

The risks of online dating: an explorative study of the perceived risks of Tinder use

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Master's Thesis

June 2020

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ABSTRACT

The world in the 21st century is becoming more fast-paced and increasingly digitized. This digitalization can be understood as a separate plane of existence, an extension to the physical world, where almost all its aspects are reflected and transformed. Romance is no exception, with online dating fast becoming a standard way of meeting new people and engaging in romantic relations and Tinder being its prime example, as it is the first mobile dating application, as opposed to a dating website. Yet, despite the growing number of Tinder users, stigma still persists with non-users continually appraising online dating as something outlandish or even dangerous. Objectively, Tinder interactions are not without risks, however traditional dating is not exempt of risks either. The risks associated with Tinder have only vaguely been academically explored, unsurprisingly so as literature on the topic of Tinder is presently limited. This presents researchers with the opportunity to expand upon the possible knowledge and to contribute to the understanding of this phenomenon.

In order to fulfil this need for more in-depth investigations, this study set an objective of measuring the effect gender and sexual orientation have on the risk perception of Tinder risks. Thus, by employing a quantitative approach, an experiment was conducted with a sample of 126 participants, all of which had shared their experiences with the mobile application through an anonymous online survey. The data obtained was used to conduct a set of tests to determine the predictive power of gender and sexual orientation. The findings did not discern gender and sexual orientation as the most significant predictors of risk perception, with three out of the four hypotheses tested within the study being rejected. A significant link was only found between gender and risk perception of inappropriate interactions (overtly sexual messages, unwanted advances, and aggression). These findings contribute to the understanding of risk as an individual-centric and complex topic, one deserving further exploration. Additionally, the results prompt reflection on whether gender and sexual orientation truly do play such an integral role in human perception and behavior, a topic that deserves more extensive exploration both within and without online dating.

KEYWORDS: *Tinder, online dating, gender, sexual orientation, perceived risks*

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1. INTRODUCTION

The world is becoming increasingly digitalized: 63.4% of people worldwide have easy access to what is essentially a palm-sized computer connected to the Internet, readily available at their fingertips (Statista, 2019). Digital apps seem to be created for any and all purposes, from government affairs to mindless leisure-time (Arora, 2019, p.8). In fact, the digital realm has ingrained itself into human day-to-day lives to such an extent, that it can be argued that it is an additional, complementary plane of existence, an extension to the physical world. Digital opportunities have made daily tasks such as banking, shopping, making appointments and keeping in touch much easier, with mobile apps being created to facilitate virtually every aspect of life (Arora, 2019, p. 158). Technology and the digital realm have also infiltrated human intimacy and private romantic lives. Dating is now two-fold, existing both on- and offline, with some relationships being exclusively digital, but few existing entirely outside of the digital plane. Therefore, it would be insightful to explore the broad topic of dating and technology, more specifically focusing on elements of the popular dating mobile application Tinder. To understand Tinder's specific place in the tapestry of (online) dating however, romantic dating off- and online must first be reviewed.

1.1. Off- and online dating

Love and, by extension, romantic dating is an integral part of human life. Its function is complex, taking root in both human biology and society and culture (Goode, 1959). Dating is very different among different cultures, as well as throughout time, with marriage usually being the singular goal of dating as late as the first half of the last century (Goode, 1959). In recent years, however, dating has become more casual, specifically among young people in Western societies (Claxton & van Dulmen, 2013). It is not uncommon to go on dates for material profit (i.e. to get a free meal), to engage in purely physical activities, or to date multiple people at once without aiming to marry any of them. Casual dating, while very similar to traditional serious dating, is simultaneously very different. For example, in traditional dating an individual has one person they rely on for physical, emotional, and mental support. In casual dating, an individual has multiple partners in the initial stages of their relationship, in a way situating casual dating as a sort of prologue to traditional monogamous dating. Contrastingly, life has become more fast-paced leading to people becoming less social overall, thus allowing for less possibilities to meet these various casual partners (Claxton & van Dulmen, 2013). It is here that online dating comes into play.

Online dating became a reality as soon as the internet became publicly available in 1991,

with the website Match.com being launched in 1995 and operating in twenty-four countries shortly thereafter (Walker & Eller, 2016). Through that platform over four million users initially met and interacted with someone in a romantic way (Walker & Eller, 2016). This quick adaptation of a new technology for romantic gain is not a novel concept, as dating ads in newspapers have existed since the dawn of the printed press (Bolig, Stein, & McKenry, 1984). Twenty-five years after Match.com launched, stigma associated with online dating still exists, mostly perpetrated by non-online daters (Doan, 2010). Still, numbers speak in favor of online dating with a fifth of Americans aged 25-34 having used online dating in 2014 (Smith, & Anderson, 2016), as well as 11% of U.S. population across different age groups in 2016 (Abramova, Baumann, Krasnova & Buxmann, 2016). Thus, the advancement of technology and the accessibility to mobile devices by a growing number of users, has transformed online dating into a key way of romantically or sexually interacting with others (Gatter & Hodkinson, 2015; Hance et al., 2018) and therefore deserves further exploration. In its nature, online dating as a place for romantic connections enables individuals to be more honest about their inner self than in offline relationships, allowing for deeper connections to be established. Still, not every online dating service user is looking for a relationship, or a deep connection, specifically applied to younger users (Pham, 2017). Many younger users are looking for casual relationships, oftentimes purely sexual. Online dating services usually market themselves towards finding romance and dating, whereas Tinder managed to insert themselves as a easy-to-access space of mostly casual relations, filling a gap in demand for younger online daters.

1.2. Tinder

Launched in 2012, the mobile application put the access to a dating universe at a user's fingertips, revolutionizing online dating (March, Grieve, Marrington & Jonason, 2017). Tinder is a geosocial networking application (GSN application), that connects users that are a given distance away from one another, by using their device's location information (Hahn et al., 2018). Through the simple motion of swiping left or right on another users' profile, any Tinder user can indicate whether they are attracted to someone. When two people indicate attraction, they "match" and can begin chatting on the app, discuss what they are looking for and potentially meet in real life. As such, Tinder eliminates a lot of steps in traditional dating, such as deciding to go out to a social venue (i.e. a bar or club) in search for romance, establishing whether someone is attracted to you based on body language and, finally, approaching them (March et al., 2017). While these traits of engagement are overall consistent with online dating, Tinder allows users to access its dating universe at any moment through their smartphone, a convenience that dating

websites such as Match.com did not include. As such, the accessibility to romantic involvement facilitated by Tinder could explain the app's infamy as a "hook-up app" (Pham, 2017).

1.2.1. Advantages of Tinder

The accessibility of Tinder, as described above, is one of the biggest positives the mobile application offers. Still, there are several other considerable pros of Tinder, five of which will be reviewed below: intuitive design, temporally optimal, practice area of dating, instant gratification, and socializing.

Tinder's attractive and intuitive design is part of the application's charm. The application's design is heavily, sometimes exclusively, visually engaging (Krüger & Spilde, 2019). It plays on the binary logic of judging a book by its cover—when a profile is presented to a user, they must swipe left or right, essentially saying *no* or *yes* to engaging in Tinder relations with the person behind the profile (Krüger & Spilde, 2019). This can be understood as an extension to the real-life phenomenon of finding someone attractive when engaging them in everyday social scenarios (Ward, 2017). The difference is that in the realm of Tinder, users have the intuitive knowledge that the person opposite is looking for similar romantic engagement and is, possibly, attracted to them; knowledge which they do not possess in the offline world. In a word, Tinder renders dating, or at least the initial stages of it, *easy*.

This state of ease is present in other aspects of Tinder, such as the above-discussed accessibility and the dimension of temporal optimization it lends dating. Traditional dating or the initial stages of dating require temporal resource in order to get ready for a social interaction, arrive at a social destination, find a person of interest, initiate conversation (or allow potential partners to do so) and engage in conversation to find whether your needs and expectations are compatible. Contrastingly, Tinder interactions can reach the same stage of finding out a potential partner's needs and expectations as early as a user's profile pops up for swiping or a first message after a match. Additionally, swiping and messaging can be done at any point of day, during any other activity, as long as an internet connection is present (Krüger & Spilde, 2019).

This temporally convenient way of interacting with potential partners leads to instant gratification. Gratification, according to Katz, Blumler and Gurevitch (1973), is the way individuals use communication as a way to achieve their goals and satisfy their needs. Tinder, as an accessible platform (temporally and otherwise), can lead to instant gratification of sexual, social or romantic needs, as early as a match (Timmermans & De Caluwé, 2017).

An important note to make is that Tinder isn't inherently created for gratification purposes. In fact, Tinder should be regarded as a playing field which merely facilitates each

individual user's access to their goal of use. The motivations for the use of Tinder are, thus, numerous—they include boredom, romance, friendship, casual or serious relations, among others (Timmermans & De Caluwé, 2017). What all of these motivations for use have in common is their inherent sociability. Tinder is an interactive app, made to connect users, allowing them to socialize at all times, even when doing so isn't physically possible. What these interactions will lead to, both on- and offline, is entirely up to the users (Timmermans, & Courtois, 2018). As such, to some users Tinder can be an area for initial romantic interactions, while for others it is a practice area on how to flirt and interact in real life, enabling users to use the application for a variety of reasons in a variety of ways (casual dating, looking for friendship, trolling, etc). The variety of uses Tinder proposes, carries some risks as well, as advantages and disadvantages go hand in hand.

1.2.2. Disadvantages of Tinder

While an overall enjoyable experience, the use of Tinder has certain drawbacks, such as a lack of proper first impressions, safety and privacy concerns, and potential scamming.

First impressions are quickly created in intrapersonal communication and are usually dependent on an established communicative script (Kimbrough, Guadagno, Muscanell & Dill, 2013). Establishing a first impression is rendered more difficult through digital means, as the digital eliminates a large portion of non-verbal communication. Intrapersonal communication is predominantly non-verbal, with most of the information shared contained within the body language and inflection used, as opposed to the words chosen (Mehrabian, 1972). This is a drawback to Tinder communication, as the only type of communication possible in-app is the written word and a restricted number of visual cues (i.e. emoticons and GIFs). Eliminating many of the essential communicators makes Tinder and the people on it appear non-real, potentially creating a dissonance between the person on the picture and the real person. This can lead to two opposing issues. The first one is that any user can pretend to be someone they are not. Depending on the user's motivations this could range from putting their best foot forward, to actually scamming other users by advertising goods and services (Lutz & Ranzini, 2017). In this case, each individual's motivations for use and personality traits are the deciding factor on whether their actions will hurt others (by scamming) or they will put in effort to have a pleasant experience on the app, even though both participants might not like each other once they meet in person. The second potential issue is that, based on a mistaken first impression, a user could swipe left on a compatible partner, thus potentially missing out on fulfilling their goals of using Tinder (Ward, 2017). This potential issue is more related to the Tinder algorithm, as the high level

of gamification employed in the swiping motion can shift the perception of the swiper (Krüger, & Spilde, 2019).

Another negative aspect of Tinder use is one consistent with any mobile applications: safety and privacy concerns (Lutz & Ranzini, 2017). Tinder, as a GSN application, gathers and wields users' location information. This data is necessary for Tinder to function due to its nature of connecting users with people in spatial proximity, however it is not always properly protected. Furthermore, a Tinder account can be created by either using an individual's Facebook account or phone number, both sensitive information (Dreijer & van den Haak, 2014). Tinder data leaks happen often enough, with the latest one occurring in the beginning of 2020 (Cameron & Wodinsky, 2020). As such, it appears that Tinder does not do enough to ensure users' data stays private, and oftentimes the disadvantages of using Tinder could also be understood as risks, linked to its use. For example, a lax privacy policy can be a nuisance or a general "minus" to the use of Tinder, but it can also pose risks to the individuals, if their information falls into the wrong hands as a consequence of a Tinder data leak. Despite undoubtedly being a household name, Tinder is an infamous mobile application, originally due to its close association with casual sex and its non-transparent privacy policies (Lutz & Ranzini, 2017; March et al, 2017). This infamy, while grounded, is mainly shared by non-users, and is linked to the lingering stigma of online dating (Doan, 2010). Exploring the perspective of online daters, as opposed to focusing on the negative aspects perceived by non-users is thus more reliable, as their perceptions are based on experiences rather than stigma.

The exploration of user perspectives will be done by comparing groups between each other, to test whether a certain risk perception is dependent on personal characteristics. To this end, two of the central characteristics a person could have (in the context of dating) were chosen as predictors of risk perception. These characteristics are gender and sexual orientation. Gender differences in intrapersonal relations, whether they stem from societal norms, gender typing, communicative scripts or other factors, have been observed in academic literature (Duncan & March, 2019; Guadagno et al., 2012; Weiser, 2001). Similarly, use of dating applications, romantic interactions and non-verbal communication vary depending on sexual orientation (Knöfler & Imhof, 2007; Lever et al., 2008). As such, those two characteristics have a historical and academic link to the exploration of dating, as well as being key differentiators of communicative styles (Knöfler & Imhof, 2007). Therefore, the popular risks mentioned above will be explored in the context of their variance depending on gender and sexual orientation and will strive to answer *to what extent do the perceived risks of Tinder differ between male and female users and to what extent is that influenced by sexual orientation?*

1.3. Academic relevance

Tinder facilitates intrapersonal communication between users of similar goals and has so far been established as a playing field of romantic connections gathering all willing participants and has revolutionized online dating (March et al., 2017). Simultaneously, the limited user authentication, presents Tinder users with a myriad of potential risks, associated with interacting with random strangers online (Gillett, 2018). Initially, a Facebook account was required to set up a Tinder profile. Now, a phone number is also required for further authentication, however a phone number without a linked Facebook account is also acceptable. These two items are the only requirement, and subsequently, authenticity verification Tinder performs on their users (Gillett, 2018). This makes Tinder a risky place by default, as it does not ensure a very high level of user privacy. Still, it is individual motivations for use that lead to an actual risk for Tinder users, as the mobile application does not inherently harm. Rochat, Bianchi-Demicheli, Aboujaoude and Khazaal (2019) explored the likeliness of Tinder users being “problematic”. They found four reliable clusters of users— two with low levels of problematic use ("regulated" and "regulated with low sexual desire"), one with an intermediate level of problematic use ("unregulated-avoidants"), and one with a high level of problematic use ("unregulated-highly motivated") (Rochat et al., 2019). This conclusion is simultaneously calming and concerning, as it shows that Tinder isn't inherently risky, yet it warns of the possibility of running into users who would use the app for harmful purposes. As established above, there is a myriad of potential risks, and so far, no single study has focused on exploring multiple, popular, risks associated with the use of Tinder. The present research aims to fill that gap. It will focus on exploring topics relative to Tinder and emotional harm (unpleasant interactions, fake profiles), privacy concerns (hacking, data leaks, cyberstalking (Lutz & Ranzini, 2017)), and bodily harm (contracting an STD or STI from an interaction with a Tinder user) (Gillett, 2018).

