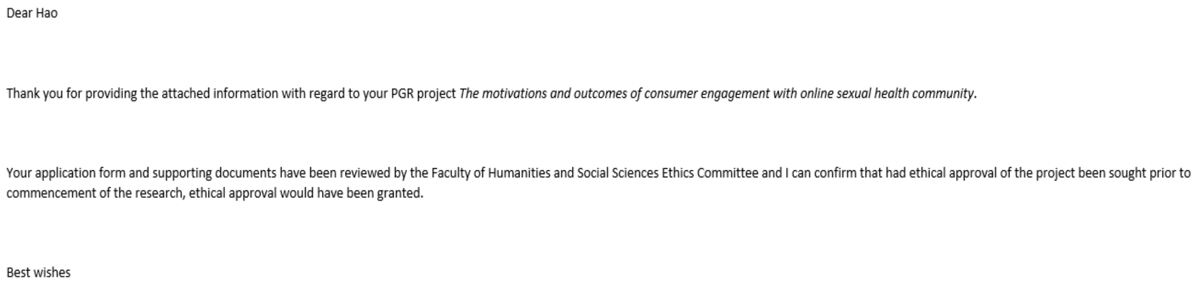
16. Have you ever had any bad experience in [online sexual health forum]?

17. Which aspect you think the [online sexual health forum] is better than the other forums?
17.1. What do you think a good forum should be like?

Section 3. Demographic Questions

Gender   Age   Education Level   Career   Nationality

Appendix 7. Ethical Approval



Dear Hao

Thank you for providing the attached information with regard to your PGR project *The motivations and outcomes of consumer engagement with online sexual health community*.

Your application form and supporting documents have been reviewed by the Faculty of Humanities and Social Sciences Ethics Committee and I can confirm that had ethical approval of the project been sought prior to commencement of the research, ethical approval would have been granted.

Best wishes