A broader academic exploration of Tinder risks will aid to expand the currently limited literature on the topic of online dating. Additionally, it will further the literature on two of the main predictors of human behavior as established in literature—gender and sexual orientation. Communication theory, which explains how information is created and shared between participants, leads us to believe that men and women communicate in consistently different ways both on- and offline (Guadagno et al, 2011). However, it is uncertain whether this is due to inherent gender differences or an uphold of societal gender expectations. Further research on gender in a specific communicative digital environment can greatly contribute to understanding all concepts involved. Concurrently, it is theorized that communicative scripts do vary in a romantic capacity among different sexualities (Lever et al, 2008). Thus, the present study will

further the understanding of human behavior as dependent on these characteristics, as well as provide further information on a limited topic.

1.4. Societal relevance

From a societal standpoint, Tinder holds the key position of currently being the most popular dating application available, with 57 million active users in 190 countries and across 40 languages (Iqbal, 2020). Independent of its infamy for an app facilitating casual sex and doing little more, Tinder's principal aim is to form romantic connections (Pham, 2017). Tinder can thus be linked to key societal bonds such as relationships, procreation, and the need for romance. As such, it is the logical go-to for any individual who wants to explore the online dating scene, or for any researcher that wants to narrow down the large field of online dating to only one channel. Researching the perceived risks of Tinder also contributes to the spread of information on the dangers of using a relatively new mode of dating and relationship-building. Finally, discussion on a topic helps fight unfounded stigma, as is the case with Tinder.

1.5. Chapter outline

The remaining study will be structured as follows: the theoretical framework is presented in chapter two. It is comprised of previous studies on the topic of Tinder, gender, and sexual orientation. The motivations for the use of Tinder, its link to casual sex, as well as the issues surrounding privacy and geosocial networking applications will, among other topics, be further developed and relevant concepts will be introduced and discussed, such as gender communication theory. Furthermore, chapter two, Theoretical framework, will introduce the four hypotheses through which this research will explore the research question *to what extent do the perceived risks of Tinder differ between male and female users and to what extent is that influenced by sexual orientation?* To answer the research question, an experiment will be conducted, the method and variables of which will be included in chapter three, Methodology. The research design, operationalization, reliability and validity, and method of analysis will also be included in chapter three. Chapter four will present the findings of the experiment, as well as a short discussion on their importance. It is there that the descriptive statistics and test of each hypothesis can be found. Finally, chapter five, Conclusion, will further develop the significance of the findings, propose their relevant academic and societal implications, as well as presenting the study's limitations and proposing a direction for further research.

2. Theoretical framework

2.1. Tinder

The topic of Tinder has a relatively short history, with academic studies beginning to come out in 2015 (Duguay, 2015, Gatter & Hodkinson, 2015). While each study is different and thus targets a specific aspect of Tinder, the main topics discussed around the application usually explore motivations for use, sexual relations, indecent interactions, personality types of users and general Tinder use (preferences, initial interaction, privacy, etc). Of course, these categories aren't self-standing, with studies regularly exploring the connections between elements from different categories. For example, Timmermans, De Caluwé and Alexopoulos' 2018 study combines the categories of personality of Tinder users and motivations for use. Nonetheless, the categories outlined above represent the main topics of discussion surrounding Tinder.

2.1.1. Motivations for use

One of the most researched topics around Tinder is the different motivations for Tinder use (Timmermans & De Caluwé, 2017, Weiser et al., 2018). Timmermans and De Caluwé (2017) developed a Tinder Motivation Scale (TMS), consisting of 13 items: Social Approval, Relationship Seeking, Sexual Experience, Flirting/Social Skills, Travelling, Ex, Belongingness, Peer Pressure, Socializing, Sexual Orientation, Pass Time/Entertainment, Distraction, and Curiosity, summarizing the most widespread motivations for the use of Tinder (Timmermans & De Caluwé, 2017). The scale was developed and validated through four independent studies, both qualitative and quantitative, including a total of 3262 participants (Timmermans & De Caluwé, 2017). This scale was employed in further research on Tinder, namely in research converging specific personality traits and motivations for use (Timmermans & De Caluwé, 2017). This research explored how the Big Five personality traits of neuroticism, extraversion, openness, agreeableness, and conscientiousness relate to Tinder motivations and use (John & Srivastava, 1999). It found that single Tinder users are more extraverted and open to new experiences than single non-users, users with higher scores on agreeableness are less likely to engage in risky sexual behavior, users with higher scores on extraversion are less likely to use Tinder to find a romantic partner and to improve their flirting/social skills, and people with low extroversion scores are more likely to use Tinder to improve social skills (Timmermans & De Caluwé, 2017). Still, not all literature exploring Tinder motivations is based on TMS.

Sumter, Vandenbosch and Ligtenberg (2017) also explore Tinder motivations, finding only 6 reasons to use the application: Love, Casual Sex, Ease of Communication, Self-Worth Validation, Thrill of Excitement, and Trendiness. Their research was on a smaller scale, involving

only 266 emerging adults (aged 18-30) and a quantitative method (Sumter, Vandenbosch & Ligtenberg, 2017). While these motivations mostly overlap with the motivations found within TMS, due to being explored in the context of personality traits, both scales ignore a specific motivation for the use of Tinder: infidelity.

This gap was filled by Weiser et al. (2018). Their study found that almost a fifth of participants had messaged someone on Tinder while being in an exclusive relationship, and 7% of respondents had admitted to having sexual relations with someone they met on Tinder while committed, engaging in offline infidelity (Weiser et al., 2018). Additionally, the majority of participants indicated that they had interacted with Tinder users who were in an exclusive relationship (Weiser et al., 2018). A limitation to these results was the lack of demographic diversity, having surveyed students from a singular college, as well as the lack of accountability for personality traits as bigger drivers for infidelity than relationship status. These limitations were tackled by Timmermans, De Caluwé and Alexopoulos (2018), who compared non-single to single Tinder users' motives for using the app, their personality traits, and their engagement in online and offline behaviors with other Tinder users, using two independent samples (Timmermans, De Caluwé & Alexopoulos, 2018). The study found that users in a romantic relationship scored significantly lower than single users on the motives of Relationship Seeking, Flirting, Sexual Orientation, and Forget Ex, appearing more interested in seeking short-term encounters. Additionally, the personality traits of Extraversion and Openness were positively associated with non-single users' motives related to seeking opportunities for meeting other people, such as Travelling, and Openness was positively associated with Sexual Orientation and Socializing (Timmermans, De Caluwé & Alexopoulos, 2018).

It can therefore be concluded that there is a set number of motivations for the use of Tinder, the motivations themselves varying based on different influencing factors such as personality and relationship status. It should also be noted that motivations for the use of Tinder were only explored against a specific quality (personality traits or relationship status). As such, Tinder is explored as an environment for specific behavior, as opposed to influencing behavior by itself. Nonetheless, motivations for the use of Tinder is the most widely explored aspect of Tinder.

2.1.2. Hook-up culture and casual sex

The above variance in motivations for use can be explained by Tinder's infamy, namely, its reputation as a "hook-up app" (Sevi, Aral & Eskenazi, 2018). Hook-up culture, the act of engaging in non-committed, short-term physical relations is becoming the new normal for young

adults in terms of romantic relationships (Heldman & Wade, 2010). Concurrently, casual sex is a motivator for Tinder use found in TMS, as well as Sumter, Vandenbosch and Ligtenberg's 2017 research, marking the key place of casual sex within Tinder. This phenomenon was observed within the queer urban community in London in an interview-based research, which underlined the frequent use of Tinder for casual sex, over socializing in this limited community (Miles, 2017). In 2018, Sevi, Aral and Eskenazi explored the underlying connections between sociosexuality (an individual's willingness to engage in casual sexual contact) and sexual disgust sensitivity (the biological mechanism that prevents reproduction with suboptimal partners) as predictors of casual sex motivation for Tinder use (Sevi, Aral & Eskenazi, 2018). The study confirmed a negative correlation between participants' sexual disgust sensitivity and motivation for casual sex in their Tinder use, as well as a positive correlation between sociosexuality and motivation to use Tinder for casual sex (Sevi, Aral & Eskenazi, 2018). In short, participants with higher scores of sociosexuality are more likely to use Tinder to find casual sex, while participants with higher scores of sexual disgust sensitivity are less likely to do the same.

2.1.3. Sexual health and risk groups

Whether Tinder's infamy as a "hook-up app", as stated above, is deserved or not, it has become apparent that users do use the mobile application with the goal of casual sex. Sex with multiple partners in the same period presents certain risks, related but not exclusive to sexual health (Rogge, Crasta & Legate, 2019). Still, Tinder and sexual relationships certainly converge on the topic of sexual health, specifically within the men seeking men (MSM) community. MSM have long been dubbed an at-risk group for sexually transmitted infections and diseases, largely due to a sexually liberated lifestyle (Wolitski, & Fenton, 2011). Articles on the topic intersecting MSM sexual health and Tinder either explore Tinder as an opportunity for HIV prevention (Hahn et al., 2018) or as magnifying sexual risk behavior (Badal et al., 2018, Maliepaard & van Lisdonk, 2019, Rogge, Crasta & Legate, 2019). MSM continues to be the group most disproportionately affected by HIV (Badal et al., 2018), underlining the importance of innovative and effective ways of information and prevention. Geosocial networking applications (GSN), due to their nature of uniting individuals of the same target group, are the easiest place to tailor efforts and messages to these high-risk groups (Hahn et al., 2018). While no differences in sexual risk behavior have been found between MSM Tinder users and non-users (Hahn et al., 2018, Rogge, Crasta & Legate, 2019), an alarmingly high percentage of MSM Tinder users report inconsistent condom use both with their main (77.9%) and casual partners (62.9%) (Badal et al., 2018). As such, contracting an STD or STI as a result of sexual relations is a real risk for MSM, which is magnified by Tinder

providing accessibility for casual sexual relations.

2.1.4. Normalization of inappropriate interactions

Contracting an STD or STI as a result of a real-life interaction with another Tinder user is surely an unpleasant situation that arises outside of Tinder. Unfortunately, it is not the only negative consequence as a result of interacting with other users. Due to its nature of being a magnifier of human behavior, the platform has a dark side: inappropriate interactions. These interactions can take the form of unwanted, overtly sexual or abusive messages, catfishing and promotional profiles for a lucrative end.

Catfishing is an umbrella term for all instances of pretending to be someone else online, falling within the broader category of trolling behavior, purposefully acting in a harmful or unpleasant manner (Nolan, 2015). Catfishing is not necessarily the use of a completely fake profile, as it might be simply presenting yourself in a more favorable light. In fact, around 80% of heterosexual users admit to including at least one piece of untrue information about their observable characteristics in their profiles (Toma, Hancock, & Ellison, 2008), with men reporting higher instances of altering personal information over women (Guadagno, Okdie & Kruse, 2012). While some cases of catfishing are limited to a disappointing interaction or incite no reaction, others have a financial side. It is not uncommon for fake profiles to advertise sexual favors for payment, a phenomenon usually targeting a male audience (Whitty & Buchanan, 2016). These interactions are considered unpleasant and inappropriate, and can even have real financial repercussion, however they do not constitute the entirety of inappropriate messages that can be received on Tinder.

Trolling behavior is widespread on the platform and often takes the much darker form of sexist, overly sexual, abusive and aggressive messages (March, Grieve, Marrington & Jonason, 2017). Smith and Duggan (2013) reported that 42% of female dating app users have been harassed or been subject to uncomfortable contact online, compared with 17% of men (Smith & Duggan, 2013). Women being messaged almost instantaneously with overtly sexual, aggressive or downright offensive lines has become a rampant experience on Tinder, generating commentary blogs and social media accounts such as “Bye Felipe” and “Tinder Nightmares” (Thompson, 2018). It should be noted that being a (female) Tinder user does not necessarily lead to the receipt of inappropriate or abusive messages, rather it’s being unlucky and matching with someone with an unfavorable personality type, a result of the platform magnifying human personality.

Studies on the personality of Tinder users are specifically interested in two groups of

personality traits: the big five and the dark tetrad. The big five personality traits are neuroticism, extraversion, openness, agreeableness, and conscientiousness (John & Srivastava, 1999). As mentioned above, these personality traits are mainly used in literature to profile the type of person that would use Tinder, specifically whether the combination of personality type and relationship status can provide some insight into the motivations for Tinder use (Timmermans & De Caluwé, 2017). The dark tetrad is a psychological term which refers to a personality type consisting of four negative personality traits, broadly associated with hurtful actions towards others. The traits in question are psychopathy, an indifference to the feelings or fate of others, narcissism, a maladaptive form of self-obsession, Machiavellianism, linked to manipulative behavior, and sadism, the enjoyment of hurting others (March et al., 2017). A person with a combination of the four traits mentioned above tends to not find others' feelings and experiences as important as their own needs and emotions. The presence of people of such personality facilitates certain inappropriate behaviors such as the normalization of misogyny and toxic masculinity, a collection of "socially regressive male traits that serve to foster domination, the devaluation of women, homophobia, and wanton violence" (Kupers, 2005). March, Grieve, Marrington and Jonason (2017) propose the existence of a possible connection between dark personality traits and abusive messages on Tinder, suggesting it should be further explored (March et al., 2017).

2.1.5. Privacy online

Another topic explored in the conversation around Tinder has to do with user safety and privacy. In the cases above (catfishing and inappropriate messages) the user can do relatively little to protect themselves. Unmatching and reporting are the only tools available, and how Tinder handles the situation afterwards isn't transparent. In fact, Tinder has virtually no screening process. Initially, a Facebook profile was required to start an account, but now one can be created with only a phone number (Dreijer & van den Haak, 2014). Safety concerns go along with privacy concerns, as sensitive data can be exchanged through Tinder, even data that makes the individual identifiable (Dreijer & van den Haak, 2014). Most of the literature written on the subject explores institutional (Tinder sharing personal user data with third parties) and social privacy (cyberstalking, personal information shared on the site being visible by undesirable users) (Lutz & Ranzini, 2017), as a way to determine user concerns. The topic of privacy on Tinder will be further discussed later in this chapter.

2.1.6. Preferences and online engagement

The last topic explored in literature is general user experiences on Tinder, exploring themes related to individuals' mating preferences (Neyt, Baert & Vandenbulcke, 2020, Ward,

2017) and initial interaction (LeFebvre, 2018). LeFebvre (2018) indicates that Tinder does indeed alter the process of romantic interaction online by allowing for interaction only once a match is established (i.e. assured two-way interest). This is not necessarily the case in other online dating platforms, where you can message other users only based on one-way interest, such as Match.com (LeFebvre, 2018). Additionally, Tinder transforms the pre-interaction processes to include strategic behaviors differing from strategies applied to interacting offline (LeFebvre, 2018). Users select photos in an attempt to present an ideal yet authentic self (Ward, 2017), an action exclusive to online dating. Similarly, users prefer interacting with people appearing to match their projected self (Neyt et al., 2020). The exploration of usual Tinder engagement serves as a theoretical basis to understand the type of person who uses the application. The role of personality is included as well, with Neyt et al.'s study (2020) cross-referencing motivations for use, the Big Five personality traits and mating preferences and stipulating that Tinder users usually look for someone similar to themselves.

By exploring the six widely researched topics surrounding Tinder mentioned above (motivations for use, hook-up culture and casual sex, normalization of inappropriate interactions, privacy online, and preferences and online engagement) certain risks can be noticed. For example, privacy concerns are intrinsically tied to all geosocial networking applications, Tinder included, due to the necessity of location use to operate these applications. So far, literature has only explored specific risks of Tinder, lacking a singular study which encompasses several potential risks (Gillett, 2018).

2.2. Perceived risks of Tinder

The broader topic of the perceived risks of online dating was explored by Couch, Liamputtong and Pitts in 2012. Their research used a qualitative method: they performed in-depth interviews through online means (instant messaging application and email) on 29 past or present online dating website users. Only one of the respondents was of American nationality, with all of the others being Australian. This research found six perceived risks to online dating: risk of lies and deceit, emotional and sexual risks, risks and experiences of violence, the internet as a risky place, risk comparison and risk to others, and the risky "other" (Couch, Liamputtong & Pitts, 2012). Four of these risks align with the four hypotheses established below, namely risks of lies and deceit, the internet as a risky place and the risky "other". The present research can build on Couch, Liamputtong and Pitts' 2012 findings, as it uses a different method, a broader sample and is focusing on one particular online dating platform.

Tinder provides a playing field in which different risks can arise, as opposed to causing

them; as such the dating application is merely an enabler of human activity (Gillett, 2018). Simply, it facilitates intrapersonal access, yet gives no guarantee of the quality of the interaction, making it perfect breeding ground for potential risks (Gillett, 2018). These risks can vary for each individual, as it is not necessary for every user to face every risk. In fact, some groups may be more likely to perceive a specific risk as a bigger threat, as opposed to other groups (Gilett, 2018). As such, gender and sexual orientation were chosen as differentiators in the present research on the perceived risks of Tinder use. The choice is due to a longstanding practice of exploring the potential differences that arise based on these characteristics (Abramova et al., 2016). In the present study, four types of risks associated with the use of Tinder will be specifically examined: inappropriate online engagement, privacy concerns, deceptive interactions and health risks, associated with sexual activity. These risks were selected for exploration due to literature pointing towards a variance within these topics, depending on gender or sexual orientation. Thus, exploring these risks will measure to what extent do the perceived risks of Tinder differ between male and female users and to what extent is that influenced by sexual orientation?

2.2.1. Gender as predictor for (online) communication and behavior

The research question of this study is focused on examining the specific differences in the context of gender and sexual orientation. In fact, gender differences have long been explored in different fields of academic literature (behavioral, environmental or otherwise). On the topic of communication, Tannen (1990) theorized that men and women come from two different cultures of communicating. Women are more likely to appreciate others' help (advice or sympathy) or offer sympathy, while men tend to avoid and discount problems more than women, and are less likely to accept help (Tannen, 1990). This gendered difference when it comes to communication style can be further explored in the digital field, specifically when relative to chatting and flirting online. Weiser (2001) stipulated that when comparing gender, men are more likely to use the Internet to search for dates, while women are more likely to use it for intrapersonal communication, such as chatting and email.

The present research is built on the understanding that the digital world is an additional plane of existence to the physical world and is thus complementary to it. This is confirmed as relative to gender-based functions and gendered behavior online by Guadagno et al. (2011), who showed that in a virtual online community called Second Life, people behaved according to traditional gender roles. Women reported in engaging in communal activities such as meeting people and shopping, while men reported engaging in agentic activities such as property owning (Guadagno et al., 2011). This suggests that men and women choose to behave in a way consistent

with social role expectations, even when they have the freedom to behave in whatever way they want, within the relative anonymity and lack of social expectations in the digital space. As such, exploring gender differences online can be reliably done based on research conducted in a physical real-life setting.

The theory established above doesn't necessarily touch on gender differences in Tinder communication. In fact, relatively little literature is written on the specific topic of Tinder communication as different based on gender. Gendered motivations for the use of Tinder, however, have been explored. Ingram (2019) found that men tend to use Tinder for sex, travel and starting a relationship, whereas women use it more for friendship and self-validation. Timmermans and De Caluwé (2017) corroborated Ingram's findings of men using Tinder for casual sex more than women, finding a significant difference. Gender was also found to be a significant predictor for antisocial behavior online. Duncan and March (2019) researched the presence of dark personality traits and antisocial behavior on Tinder, with gender as a main predictor. Despite having based their research in a myriad of research stipulating that men are more likely to perpetrate antisocial behaviors than women when dating (Couch, Liamputtong, and Pitts, 2012; Guadagno et al., 2012; Thompson, 2018), Duncan and March's research didn't yield significant results. In fact, they found a lack of gender difference in perpetrating antisocial behaviors on Tinder (Duncan & March, 2019).

Therefore, it should be noted that gender typing may play a decisive role in researching and understanding gender differences, more so than gender itself. For example, both men and women can express stereotypically male traits, as well as typically female traits (Bem, 1978). As such, gender-typed traits rather than gender are the differentiating factor. Still, based on the differences in (online) communication styles and motivations for the use of Tinder found in literature, this research has defined gender as one of the central differentiators of (online) behavior.

2.2.1.1. Inappropriate engagement on Tinder

Above, the term inappropriate interactions on Tinder was used as an umbrella term that encompasses various inappropriate behaviors, such as inappropriate engagement in the form of lewd messages, deceptive profiles and catfishing. Inappropriate engagement on Tinder is usually understood as the receipt of overly sexual, aggressive and even abusive messages. The term "abuse", as will be used in this research, is not limited or necessarily linked to physical violence; it includes online harassment and inappropriate interactions (Gillett, 2018). Online harassment and abuse, specifically with sexual undertones is not a novel concept, nor is it limited to dating

platforms. In fact, 53% of women have experienced some sort of sexual harassment in their lives, according to Australia's 2016 personal safety survey (ABS, 2016). Those figures are disheartening, as the gender norms that underpin the harassment of women in the physical realm are shown to be easily translated into the digital space (Baym, 2010). Expectation management could explain this discrepancy in men being (unwantedly) sexually forward with women online. Gendered differences in communication position males in a more proactive position, using online communication as a way to find a sexual partner, as opposed to women who are happy to use it simply for socializing (Weiser, 2001). This difference in communicative goals, as well as Tinder's infamy as a hook-up app and its inherent relation to easy access to sex could explain the gendered disproportion of online harassment and abuse (Pham, 2017).

Still, harassing interactions online are so popular, that they have given rise to much entertaining online content, such as reaction videos, forum entries and dedicated Instagram and Facebook pages like "Bye, Felipe" and "Tinder Nightmares" (Thompson, 2018). Differing from "Bye, Felipe", a page dedicated to exclusively male-to-female interactions, the Instagram account "Tinder Nightmares" isn't specifically targeted towards the experiences of women online, yet it is still dominated by men-to-women harassment (Thompson, 2018). This is in line with the fact that most inappropriate interactions have been perpetrated by men and suffered by women (Farvid & Aisher, 2016; Gillett, 2018). Would that mean that men are more likely than women to send out abusive content? Historically, women have been the subject of gender-based violence. Liz Kelly (2013) developed a theoretical framework explaining how gendered abuse and harassment is experienced by the majority of women, becoming 'ordinary', rather than 'aberrant' (Kelly, 2013).

Of course, as mentioned above, not all Tinder users engage in such messages, rather users with a specific range of personality traits do—the dark tetrad. Earlier, the term dark tetrad was introduced, with a range of academic research having explored this personality type as connected to Tinder use (Duncan & March, 2019; Lyons, Messenger, Perry & Brewer, 2020; March et al., 2017; Timmermans, De Caluwé & Alexopoulos, 2018). The results of Duncan and March's study (2019) point to a higher number of men exhibiting personality traits consistent with the dark tetrad as opposed to women (Duncan & March, 2019). It can therefore be surmised that the risk of receiving inappropriate messages is higher for users interacting with men. Combining this conclusion with the theory established above, regarding women being subjected to inappropriate messages more than men, leads to hypothesis one.

H1: women on Tinder perceive inappropriate online engagement as a bigger risk than men.

2.2.1.2. *Deceptive interactions on Tinder*

All online interactions run the risk of deception for all parties involved. While this isn't an anomaly when interacting with a stranger, due to the virtual nature of the interaction, most non-verbal cues humans use to navigate interactions are not present (Couch, Liamputtong & Pitts, 2012). Such environment is a breeding ground for deception, specifically due to Tinder's lax verification process. Deception is a term applied to all instances of dishonestly. In this research deceptive behavior on Tinder will be understood with respect to profiles established for financial gain and specific catfishing behavior. Usually, deceptive behavior can include trolling behavior, the act of purposefully engaging someone online in a provocative or offensive way (March et al., 2017). This behavior, however, is less emotionally or monetarily damaging compared to catfishing and financial scams and will thus not be used to define a deceptive Tinder profile.

Users of online dating agencies report instances of dealing with fake profiles, inaccurate pictures and self-presentation, and even financial scams, making these instances relatively frequent (Couch, Liamputtong & Pitts, 2012). Financial scams usually include grooming the victim into an emotional relationship, with one woman reporting being swindled out of \$2000 as a result of a 9-month communication (Couch, Liamputtong & Pitts, 2012). While deceitful profiles can target any user, regardless of gender and sexual orientation males are usually more aware of the possibility of online deceit (Whitty & Buchanan, 2016). Additionally, men are less likely to continue exclusively online communication for a prolonged period of time, as opposed to women, (Weiser, 2001). As such, men can be regarded as more highly aware of the dangers of deceitful online interactions as compared to women, formulating hypothesis two.

H2: men perceive deceptive Tinder profiles as a bigger risk than women.

2.2.1.3. *Privacy on Tinder*

Above, privacy is divided into institutional privacy and social privacy. According to Raynes-Goldie (2010) social privacy refers to situations where other individuals are involved, oftentimes acquaintances. For example, receiving an inappropriate friend request, publishing an individual's personal, identifiable information on the Internet (doxing) or being stalked by a colleague is an act of social privacy violations (Raynes-Goldie, 2010). Alternatively, institutional privacy is all action relative to how institutions or online platforms (in this case, Tinder) protect user data (Raynes-Goldie, 2010). Data leaks and selling user data are examples of institutional privacy breaches.

Studies centering around social network sites have found that young users are more concerned about their social privacy than their institutional privacy (Raynes-Goldie, 2010; Young

& Quan-Haase, 2013). Social privacy concerns are easier to understand for users since they revolve around user behavior, and thus allow users to adapt their privacy behavior online to protect their social privacy (Lutz & Ranzini, 2017). The same cannot be done for institutional privacy, however, as users cannot do much to ensure their data will not leak or be sold. This is why Lutz and Ranzini (2017) found that institutional concerns on Tinder outweigh social ones.

Outside of social media, data protection and privacy online have been explored in academic literature with respect to various activities such as online shopping, social-media use and responsiveness to e-marketing (Garbarino & Strahilevitz, 2004; Soffer & Cohen, 2014; Youn & Hall, 2008). The results to these studies have been consistent— females show higher levels of privacy concerns than males in online activity (Garbarino & Strahilevitz, 2004; Soffer & Cohen, 2014; Youn & Hall, 2008). Hypothesis three builds on the observed differences in the perception of privacy risks in other online behavior (Youn & Hall, 2008) as well as the observable phenomenon of women being subject to online abuse more than men, and thus more conscientious of social privacy, to try and demonstrate that there is indeed a variance in privacy risk perception as depending on gender, constituting hypothesis three (Thompson, 2018).

H3: women perceive social privacy as a bigger privacy risk over institutional privacy. Men perceive institutional privacy as a bigger risk than social privacy.

2.2.2. Sexual orientation as predictor for (online) communication and behavior

The second predictor defined within the research question is sexual orientation. People who identify as belonging to the gay, lesbian, bisexual (GLB) community are more likely to create online dating profiles (Lever et al., 2008). This raises the question of whether sexual orientation influences Tinder behavior and as such perception of certain risks associated with Tinder, specifically since a large portion of online daters does not identify as heterosexual. Literature hasn't, so far, focused on specifically exploring how sexuality may alter online communicative behavior. However, when relative to offline nonverbal communication, Knöfler and Imhof (2007) found that sexual orientation has a visible impact on nonverbal behavior as expressed by gaze and eye contact, self-touch, body orientation and body posture. While these results point towards sexual orientation influencing communication, two other variables should be taken into account when talking about sexual orientation and online dating.

The first one is related to the specificities of non-heterosexual interactions. Just as there is a communicative script when it comes to intrapersonal interactions in the heterosexual world, such a script exists in the homosexual world as well, albeit different (Honeycutt, & Hatcher, 2015). This script is activated once sexual orientation is established. This can be linked to

Sunnafrank's (1990) predicted outcome value (POV) theory. POV stipulates that people seek information in initial interactions to determine the benefits of interpersonal relationships by predicting the positive or negative value of future outcomes (Sunnafrank, 1990). On Tinder, initial information of a user's sexual orientation can be obtained as early as coming across their profile—when swiping users of the same gender, one can already guess at their interest in same-sex partners. This contrasts real-life experiences of non-heterosexual users, as disclosing one's sexuality doesn't necessarily occur during initial interactions (Day, & Schoenrade, 1997).

The second variable influencing non-heterosexual communication is the specific sexual culture that exists within homosexual communities. Casual sex and casual relations with another person are widespread among that community, more so than in heterosexual couples, as such matching the communicative script (Lever et al., 2008). To exemplify, overt and overly sexual messages in homosexual interactions on Tinder could be interpreted as normal and non-threatening, while the same interaction in a heterosexual conversation can be construed as aggressive, due to differing motivations for use (i.e. the male is using Tinder for the purpose of casual sex and is thus being sexually forward, while the woman is using it for social and friendship motives) (Thompson, 2018). The above literature points towards a difference between heterosexual and non-heterosexual individuals in intrapersonal communication. Thus, it could be supposed that this difference could also influence Tinder experiences and the perceived risks associated with the mobile application.

2.2.2.1. Tinder and sexual health

The last risk of Tinder use is connected to sexual health. Tinder use has been found to facilitate sexual risk behavior, due to its association with hook-up culture and the easy access it provides to different sexual partners (Hahn et al., 2018). Couch, Liamputtong and Pitts (2012) discerned emotional and sexual risks as a perceived risk to online dating. Their research showed that both men and women are, usually, aware of sexual risks related to STIs and unwanted pregnancies (Couch, Liamputtong & Pitts, 2012). However, the sample used in their research was dominantly heterosexual. In homosexual sexual interactions, unwanted pregnancies are not a risk, as such halving the risks facing heterosexual partners. Thus, sexual risks differ for different sexual orientations.

Present research on the topic of dating apps and sexual health of homosexual individuals focuses on HIV and casual sex (Rogge et al., 2019, Hahn et al., 2018). The link between casual sex and Tinder has been explored in literature (Rogge et al., 2019, Hahn et al., 2018), finding that geosocial networking application users are at a higher sexual risk, most prominent in the men

seeking men (MSM) category, as compared to other groups (Rogge et al.,2019). In 2014, 70% of HIV diagnoses were among MSM (including MSM who inject drugs), despite MSM representing only an estimated 2% of US population (Badal et al., 2018). HIV awareness for this group needs to be specifically targeted in such a way that it is effective, and in recent years it has started creatively reaching out through social media and dating platforms (Badal et al., 2018). Being aware of a problem can affect individual perception of its importance and formulating the fourth and final hypothesis.

H4: men seeking men on Tinder construe health concerns as a risk associated with Tinder use more than other groups (women seeking women, men seeking women, women seeking men).

Thus, exploring the topic of the perceived Tinder risks as varying between genders and sexual orientations can be done through the exploration of the four hypotheses introduced above. H1: women on Tinder perceive inappropriate online engagement as a bigger risk than men; H2: men perceive deceptive Tinder profiles as a bigger risk than women; H3: women's perception of privacy on Tinder focuses on social privacy concerns, while men's- on institutional; H4: men seeking men on Tinder construe health concerns as a risk associated with Tinder use more than other groups (women seeking women, men seeking women, women seeking men). In the next chapter, the method of analysis will be outlined— a quantitative method that uses a survey to gather data and an experiment to test the hypotheses.

3. Chapter Methodology

3.1. Research design

Scientific inquiry is dedicated to “finding out” and comes down to making observations and interpreting what is observed (Babbie, 2013). A research topic can be explored by a variety of different methods and combination of methods, with each method particularly well-suited to a different type of research (Babbie, 2013). Scientific research is divided in two categories—quantitative and qualitative research strategies, both of which are populated by specific quantitative or qualitative methods. Both of these strategies have particular pros and cons and are better suited to obtaining one type of result over another (Babbie, 2013). Broadly, quantitative research is objective, conducts analysis through numbers and is easily generalizable for a population, whereas qualitative methods yield subjective responses, usually employ a smaller sample size, thus being less generalizable, but going into greater analytic depth (Babbie, 2013).

3.1.1. Quantitative methods

A quantitative method was chosen for this particular research for several reasons. The first reason is the ability to measure quantitative results in relation to numbers. As opposed to qualitative research, this possibility of expressing value in numbers is an advantage for the analysis of data, as findings are objective, rather than subjective (Gilbert, 2008). Quantitative research employs empirical methods and empirical statements, i.e. descriptive statements about what is the case in the real world rather than what ought to be the case, typically expressed in numerical terms (Cohen, Manion & Morrison 1980). Simply put, quantitative research is a methodology that explains phenomena by collecting numerical data that are analyzed using mathematically based methods (Creswell & Creswell, 2017).

The second reason quantitative methods were used is because of the ease of audience segmentation they allow (Sukamolson, 2007). Audience segmentation is done by dividing the population into groups whose members are similar to each other and distinct from other groups. This is a good fit to the present research question, which uses gender and sexual orientation as dividers of response. Additionally, quantitative research is used to quantify opinions, attitudes and behaviors, to find out how a population feels about a certain issue, based on a sample size (Sukamolson, 2007). Finally, quantitative methodology is well-suited to the testing of hypotheses (Sukamolson, 2007). Four distinct hypotheses were formulated in chapter 2. Three of them used gender as a differentiator of risk perception, the last one using sexual orientation as a differentiating factor.

3.1.2. Experiment

The method used in this research is an experiment. Experimental research is mainly used in natural sciences (e.g. physics), related applied fields (e.g., agriculture and engineering), and the social sciences, specifically exploring human psychology and human social behavior (Neuman, 2014). As all methods, experimental research is better suited to some projects over others. Namely, experiments are fitting to projects involving relatively limited and well-defined concepts and propositions, as well as to study casual relations in small-group interactions (Babbie, 2013, p. 247). All three of these cases are observed in the present research: the survey, used to gather information, defines ambivalent concepts and propositions and the research question targets a relatively small group of individuals (Tinder users), inquiring about their interaction with other individuals of the same group. Additionally, experimental research was chosen as it is considered the most effective test providing evidence for causal relationships (Neuman, 2014). Experiments can be deliberately designed to fulfill the three criteria of causality (proof of an association, elimination of alternative causes, temporal order of independent variables predating dependent ones) (Neuman, 2014). Experimental design also allowed for this study to be controlled by targeting suitable variables while isolating variables that show no causal relation in a specific setting.

Experimental research is primarily focused on comparison, specifically comparison between groups that are fundamentally alike (Tinder users of the same gender or sexual orientation) (Neuman, 2014). Furthermore, it is best suited to research which explores the impact of a few variables, rather than multiple variables. As such, experiments help advance knowledge on a broader topic by accumulating knowledge from various smaller scale experiments, as opposed to one big experiment that examines how dozens of variables operate simultaneously (Neuman, 2014). To this end, the four hypotheses introduced in chapter two will be individually researched through an experiment with several conditions, which will garner knowledge on the broader topic of perceived risks of Tinder as differing by gender and sexual orientation. Specifically, an experiment will be used to compare groups. Due to the lack of assigned experimental and control groups, this research is a quasi-experiment, a type of experiment that lacks some key elements of the classic experimental design (such as pre- and post-testing and control groups) (Babbie, 2013, p. 397).

The present research will be web-based, as web-based experiments are taking advantage of the speed, convenience and diversity of sampling the internet offers (Babbie, 2013). They offer the additional advantage of generalizability and external validity, as compared to offline experiments, due to traditional experiments largely relying on volunteer participation (Babbie,

2013). Of course, web-based experiments have limitations, specifically relative to internal validity and concept perception (as explained above) (Babbie, 2013). Additionally, experiments, on- or offline, usually deal with sensitive, personal information that has the potential to intrude on participants' personal lives (Babbie, 2013). In the current study, this potential negative aspect was largely mitigated by the anonymity provided by an online survey.

As with every research, there can be potential risks and/or dangers for the participants. In the present study, the only potential risk is questions of the survey triggering a negative emotional reaction in a respondent that has suffered emotional or physical damages in Tinder interactions. The probability of this happening, however, is low as the survey is filled out on a voluntary basis, i.e. participation is not compulsory, and participants can opt out whenever they choose. The study being web-based also eliminates a wide variety of potential threats and dangers to participants that can occur in physical experiments, such as an accidental injury, making this experiment safe for participation.

3.2. Sampling

A sample of between 100 and 150 participants was anticipated and deemed sufficient, as it allows for generalizability yet is still small enough to easily analyze. Generalizability was also assured by employing a random sampling method, as opposed to a purposive or convenience one. Any person who desired to partake in the study could do so, as opposed to participants being selected for and invited to participate in the study. This was achieved in the data gathering stage. By distributing the survey through several online platforms (including Qualtrics, Survey Swap and several large international Facebook groups) the most diverse sample possible was reached. While this resembles a sample of convenience, due its nature of observing individuals readily at hand (i.e. individuals already part of Facebook groups for internationals), the sample included a snowball strategy, by asking participants to also share the survey among their peers, expanding the sample beyond the bounds of convenience (Babbie, 2013). Snowball sampling was also appropriate due to its applicability to unknown populations (Babbie, 2013). It is unknown which individuals use Tinder, unless they self-disclose, making the Tinder population unknown. Snowball sampling usually falls within the non-probability sampling methodology, which is characterized by a non-random sample (Babbie, 2013). However, the self-selection procedure of participating in the survey (each participant knows that the topic of research is Tinder and are less likely to participate if they are not a Tinder user) lends a random dimension to the sample. Additionally, snowball sampling allows researchers to gather relevant data in a relatively speedy manner, which can be particularly useful to studies that have a limited timeframe. Thus, the

survey participants were self-selected, with each respondent choosing to participate, which together with snowball sampling and sharing through diverse platforms randomized the sample (Babbie, 2013). This snowball sampling method was deemed most appropriate, as it is more diverse than a sample of convenience (usually targeting participants residing within the same area) and includes more relevant data as opposed to an absolutely random sample of the general population.

3.3. Operationalization

The survey was the starting point of the experiment, as it gathered the necessary data for analysis. It consisted of 27 questions spread over five sections and is included in full in Appendix A. All questions were adapted from previous research on online dating and preexisting scales. Section two consisted of fourteen questions, used to measure H1 and H2. H1 is measured by six questions on a five-point Likert scale (1- strongly disagree; 5- strongly agree), allowing participants to share their experiences through statements like “I have received aggressive messages on Tinder” and “I have received inappropriate messages on Tinder”. This section also includes a question on dark personality traits (the Dark Tetrad, consisting of narcissism, sadism, Machiavellianism and psychopathy) and consists of a series of fourteen statements, encompassing all four traits. Narcissism, Machiavellianism and psychopathy were measured with the Short Dark Triad Scale by Jones and Paulhus (2014). As a fair amount of research on Tinder explores these characteristics, this question was included to further understanding of unpleasant Tinder interactions (Duncan & March, 2019; Lyons et al., 2020; March et al., 2017; Timmermans, De Caluwé & Alexopoulos, 2018). Additionally, while not directly linked to the testing of a hypothesis, this question serves the purpose of an experimental manipulation, as it shifts the respondents’ understanding of the true measures obtained from it (Neuman, 2014).

Section three is used to measure H3 and includes only three questions related to privacy, both social and institutional. The questions in this section straightforwardly ask if they “are worried that the information they share with Tinder might leak” and if they feel that “Tinder does enough to protect their data”. All of the questions in this section are rated on a five-point Likert scale (1- definitely yes; 5- definitely no).

The questions in section four were modeled after Rogge, Crasta and Legate’s (2019) study on the risks of Tinder and Grinder (a dating application similar to Tinder, but exclusive to men seeking men) use among men seeking men (MSM). The present survey used measures of sexual orientation, relationship status, sexual activity and sexual health, as a way to correlate sexual risk behavior and Tinder use, exploring hypothesis four.

A limitation to the quantitative approach employed here was the possibility of participants misinterpreting a question and thus not being able to reply in full or as fitting reality. To mitigate this, the possibility of a textual response (Other (please specify)) was included for several questions. The textual replies were coded to fit within existing categories wherever possible or separately, so that they may be included in the quantitative analysis. Additionally, the textual replies provide further discussion and help lend an additional context to this research, as they are useful for providing a direction for further exploration of this topic, as well as pointing out oversights in the current research.

3.4. Procedure

The experiment's starting point is the launching of the online survey, which begins by gathering demographic information such as age, gender, sexual orientation and nationality. It also included a filter question: have you ever used Tinder? If a participant selects "No", the survey ends here.

3.4.1. H1: Inappropriate Tinder interactions

Inappropriate Tinder interactions were measured by six questions in section two. All of the statements included in these questions are centered around the same core concept, yet the explicit division of this concept into specific segments (sexually overt messages, aggressive messages, discriminatory messages and trolling messages) mitigates possible confusion about what exactly constitutes the broader concept of inappropriate interactions on Tinder, and as such ensures internal validity of the information gathered (Babbie, 2013).

3.4.2. H2: Interactions with fake profiles

Hypothesis two deals with the interaction with deceptive profiles. This hypothesis will be tried based on a question in section two, which inquires about respondents' experiences with catfishing and the nature of the deception in a straightforward way.

3.4.3. H3: Privacy concerns

Section three is dedicated to hypothesis three and measures privacy concerns as perceived by Tinder users in their experiences. It consists of three questions employing a Likert scale (1- very unsafe; 5- very safe) to determine participants' attitudes towards social and institutional privacy. The questions are straightforward, openly asking users to rate the perceived level of institutional and social safety.

3.4.4. H4: Sexuality and sexual history

Section four tackles the topic of sexual health and is closely linked to hypothesis four. The

questions measure sexual orientation and the level of attraction to different genders, the respondents' relationship status, the number of sexual partners and the link between these partners and Tinder. The last question of this section asks the respondents to share their sexual health history by checking off STIs they are suffering from.

The final section of the survey consists of only two questions. The first one directly engages respondents on their perceived risks of Tinder interactions, by asking them to mark which Tinder occurrence they qualify as a potential risk. The last question of the survey is an open, non-mandatory question, that allows respondents to share some of their Tinder experiences, if they wish to do so. Doing so could bring additional context to their responses in the survey and would further help internal validity. A full version of the survey used for data gathering can be found in Appendix A.

3.5. Method of analysis

A factorial design and multiple regressions will be used as a method of analysis to check the hypotheses, as they best represent the correlation between variables while putting an emphasis on the significance of findings (Pallant & Manual, 2007). Analyzing the data was done through SPSS, as it fits within a quantitative methodology and is a good tool for in-depth analysis of large sets of data. Initially, a comprehensive demographic analysis was performed. Demography, specifically gender and sexual orientation, is key in this research as the research question and all four hypotheses are employing gender or sexual orientation as an independent variable. The other demographic markers, such as age and nationality are integral to understanding the positioning of the sample. Furthermore, understanding the demographic markers of the sample could provide a direction for further exploration.

After the demographic analysis was performed, it was time to test the hypotheses. The four hypotheses were explored by either a T-test or a regression. This study includes two independent variables (gender as an IV in H1,2,3 and sexual orientation as an IV for H4) and four dependent variables (inappropriate behavior for H1, deceptive profiles for H2, social privacy and institutional privacy for H3, history of STIs and unprotected sex for H4).

3.5.1. T-tests

A T-test was applied to H1 (women on Tinder perceive inappropriate online engagement as a bigger risk than men), H2 (males perceive deceptive Tinder profiles as a bigger risk than females) and H3 (women's perception of privacy on Tinder focuses on social privacy concerns, while men's- on institutional). In total, four T-tests were performed in this research, one each for H1 and H2 and two in H3, as T-tests are best suited to comparing the values on some continuous

variable for two groups (Pallant, 2007). There are several types of T-test, but only one of them was used in this research—the independent samples test. This test is part of inferential statistics and is used when comparing the mean scores of two different groups (Pallant, 2007, p. 247). Hypotheses 1 through 3 all share the same independent variable—gender, a categorical variable in the field of statistics and as such well-suited to these types of tests. Gender is typically made up of two different groups—male and female, and while different methods of data gathering can choose to include additional options (such as other or gender-fluid), the structure of gender as a categorical variable remains unchanged.

Testing hypotheses through an independent samples test aims to find statistical evidence that the variable means are significantly different (Pallant, 2007). In the present study, hypotheses 1 through 3 suppose that one gender's perception is statistically different from the other gender, thus making an independent sample test the best way to verify this postulation.

Testing of H1 included the additional element of data reduction in the form of finding Cronback's alpha. The data measuring the dependent variable in H1 was obtained through two separate questions, so a reliability analysis was performed to assure the measures' mean compatibility and a new variable was created, serving as the dependent variable. Creating a new variable (and therefore running a compatibility analysis) was not necessary for testing H2 and H3, as the data necessary was already consolidated in a single survey question.

3.5.2. Regression

A regression was used to test H4. As in H3, two measures were tested in H4. The first measure was linked to the respondents' STI history and employed a logistic regression. The second test measured the respondents' history of unsafe sexual practices and employed a linear regression. H4 is also the only hypothesis using sexual orientation as an independent variable.

Regression analysis is used to estimate the relationship between a dependent and independent variable (Pallant, 2007). Usually, this type of analysis is used to predict behavior or find the causal relationship between the two variables (Pallant, 2007). Unlike the T-test, which requires a categorical IV and continuous DV to find significant differences between groups, regression analyses find the causality between a dependent variable (either categorical or continuous) and a continuous predictor (independent variable). Using different types of dependent variables leads to different kinds of regression analyses.

Due to the measures employed in this research, testing out H4 was done by running two regression analyses, one being a logistical and the other a linear regression. The logistical regression tested the causal relationship between STI history and sexual orientation and was employed due to the categorical nature of the DV (yes/no) (Rogge, Crasta & Legate, 2019). The

linear regression tested the second measure of H4—unsafe sexual practices. This DV is continuous, with data being obtained through a Likert scale question in the online survey.

3.6. Reliability and validity

It is impossible to achieve perfect reliability and validity in a research, as due to its nature research comes with limitations. Of course, there are ways to strengthen these aspects of a study. Reliability relates to the extent to which results are absent from measurement errors (Muijs, 2011). As such, reliability can be divided in two categories—internal and external. Internal reliability deals with the process of analysis as performed by the researcher, whereas external reliability is linked to the participants' part of the experiment (Muijs, 2011). Due to the data gathering method employed in this study (anonymous online survey done without researcher supervision), external reliability can be ensured only by creating a comprehensive set of plainly asked questions, as a way to mitigate respondent confusion and erroneous data (Babbie, 2013). Adversely, this format of data gathering can positively contribute to external reliability, as the respondents feel in a more natural setting, removed from judgement and thus untruthful data. Internal reliability was ensured by cleaning up the data of erroneous samples and outliers in the data set. Additionally, for scales constituting multiple items, factor analysis was applied to ensure compatibility and reliability, by using Cronbach's alpha to confirm that the scales correlate sufficiently, further promoting internal reliability.

Validity is the extent to which the results of a quantitative study are accurately measured (Neuman, 2014). In the present case, validity was assured in two ways. The first was to base measurements and scales on already existing reliable research (Duncan & March, 2019; Lutz, & Ranzini, 2017; Rogge, Crasta & Legate, 2019; Timmermans, De Caluwé & Alexopoulos, 2018). This assured that the needed information was gathered for the experiment in an adequate format. The second way validity was assured was by using multiple items for a single scale. As such, measurements were based on multiple questions, covering the multiple aspects of a concept and thus attaining triangulation (Neumen, 2014). Lastly, the random sample of participants contributed to the validity of the study, as due to the law of probability, inference to the general population could be made (Neumen, 2014).

4. Results

This chapter reports the results based on the analysis of the collected data. These findings finish the experimental method employed and yield insights into the research objective. A discussion on the research question, as relating to its academic, social and overall relevance will constitute the next chapter.

4.1. Descriptive statistics

A sample of 126 participants was gathered in 22 days ($N = 126$). The sample was predominantly female (60%), heterosexual (70.3%), and between the ages of 18 and 38 ($M = 25.02$, $SD = 3.16$). While this research was not restricted to a specific demographic target group, due to the snowball method employed respondents were expected to predominantly be in the same age group. In practice, most Tinder users are between 18 and 24 years in age, which was consistent with the sample (Ingram, 2019). The majority of participants were European, with 37.9% of the sample being Bulgarian, 11.3% Dutch and 7.3% Greek. A pie-chart was created to visualize this frequency and is contained in Appendix B. Tables 4.1.1 and 4.1.2. below visualize the gender and sexual orientation of the sample, respectively.

Table 4.1.1. Gender of the sample

	Frequency	Percent
Male	50	40.00
Female	75	60.00
Total	125	100.00

Table 4.1.2. Sexual orientation of the sample

	Frequency	Percent
Heterosexual	88	70.4
Homosexual	18	14.4
Bisexual	19	15.2
Total	125	100.00

4.2. Hypothesis testing

4.2.1. H1: Women on Tinder perceive inappropriate online engagement as a bigger risk than men

H1 measures the risk perception of inappropriate online engagement on Tinder as differing by gender, as such measuring one element of the research question of whether gender and sexual orientation play a role in the perception of the risks of Tinder. To measure this hypothesis, stipulating that women perceive inappropriate engagement as a bigger risk than men, a T-Test was performed. Before the test was performed, the internal consistency of the scales used for the dependent variable needed to be measured. This was done using Cronbach's alpha, which is the most commonly used method, as suggested by Pallant (2013), which requires a Cronbach's alpha above .7 to be reliable. This step was necessary due to the fact that the data gathering survey measured inappropriate experiences on Tinder in a series of questions, trying to cover all forms of inappropriateness (unpleasantness, aggression, discrimination, etc). Thus, a reliability analysis was conducted, showing a high internal consistency of $\alpha = .86$. This allowed for the creation of a new, compiled variable which was used in the T-test.

The T-test showed that women ($M = 3.94$, $SD = 1.45$) perceive inappropriate online engagement as a significantly bigger risk than men ($M = 2.86$, $SD = 1.13$), $t(82.90) = -3.86$, $p < .001$. Thus, H1 was accepted, finding a significant difference between genders in the risk perception of inappropriate online engagement on Tinder.

4.2.2. H2: Men perceive deceptive Tinder profiles as a bigger risk than women

A T-Test was performed to test H2. The T-test showed no significant difference in the risk perception of deceptive profiles on Tinder between men ($M = 3.35$, $SD = 2.60$) and women ($M = 4.10$, $SD = 1.91$), $t(19.38) = -.99$, $p > .05$. Thus, H2 was rejected, finding no significant difference between genders in the risk perception of deceptive Tinder profiles.

4.2.3. H3: Women's perception of privacy on Tinder focuses on social privacy concerns, while men's—on institutional

Two T-tests were performed to test H3—one for social privacy and one for institutional privacy. The first T-test found no significant difference in social privacy perception between women ($M = 3.04$, $SD = 1.12$) and men ($M = 3.21$, $SD = 1.12$), $t(80.41) = .68$, $p > .05$.

The second T-Test found no significant difference in institutional privacy perception between men ($M = 3.11$, $SD = .95$) and women ($M = 3.40$, $SD = .90$), $t(77.32) = -1.47$, $p > .05$. Thus, H3 was rejected, finding no significant difference between genders in the risk perception of social and institutional privacy on Tinder.

4.2.4. H4: Men seeking men on Tinder construe health concerns as a risk associated with Tinder use more than other groups (women seeking women, men seeking women, women seeking men).

4.2.4.1. Linear regression

Two regressions were performed to test H4—a linear and a logistical regression. Before running the linear regression, assumptions of regression tests were performed to ascertain that the analysis did not violate the assumption of normality of errors, homoscedasticity and verify the absence of multicollinearity. A description and visualization of the assumption tests for normality of errors and homoscedasticity are included in Appendix C. The visualization of the normal probability plot showed that the points lay close to the normality line, hence the assumption of normality of errors was not violated. The scatterplot verifying homoscedasticity seemed to show a relatively equal distribution of residuals across all predicted values of the independent variable, as such meeting this assumption. Lastly, the assumption of multicollinearity was also met, with VIF values under 10 ($VIF = 1.0$).

A two-tailed linear regression with unsafe sexual practices as criterium and sexual orientation as predictor was conducted. The model was not found to be significant, $F(1, 73) = .32$, $p = .57$, $R^2 = .004$. Sexual orientation had no significant influence on unsafe sex practices ($\beta = .07$, $p = .57$), as shown in Table 4.2.4.1. R^2 is the statistic indicating the percentage of the variance in the dependent variable that the independent variable explains. This statistic is between 0% and 100%, where the higher the R^2 , the better the regression model fits within the observations (Pallant, 2013). In this case, R^2 is very low, showing that only 0.4% of the variance in the DV is explained by the IV.

Table 4.2.4.1. Regression analysis summary (with unsafe sexual practices as dependent variable)

	<i>B</i>	<i>S.E.</i>	β	<i>t</i>	<i>p</i>	<i>VIF</i>
Constant	3.44	.41		8.48	.000***	
Unsafe sex practices	.13	.23	.07	.57	.57	1.0

Note: Significance levels: * $p < .05$, *** $p < .001$.

4.2.4.2. Logistic regression

A binary logistic regression was also used to measure H4, with STI history as criterium and sexual orientation as predictor was conducted. Logistic regression analysis, unlike linear analysis, does not require assumptions to meet concerning the need for a linear relationship between variables, or following the assumption of normality of errors or homoscedasticity

(Pallant, 2013). Some assumptions are implied, however. Firstly, a binary regression requires the dependent variable to be binary, which was presently achieved using a yes/no dependent variable (Pallant, 2013). Secondly, the assumption of independent observation was observed, where requires observations to be made without repeating measures or matching data (Tabachnick & Fidell, 2012). Finally, a low multicollinearity between independent variables is required, an assumption that was met by default, because of the use of a single independent variable (Tabachnick & Fidell, 2012).

The model found that sexual orientation has a negative influence ($B = -.87$) on the risks of contracting an STI which is significant ($p = 0.007$), as shown in Table 4.2.4.2. A negative influence means that those that score low on the IV, score higher on the DV (and vice-versa). In the present case, the low end of IV spectrum was heterosexuality and the low end of STI contraction was the presence of an STI. In logistic regressions, an equivalent statistic to the R^2 does not exist (Cox & Snell, 1989). Instead, binary logistic regressions have multiple pseudo R-squareds, which account for the proportion of the total variability of the outcome that the model accounts for (Cox & Snell, 1989). Presently, the Cox and Snell R^2 is .064, which means that the model used accounted for only 6.4% of the variance of the outcome. Thus, the below results show that there is no significant link between homosexual individuals and a higher degree of contracting STIs, rejecting H4.

Table 4.2.4.2. Regression analysis summary of sexual history

	<i>B</i>	<i>S.E.</i>	Wald	<i>df</i>	<i>p</i>	<i>Odds ratio</i>
Constant	3.64	.75	23.64	1	.000***	38.04
Sexual orientation	-.97	.36	7.15	1	.007*	.38

Note: Significance levels: * $p < .05$, *** $p < .001$.

4.3. Summary of the analyses and hypothesis testing results

The four hypotheses above tested to what extent gender and sexual orientation influence the perception of Tinder risks. They found that these two characteristics are not necessarily a predictor of perception or behavior. In fact, three out of the four hypotheses were rejected, with only H1: women on Tinder perceive inappropriate online engagement as a bigger risk than men being confirmed. This leads to the simple answer to the research question that *no*, gender and sexual orientation aren't the central predictors to Tinder risk perception. To extrapolate on this short answer, an in-depth analysis of the findings and implications of this study will be developed

in the next chapter. These will tackle the academic and societal relevance of each individual result as well as give direction to how this topic can be further developed.

5. CONCLUSION

Romance, sexual encounters, dating and intrapersonal relations are an ever-evolving constant in human life (Finkel et al., 2012). The creation of the printed press allowed for the placement of personal ads, the publicization of the Internet put a digital spin on dating and Tinder reflected the shifting digitalization from computers to smartphones by adapting online dating to mobile devices. All these transformations in the way humans have access to dating and romance have altered human attitudes, perceptions and risks associated with (online) dating (Hance, Blackhart, & Dew, 2018; Maliepaard & van Lisdonk, 2019). Still, not all players necessarily perceive risk in the same way and a variance in risk perception has been observed in literature, linked to human characteristics, specifically gender and sexual orientation (Guadagno, Okdie & Kruse, 2012; Lever, Grov, Royce & Gillespie, 2008). Therefore, the present study aimed to explore *to what extent do the perceived risks of Tinder differ between male and female users and to what extent is that influenced by sexual orientation?* This was measured by the introduction of four hypotheses, each focusing on a popular risk associated with Tinder use. The risks explored were the receipt of inappropriate messages, encountering deceptive profiles, falling victim to privacy violations (social or institutional) and sexual health risks as a result of Tinder interactions.

5.1. Discussion of findings

In the previous chapter it became apparent that gender and sexual orientation are predominantly not differentiating factors on the perception of risk on Tinder, with three out of four hypotheses finding no significant difference between genders and sexual orientations. H1 was the only accepted hypothesis; it stipulated that there is indeed a significant difference in the risk perception of inappropriate messages on Tinder, with women perceiving such attitudes as a bigger risk than men. The assumption of this hypothesis was founded in academic literature, which found that 42% of female dating app users have reported uncomfortable contact online, compared with 17% of men (Smith & Duggan, 2013). In fact, this phenomenon of inappropriateness online is widespread enough that it is featured in popular media and entertainment: funny images, storytelling videos and blog posts, even entire social media accounts are dedicated to recording, exposing and putting a comedic spin on these advances, a popular account being the previously mentioned Instagram profile “Tinder Nightmares” (Thompson, 2018). These actions show that online abuse (used in its most neutral form of using something in an improper and potentially hurtful way) with women as victims has become normalized, almost expected (Gillet, 2018). The assumptions found in the theory were proven in the present study—significantly more women than men perceived inappropriate messages on Tinder as a risk, as such

installing gender as a predictor for online behavior and perception (Gillet, 2018). Additionally, H1 being the only accepted hypothesis, provides interesting insight into why gender played a role of differentiator of risk perception of inappropriate messages, as opposed to the other risks; a topic further explored in the next point. The other three, all rejected, hypotheses centered on concepts that tend to vary independently of gender or sexual orientation. Deception, privacy concerns and sexual health issues are potential risks for any and all online dating platform users, and while literature has stipulated that a link between risk perception of a topic and an individual's gender or sexual orientation is possible, a significant connection was not found within this study. Adversely, the concept measured in H1, the perception of inappropriate interactions online, is linked to the social construct of what is inappropriate. As established in chapter two, gender expectations, roles and oftentimes perceptions are socialized, with the social construct of gender behavior being upheld online as well as offline (Guadagno et al., 2011). This could account for men being more open and forward with their use of Tinder as a tool for casual sex, while women use it as a way for chatting and romance (Weiser, 2001).

H2 and H3 also measured the difference in risk perception according to gender. H2 stipulated that men perceive deceptive profiles as a bigger threat than women; the hypothesis was rejected. Literature on the topic of deceptive online interactions offers some insight into why men might not perceive these profiles as a bigger risk as men are less susceptible to the techniques employed by the deceivers. Whitty (2013) described the technique scammers most often use, describing the stages of developing a relationship until it reaches a monetary capacity. Asking for money doesn't happen right away, as the deceiver begins by declaring their love for the victim early on, asking that the conversation be moved to another messaging service, and entering in an exclusive relationship with the victim, where grooming techniques are steadily applied (Whitty, 2013). The grooming is done so that the victim develops an emotional and trusting connection to the deceiver, ultimately fulfilling their sexual or financial desires (Whitty, 2013; Whitty & Buchanan, 2016). The process of deception is thus quite lengthy and requires prolonged online chatting. Usually, men spend less of their online time chatting, as compared to women, making them less susceptible to a long grooming process (Weiser, 2001). Adversely, many of the grooming techniques, such as asking for small gifts or asking for money to pay for a relative's surgery, are societally linked to the traditionally male role of provider (Bem, 1978). Thus, the topic of deceptive profiles on Tinder and their risk perception as depending of gender, has so far not established a clear and significant difference between the genders. In fact, by further exploring this topic, a trait other than gender may prove to be a more conspicuous predictor. In this regard, exploring this predictor exclusively can be accepted as a limitation of this study, and will be

discussed as such below.

The assumptions of H3 supposed that men and women perceive different types of privacy differently, with women being more concerned about social privacy (another user using their data for harmful purposes) and men—about institutional privacy (Tinder leaking or selling their data to third parties). These assumptions were not confirmed by the present study, despite being formulated through theory (Lutz & Ranzini, 2017; Raynes-Goldie, 2010). This could mean that another individual trait is more central to predicting privacy risk perception over gender. In recent years, digital privacy concerns and regulations have been steadily growing and becoming more politicized and disputed (Arora, 2019). An example of the politicization of digital privacy is the 2018 EU GDPR directive, regulating personal data (European Parliament, 2016). The directive includes, but is not limited to, regulations on what cookies and online information websites can store from individuals. Furthermore, doxing, data leaks, hacks and sales have recently increased in frequency, with data becoming the currency of tomorrow, if not of today (Zuo, Lin, & Zhang, 2019). The critical role of digital privacy could explain why no significant variance between genders was found, as individual opinions on personal and data privacy have the potential of being a more central predictor (Véliz, 2020). Additionally, the recent exposure of the masses to this topic also contributes to privacy being an individual perception, rather than a gendered one.

A similar assumption can be made for the results of H4, which was also rejected, stipulating that men seeking men on Tinder construe health concerns as a risk associated with Tinder use more than other groups. Sexual health is, or should be, a concern for all sexually active individuals, irrespective of sexual orientation. Of course, certain groups of people tend to attribute a higher risk index to sexual concerns. The present study measured whether this group was formed based on sexual orientation, specifically when concerning men seeking men. Historically and academically, men seeking men are at a higher risk of contracting STDs and STIs (Badal et al., 2018). In fact, homosexual men are at a disproportionate risk of exposure to AIDS, as compared to other sexual orientations, with 70% of HIV diagnoses in USA in 2014 being among gay men (Badal et al., 2018). Still, one group's historic association with a given risk does not necessarily mean that they perceive it at a different risk level than other groups.

All of the rejected hypotheses are based on assumptions taken from literature, meaning that a historic connection between a given gender or sexual orientation and a risk of online dating has been established. However, these established connections do not necessarily discard the possibility of other, unexplored groups exhibiting the same behaviors, especially when relative to individual perception. For example, deceptive profiles for monetary gain have historically targeted men, yet this does not mean that women cannot perceive the risks of encountering

deceptive profiles online at the same level as men (Whitty & Buchanan, 2016). Similarly, the existence of a historic connection between homosexual men and AIDS does not mean that individuals of other sexual orientations necessarily perceive sexual concerns as a result of Tinder interactions as a lesser risk. Thus, through the findings of this study and the application of between-group comparison, it can be summarized that the gender and sexual orientation of a Tinder user are not the most accurate predictors in measuring risk perception.

5.2. Theoretical and practical implications

These findings have significant implications in both theory and practice and serve to the further understanding of three concepts: gender as a predictor of behavior, sexual orientation as a predictor of behavior and risks associated with online dating (specifically Tinder). Firstly, on the topic of gender as a predictor of behavior, a difference in behavior based on gender was found in only one of the cases—dealing with inappropriate messages. The other two risks explored with regard to gender (dealing with deceptive profiles and privacy concerns) showed no significant variance. A key reason for this phenomenon is the different risk perpetrator. In the cases of deceptive profiles and privacy risks, anyone can be the transgressor, as such putting individuals of all gender at the same level of risk. This is not the case with inappropriate messages however, where literature has established a specific type of transgressor that incites such behavior. Namely, heterosexual males with a specific set of motivations for the use of Tinder or a personality type consistent with a set of unfavorable personality traits (the Dark Tetrad) usually seem to be the perpetrators of inappropriate online behaviors (Duncan & March, 2019; Lyons et al., 2020; March et al., 2017; Timmermans et al., 2018). Furthering the exploration of gendered behavior could present an alternative point of view on whether gender itself, or rather socialized gender typing, is a defining factor to human behavior (Bem, 1978). Gender typing and the socialization of gender roles are key traits to explore in both theory and practice, as findings on the topic can prove beneficial for lucrative fields such as marketing and sales (Bettany et al., 2010). Additionally, understanding gender differences in online behavior contribute to finding the answer of one of the most widely debated questions: who are we as humans (Finkel et al., 2012)? In the present climate of speedy digitalization, sometimes brought on by a lack of other recourse due to global circumstances (like the need for speedy adaptation to working from home during the 2020 Covid-19 pandemic), understanding the way the digital plane differs from the physical one is key (Arora, 2019). Thus, exploring any aspect that is linked to human behavior online, the way it potentially differs to real-life decision making and preferences is of import to both academic and lucrative fields. In the present study, this was done by inspecting the role of gender in behaviors linked to

Tinder, a mobile application with lucrative end, that creates a specific online environment of human interaction and behavior.

Secondly, sexual orientation is one of the key traits, along with gender, that shape individuals' perceptions and behaviors, specifically in relation to (online) dating behavior. (Hahn et al., 2018). As mentioned in chapter two, communicative scripts exist to allow for easier intrapersonal communication (Honeycutt, & Hatcher, 2015). These scripts, however, greatly vary depending on the characteristics of interlocutors, making communicative scripts among non-heterosexual interlocutors different (Honeycutt, & Hatcher, 2015). Concurrently, the exploration of non-heterosexual relations and behaviors has a comparatively short history of academic or practical exploration, largely due to the recent or even still-present stigma associated with the lifestyle (Miles, 2017). The present research contributed to the limited volume of data available about the differences in perception (or lack thereof) attributed to homosexuality, specifically in the context of online dating. The overwhelming lack of significant predictive powers to gender and sexual orientation found within this study also implies that maybe these two key personality factors might not be the most crucial ones with regard to online dating risks. In fact, age, nationality (as linked to cultural practices) or even education level could prove to be more vital to the understanding of online dating behavior (Lever et al, 2018). For example, the desire for a casual relationship as a result of online dating is a phenomenon linked almost exclusively to young adults, suggesting that motivations for the use of online dating could vary with age (Claxton, & van Dulmen, 2013). Additionally, cultural context shapes dating in terms of what is acceptable and how the dating process should go. In more traditional societies online dating tends to be more highly stigmatized, due to its link to casual relations, non-consistent with cultural practices (Rochadiat, Tong & Novak, 2018). Such implications however could not be made available or proposed for further exploration without firstly rejecting gender and sexual orientation as holding the most predictive power (Lever et al., 2008).

A third implication of this study is the user-centric point of view of risks associated with Tinder and online dating that it offers. Perceptions of online dating tend to carry a negative stigma originating from non-users (Doan, 2010). By exploring online dating through the point of view of the user, a greater and arguably more reliable understanding of the place of online dating in everyday life can be gathered. This point of view lends an additional dimension to understating this phenomenon outside of the Tinder-centric and social perspectives already available through company data or literature. Furthermore, by extensively researching the perceptions of the risks of Tinder as connected to predictive personality traits, awareness on these risks can be raised, without an element of fearmongering (Glassner, 2004).

In conclusion, this research prompts academics and marketers alike to further think on two key issues—the role and power of predictive personality traits (such as gender and sexual orientation) and the role of online dating in everyday life. Further exploration on these topics has lucrative, societal and practical implications and applications, which if pursued can contribute to understanding the underlying mechanisms of the digital present, as well as the integral role of gender typing and socialization in decision-making and perceptive processes. Lastly, a deeper exploration of the current shift in dating operations holds value in a multitude of societal institutions, including, but not limited to marriage, the fall of the traditional nuclear familial model and the inherent monogamy of human nature (Finkel et al., 2012). Academic exploration and social perception go hand in hand, one often being based on the other. As such, the exploration of Tinder, (online) dating risks, gender and sexual orientation, can contribute a lot to understanding the shift in dating culture, generational social communication and the shift in human characteristics. These understandings can even be taken a bit farther, as Tinder is not only linked to the shift in the way of dating, it is also indicative of the high level of digitalization of the world in the 21st century, how integral digital connection is and how it alters human behavior and perception (Arora, 2019). This puts Tinder at the intersection of what is purely human (psychology and romance), what is marketable (a for-profit mobile application) and what technological advances have made possible.

5.3. Limitations

While the key findings of this research build upon and add value to the current literature on the topic of Tinder, with specific regard to the potential risks it carries, some limitations are present. The first limitation is the sample used in terms of diversity. The sampling method of random, snowball sampling was well-suited to the research purpose of obtaining a working sample of Tinder users. However, a downside to snowball sampling is the probability of staying within a same demography of participants, thus limiting diversity (Babbie, 2013). It is likely that a respondent will invite peers of the same age, geographic location, and education level to participate in the experiment, which leads to a handful of demographic types among the participants. This was observed in the present study as the sample lacked diversity in both age (age mean value was 25.02) and nationality (46.8% of the sample came from the Balkan peninsula). This is a limitation to a study that aimed to explore as diverse a population as possible, directly impacting the generalizability of findings.

A second limitation that directly impacts generalizability is the somewhat restricted sample size. Academically, a sample size of 126 participants is satisfactory (Neuman, 2014).

However, Tinder is currently being used by 57 million users worldwide (Iqbal, 2020). To be able to accurately capture the behaviors and opinions of users, a wider, more diverse sample size is needed, to ensure generalizability. This limitation particularly affects the validity of this research, as a smaller or less diverse sample cannot necessarily provide inference to the general population (Neumen, 2014). In the present sense, the sample used is satisfactory in numbers but not diverse enough, leading to a validity and generalizability only within the given demographic group. A larger, more diverse sample could provide additional validity of the study, simultaneously providing reliability of the results, as consistent and stable results are required for a study to be reliable, usually achieved through the employ of the same measures within a different sample (Muijs, 2011).

Additionally, using a quantitative method is inherently linked to several limitations. While this method is well-suited to presenting findings in relation to numbers (quantifiable results) and thus generating objective results, it lacks the depth of understanding that could be obtained through a qualitative method such as interviews (Gilbert, 2008). The experimental method applied here was fitting to the purpose of the research, however this methodology is inherently connected to exploring a smaller group of individuals, meaning that the findings presented in this research are only significant for the specific population studied (Neuman, 2014). The choice of methodology also impacted the external reliability of the study. Due to the fact that there was no supervision of the participants and limited communication (the only information they had access to were the questions of the questionnaire), it is possible that understanding of key concepts has the potential to vary between respondents or even between the respondent and creator of the survey (Neuman, 2014). For example, a participant in the experiment could have encountered a deceptive profile on Tinder, yet not have recognized it as such. This lowers the external reliability of the study, possibly impacting the validity of the findings. Validity was also limited in terms of measure. Validity is best assured when measurements are based on multiple questions and attaining triangulation (Neumen, 2014). While this was achieved for H1, H3 and H4, H2 only used one measure and one survey question, thus limiting the validity of the study.

Furthermore, the research hypotheses were based on existing theoretical research. Research on the topic of Tinder, specifically the potential risks associated with its use, is still in its infancy (Duguay, 2015; Gatter & Hodkinson, 2015; Gillet, 2018). As such, the theoretical approach applied to this research is limited in the amount of previous literature it can build upon, limiting the initial theoretic assumptions of the study. A way to circumvent this limitation was to also include literature that explores online dating and human online behavior overall, as a way to grant further theoretical reliability (Couch, Liamputtong, & Pitts, 2012; Garbarino & Strahilevitz,

2004).

Finally, gender and sexual orientation are indubitably important shaping factors towards human perception, social behavior, etc (Garbarino & Strahilevitz, 2004; Knöfler & Imhof, 2007). However, they might not be the only factors defining and altering behavior—level of education, nationality, cultural practices and even age could potentially have a bigger impact on risk perception (Lever et al., 2008). The present research decided to test risk perception difference based on only two predictors (gender and sexual orientation) and while these were tested in a reliable and valid manner, not exploring other potential predictors is a limitation to the broader exploration of the risks of Tinder use as understood by users. This limitation was initially mentioned in the beginning of this chapter, when it became apparent that using only two traits to predict user behavior does not yield conclusive results on such a broad and minimally explored topic.

5.4. Directions for future research

The topic of risks of Tinder, as well as other online dating platforms is presently gaining both academic and societal popularity (Couch et al., 2012). The present study, despite the limitations listed above, was a step in this direction. Still, there are many directions for further research, the first one being to improve upon the limitations of this study, particularly the last one. As stated above, exploring the role of nationality, age or education level can positively contribute to further understand the topic at hand. Education level and age in particular can be linked to the shaping of risk perception in relation to knowledge (Cohn, Macfarlane, Yanez & Imai, 1995). Knowledge on a subject can make individuals more aware of the risks associated with it. Oftentimes, knowledge, specifically when linked to newer or stigmatized phenomena such as online dating, is acquired either through the passage of time and the participation in more dialogue on the topic (positively associated with age), or through the practice of critical and in-depth thinking on a singular topic, a skill honed in higher education (Hungerford & Volk, 1990). Exploring predictors linked to demographic identity other than gender or sexual orientation can thus further explore what the main predictor to differentiating perceptions on a particular issue are. Doing so would further research on both online dating and the role of demographic traits.

A second way to build upon this study would be to replicate it with a wider and more diverse sample. The diversity of the sample, specifically with regards to age and nationality, would contribute to the generalizability and external validity of the study. Specifically, a wider sample in terms of age could allow for a comparison between age groups, as a way to determine if and how risk perceptions change with age. Similar research could also be linked to motivations of

Tinder use, and the exploration of a correlation between a specific motive for use and risk of use. The motivations for the use of Tinder are one of the chiefly explored topics under the Tinder umbrella—motivations for use according to personality, linked to infidelity and with regard to casual sex are a few of the variations on this topic (Sevi, Aral, & Eskenazi, 2018; Sumter, Vandebosch, & Ligtenberg, 2017; Timmermans, De Caluwé, & Alexopoulos, 2018). The present study chose to narrow the scope of the predictors employed in determining risk perception to only include demographic traits (gender and sexual orientation), however an exploration using motives for use as a predictor could provide insight into both online dating risks and managing motivations and expectations in online dating (Maliepaard, & van Lisdonk, 2019).

A third direction of the exploration of the topic of the risks of online dating would be to shift the point of view. Instead of measuring whether the perception of certain risks of Tinder depends on gender, the reasons for the existence of these risks could be explored. For example, the types of people who perpetrate inappropriate behavior online, or who deceive and scam users could be researched, as a way of expanding on the broader topic. Doing so could yield valuable insight into the actual risks of Tinder, as opposed to user perception, as well as personality types, methods and motivations for dishonesty and exploitation online.

Finally, exploring this topic through a mixed method can yield new key discoveries. The present experiment relied on theoretical implications to construct the survey for data gathering. Substituting the theoretical units for interviews with Tinder users could provide an alternative point of view to what is deemed a risk by users. From there, additional data gathering in the form of a survey could be performed, with the risks evaluated having been generated through the interviews. Alternatively, the experimental methodology could be directly pursued without additional data gathering. Employing such a mixed quantitative-qualitative method could result in a “best of both worlds” methodology which simultaneously explores the risks of Tinder in depth, through qualitative understanding, and seeks generalizability of these findings through a quantitative method (Babbie, 2013). Thus, a deeper understanding in both breadth and depth can be achieved on the topic of the risks of Tinder.

To conclude, this research helped further the academic understanding of Tinder and the risks associated with its use, specifically risks related to inappropriate behavior, deceptive profiles, privacy and sexual health. This was done by exploring the role of gender and sexual orientation as a predictor for the perception of said risks, as such also contributing to the understanding of the role of gender and sexual orientation overall. The study found that these two predictors do not necessarily play a central role in determining risk perception of deceptive profiles, privacy and sexual health, however gender does influence the perception of risk

associated with the receipt of inappropriate messages. These results are in line with a long study of the normalization of gender abuse (Gillett, 2018), and the adherence to gender roles in the online space (Guadagno et al., 2011). Similarly, it contributed to understanding deception, privacy and sexual health concerns as individual-centered, as opposed to inherently gendered or sexuality-linked concepts. From a societal perspective, this research manages to achieve three things. First, it shows greater insight into the most popular dating application, Tinder. Secondly, it helps fight the still present, albeit limited stigma on the topic of online dating. Lastly, exploring the role of online dating in current affairs contributes to the understanding of this lifetime. The 21st century is remarkable in its blend of offline and digital realities on all levels—economic, professional, personal. Tinder, as a mobile application for online dating, provides insight into the new way of forming romantic or physical relations. To this end, any exploration of a concept mentioned (be it gender, privacy, digital romance or others) contributes to the tapestry of understanding who we are as humans and how the world is constantly evolving and rewiring itself in the present age.

REFERENCES

- Abramova, O., Baumann, A., Krasnova, H., & Buxmann, P. (2016, January). Gender differences in online dating: what do we know so far? A systematic literature review. In 2016 49th Hawaii International Conference on System Sciences (HICSS) (pp. 3858-3867). IEEE. DOI: 10.1109/HICSS.2016.481
- Arora, P. (2019). *The next billion users: Digital life beyond the West*. Harvard University Press.
- Australian Bureau of Statistics. (2016, November). Personal safety survey. Report, Australian Bureau of Statistics, Australia. Retrieved from: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4906.0>
- Babbie, E. R. (2013). *The basics of social research*. Cengage learning.
- Badal, H. J., Stryker, J. E., DeLuca, N., & Purcell, D. W. (2018). Swipe right: dating website and app use among men who have sex with men. *AIDS and Behavior*, 22(4), 1265-1272. <https://doi-org.eur.idm.oclc.org/10.1007/s10461-017-1882-7>
- Baym, N. K. (2015). *Personal connections in the digital age*. John Wiley & Sons.
- Bem, S. L. (1978). *Bem Sex-Role Inventory: Professional manual*. Palo Alto, CA: Consulting Psychology Press
- Bettany, S., Dobscha, S., O'Malley, L., & Prothero, A. (2010). Moving beyond binary opposition: Exploring the tapestry of gender in consumer research and marketing. *Marketing Theory*, 10(1), 3-28. <https://doi-org.eur.idm.oclc.org/10.1177/1470593109355244>
- Bolig, R., Stein, P. J., & McKenry, P. C. (1984). The self-advertisement approach to dating: Male-female differences. *Family Relations*, 587-592. DOI: 10.2307/583839
- Cameron, D. & Wodinsky, S. (2020, January 16). 70,000 Tinder Photos of Women Just Got Dumped on a Cyber-Crime Forum. Gizmodo. Retrieved from: <https://gizmodo.com/70-000-tinder-photos-of-women-just-got-dumped-on-a-cybe-1841043456>
- Claxton, S. E., & van Dulmen, M. H. (2013). Casual sexual relationships and experiences in emerging adulthood. *Emerging Adulthood*, 1(2), 138-150. <https://doi-org.eur.idm.oclc.org/10.1177/2167696813487181>
- Cohen, L., Manion, L., & Morrison, K. (2013). *Research methods in education*. Routledge.
- Cohn, L. D., Macfarlane, S., Yanez, C., & Imai, W. K. (1995). Risk-perception: differences between adolescents and adults. *Health Psychology*, 14(3), 217. <https://doi.org/10.1037/0278-6133.14.3.217>
- Couch, D., Liamputtong, P., & Pitts, M. (2012). What are the real and perceived risks and dangers of online dating? Perspectives from online daters: Health risks in the media. *Health, Risk & Society*, 14(7-8), 697-714. DOI: 10.1080/13698575.2012.720964
- Cox, D. R., & Snell, E. J. (1989). *Analysis of binary data* (Vol. 32). CRC press.

- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Dake, K. (1991). Orienting dispositions in the perception of risk: An analysis of contemporary worldviews and cultural biases. *Journal of cross-cultural psychology*, 22(1), 61-82. <https://doi-org.eur.idm.oclc.org/10.1177/0022022191221006>
- Day, N. E., & Schoenrade, P. (1997). Staying in the closet versus coming out: Relationships between communication about sexual orientation and work attitudes. *Personnel Psychology*, 50(1), 147-163. <https://doi-org.eur.idm.oclc.org/10.1111/j.1744-6570.1997.tb00904.x>
- Doan, T. T. (2010). *Online dating: Determining the presence of a stigma* (Doctoral dissertation, Roosevelt University).
- Dreijer, J., & van den Haak, E. (2014). *Tinder privacy revised*.
- Duguay, S. (2015). Dressing up Cinderella: Interrogating authenticity claims on the mobile dating app Tinder. *Information, Communication & Society*, 20(3), 351-367. <https://doi.org/10.1080/1369118X.2016.1168471>
- Duncan, Z., & March, E. (2019). Using Tinder® to start a fire: Predicting antisocial use of Tinder® with gender and the Dark Tetrad. *Personality and Individual Differences*, 145, 9-14. <https://doi.org/10.1016/j.paid.2019.03.014>
- European Parliament and the Council of the European Union. (2016, April). *General Data Protection Regulation (GDPR)*. Retrieved from: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679>
- Evans, J. & Mathur, A. (2006). The value of online surveys. *Internet Research*, 15(2), 195- 219.
- Farvid, P., & Aisher, K. (2016). 'It's Just a Lot More Casual': Young Heterosexual Women's Experience of Using Tinder in New Zealand.
- Finkel, E. J., Eastwick, P. W., Karney, B. R., Reis, H. T., & Sprecher, S. (2012). Online dating: A critical analysis from the perspective of psychological science. *Psychological Science in the Public Interest*, 13(1), 3-66. <https://doi-org.eur.idm.oclc.org/10.1177/1529100612436522>
- Garbarino, E., & Strahilevitz, M. (2004). Gender differences in the perceived risk of buying online and the effects of receiving a site recommendation. *Journal of Business Research*, 57(7), 768-775. [https://doi.org/10.1016/S0148-2963\(02\)00363-6](https://doi.org/10.1016/S0148-2963(02)00363-6)
- Gatter, K., & Hodkinson, K. (2015). On the differences between Tinder™ versus online dating agencies: Questioning a myth. An exploratory study. *Cogent Psychology*, 3(1), 1162414. <https://doi-org.eur.idm.oclc.org/10.1080/23311908.2016.1162414>
- Gilbert, N. (2008). *Researching social life* (3rd edition). London: Sage Publications Ltd.

- Gillett, R. (2018, July). Intimate intrusions online: Studying the normalisation of abuse in dating apps. In *Women's Studies International Forum* (Vol. 69, pp. 212-219). Pergamon.
<https://doi.org/10.1016/j.wsif.2018.04.005>
- Glassner, B. (2004). Narrative techniques of fear mongering. *Social Research: An International Quarterly*, 71(4), 819-826.
- Goode, W. J. (1959). The theoretical importance of love. *American Sociological Review*, 38-47.
 DOI: 10.2307/2089581
- Guadagno, R. E., Muscanell, N. L., Okdie, B. M., Burk, N. M., & Ward, T. B. (2011). Even in virtual environments women shop and men build: A social role perspective on Second Life. *Computers in Human Behavior*, 27(1), 304-308.
<https://doi.org/10.1016/j.chb.2010.08.008>
- Guadagno, R. E., Okdie, B. M., & Kruse, S. A. (2012). Dating deception: Gender, online dating, and exaggerated self-presentation. *Computers in Human Behavior*, 28(2), 642-647.
<https://doi.org/10.1016/j.chb.2011.11.010>
- Hahn, H. A., You, D. S., Sferra, M., Hubbard, M., Thamocharan, S., & Fields, S. A. (2018). Is it too soon to meet? Examining differences in geosocial networking app use and sexual risk behavior of emerging adults. *Sexuality & Culture*, 22(1), 1-21. <https://doi-org.eur.idm.oclc.org/10.1007/s12119-017-9449-3>
- Hance, M. A., Blackhart, G., & Dew, M. (2018). Free to be me: The relationship between the true self, rejection sensitivity, and use of online dating sites. *The Journal of social psychology*, 158(4), 421-429. <https://doi-org.eur.idm.oclc.org/10.1080/00224545.2017.1389684>
- Heldman, C., & Wade, L. (2010). Hook-up culture: Setting a new research agenda. *Sexuality Research and Social Policy*, 7(4), 323-333. <https://doi-org.eur.idm.oclc.org/10.1007/s13178-010-0024-z>
- Honeycutt, J. M., & Hatcher, L. C. (2015). Imagined interactions. *The International Encyclopedia of Interpersonal Communication*, 1-10. <https://doi-org.eur.idm.oclc.org/10.1002/9781118540190.wbeic053>
- Hungerford, H. R., & Volk, T. L. (1990). Changing learner behavior through environmental education. *The journal of environmental education*, 21(3), 8-21. <https://doi-org.eur.idm.oclc.org/10.1080/00958964.1990.10753743>
- Ingram, G. (2019, August 30). Looking for the Right Swipe: Gender Differences in Self-Presentation on Tinder Profiles. <https://doi.org/10.31234/osf.io/5skrd>
- Iqbal, M. (2020, March 25). Tinder Revenue and Usage Statistics (2020). *Business for Apps*. Retrieved from: <https://www.businessofapps.com/data/tinder-statistics/>
- John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. *Handbook of personality: Theory and research*, 2(1999), 102-138.

- Jones, D. N., & Paulhus, D. L. (2014). Introducing the short dark triad (SD3) a brief measure of dark personality traits. *Assessment*, 21(1), 28-41. Doi: 10.1177/1073191113514105
- Katz, E., Blumler, J. G., & Gurevitch, M. (1973). Uses and gratifications research. *The public opinion quarterly*, 37(4), 509-523.
- Kelly, L. (2013). *Surviving sexual violence*. John Wiley & Sons.
- Kimbrough, A. M., Guadagno, R. E., Muscanell, N. L., & Dill, J. (2013). Gender differences in mediated communication: Women connect more than do men. *Computers in Human Behavior*, 29(3), 896-900. <https://doi.org/10.1016/j.chb.2012.12.005>
- Knöfler, T., Imhof, M. (2007). Does Sexual Orientation Have an Impact on Nonverbal Behavior in Interpersonal Communication?. *J Nonverbal Behav* 31, 189–204 <https://doi-org.eur.idm.oclc.org/10.1007/s10919-007-0032-8>
- Krüger, S., & Spilde, A. C. (2019). Judging books by their covers–Tinder interface, usage and sociocultural implications. *Information, Communication & Society*, 1-16. <https://doi-org.eur.idm.oclc.org/10.1080/1369118X.2019.1572771>
- Kupers, T. A. (2005). Toxic masculinity as a barrier to mental health treatment in prison. *Journal of clinical psychology*, 61(6), 713-724. <https://doi.org/10.1002/jclp.20105>
- LeFebvre, L. E. (2018). Swiping me off my feet: Explicating relationship initiation on Tinder. *Journal of Social and Personal Relationships*, 35(9), 1205-1229. <https://doi-org.eur.idm.oclc.org/10.1177/0265407517706419>
- Lever, J., Grov, C., Royce, T., & Gillespie, B. J. (2008). Searching for love in all the “write” places: Exploring Internet personals use by sexual orientation, gender, and age. *International Journal of Sexual Health*, 20(4), 233-246. <https://doi-org.eur.idm.oclc.org/10.1080/19317610802411532>
- Lutz, C., & Ranzini, G. (2017). Where dating meets data: Investigating social and institutional privacy concerns on Tinder. *Social Media+ Society*, 3(1), 2056305117697735.
- Lyons, M., Messenger, A., Perry, R., & Brewer, G. (2020). The Dark Tetrad in Tinder: hook-up app for high psychopathy individuals, and a diverse utilitarian tool for Machiavellians?. *Current Psychology*, 1-8. <https://doi-org.eur.idm.oclc.org/10.1007/s12144-019-00589-z>
- Maliepaard, E., & van Lisdonk, J. (2019). Online Dating Practice as a Perfect Example of Interwoven Worlds? Analysis of Communication in Digital and Physical Encounters. In *The Geographies of Digital Sexuality* (pp. 137-157). Palgrave Macmillan, Singapore. https://doi-org.eur.idm.oclc.org/10.1007/978-981-13-6876-9_8
- March, E., Grieve, R., Marrington, J., & Jonason, P. K. (2017). Trolling on Tinder®(and other dating apps): Examining the role of the Dark Tetrad and impulsivity. *Personality and Individual Differences*, 110, 139-143. <https://doi.org/10.1016/j.paid.2017.01.025>

- Matthews, B., & Ross, L. (2010). *Research methods a practical guide for the social sciences*. Harlow: Pearson
- Mehrabian, A. (1972). *Nonverbal communication*. Transaction Publishers.
- Miles, S. (2017). Sex in the digital city: Location-based dating apps and queer urban life. *Gender, Place & Culture*, 24(11), 1595-1610. <https://doi-org.eur.idm.oclc.org/10.1080/0966369X.2017.1340874>
- Mobile phone internet user penetration worldwide from 2014 to 2019. (2019, July 23). Retrieved from <https://www.statista.com/statistics/284202/mobile-phone-internet-user-penetration-worldwide/>
- Muijs, D. (2011). *Doing quantitative research in education with SPSS*. Los Angeles, CA: SAGE.
- Neuman, W. L. (2014). *Basics of social research*. Pearson/Allyn and Bacon.
- Neyt, B., Baert, S., & Vandebulcke, S. (2020). Never mind I'll find someone like me—Assortative mating preferences on Tinder. *Personality and Individual Differences*, 155, 109739. <https://doi.org/10.1016/j.paid.2019.109739>
- Nolan, M. P. (2015). Learning to circumvent the limitations of the written-self: the rhetorical benefits of poetic fragmentation and internet 'Catfishing'. *Persona Studies*, 1(1). DOI: <https://doi.org/10.21153/ps2015vol1no1art431>
- O'Meara, A., Davies, J., & Hammond, S. (2011). The psychometric properties and utility of the Short Sadistic Impulse Scale (SSIS). *Psychological assessment*, 23(2), 523. Doi: 10.1037/a0022400
- Pallant, J., & Manual, S. S. (2007). *A step by step guide to data analysis using SPSS for windows. SPSS Survival Manual*. Open University Press, New York.
- Pham, J. M. (2017). Beyond hookup culture: Current trends in the study of college student sex and where to next. *Sociology compass*, 11(8), e12499. <https://doi-org.eur.idm.oclc.org/10.1111/soc4.12499>
- Raynes-Goldie, K. (2010). Aliases, creeping, and wall cleaning: Understanding privacy in the age of Facebook. *First Monday*, 15(1). DOI: <https://doi.org/10.5210/fm.v15i1.2775>
- Rochadiat, A. M., Tong, S. T., & Novak, J. M. (2018). Online dating and courtship among Muslim American women: Negotiating technology, religious identity, and culture. *new media & society*, 20(4), 1618-1639. <https://doi-org.eur.idm.oclc.org/10.1177/1461444817702396>
- Rochat, L., Bianchi-Demicheli, F., Aboujaoude, E., & Khazaal, Y. (2019). The psychology of "swiping": A cluster analysis of the mobile dating app Tinder. *Journal of Behavioral Addictions*, 8(4), 804-813. DOI: 10.1556/2006.8.2019.58

- Rogge, R. D., Crasta, D., & Legate, N. (2019). Is Tinder–Grindr Use Risky? Distinguishing Venue from Individuals’ Behavior as Unique Predictors of Sexual Risk. *Archives of sexual behavior*, 1-15. <https://doi.org/10.1007/s10508-019-01594-w>
- Ryner, L. C., Goodwin, S. F., Castrillon, D. H., Anand, A., Vilella, A., Baker, B. S., ... & Wasserman, S. A. (1996). Control of male sexual behavior and sexual orientation in *Drosophila* by the fruitless gene. *Cell*, 87(6), 1079-1089. [https://doi.org/10.1016/S0092-8674\(00\)81802-4](https://doi.org/10.1016/S0092-8674(00)81802-4)
- Sevi, B., Aral, T., & Eskenazi, T. (2018). Exploring the hook-up app: Low sexual disgust and high sociosexuality predict motivation to use Tinder for casual sex. *Personality and Individual Differences*, 133, 17-20. <https://doi.org/10.1016/j.paid.2017.04.053>
- Smith, A., & Anderson, M. (2016). 5 facts about online dating. Fact Tank, 29.
- Smith, A. W., & Duggan, M. (2013). *Online dating & relationship*. Washington, DC: Pew Research Center.
- Soffer, T., & Cohen, A. (2014). Privacy perception of adolescents in a digital world. *Bulletin of Science, Technology & Society*, 34(5-6), 145-158. <https://doi-org.eur.idm.oclc.org/10.1177/0270467615578408>
- Stutzman, F., Capra, R., & Thompson, J. (2011). Factors mediating disclosure in social network sites. *Computers in Human Behavior*, 27(1), 590-598. <https://doi.org/10.1016/j.chb.2010.10.017>
- Sukamolson, S. (2007). *Fundamentals of quantitative research*. Language Institute Chulalongkorn University, 1, 2-3.
- Sumter, S. R., Vandenbosch, L., & Ligtenberg, L. (2017). Love me Tinder: Untangling emerging adults’ motivations for using the dating application Tinder. *Telematics and Informatics*, 34(1), 67-78. <https://doi.org/10.1016/j.tele.2016.04.009>
- Sunnafrank, M. (1990). Predicted outcome value and uncertainty reduction theories: A test of competing perspectives. *Human Communication Research*, 17(1), 76-103. <https://doi.org/10.1111/j.1468-2958.1990.tb00227.x>
- Tabachnick, B. G. (2012). *Using multivariate statistics*. ed. Fidell LS, editor.
- Tannen, D. (1990). *You just don't understand: Women and men in conversation* (p. 42). New York: Morrow.
- Thompson, L. (2018). “I can be your Tinder nightmare”: Harassment and misogyny in the online sexual marketplace. *Feminism & Psychology*, 28(1), 69-89. <https://doi.org/10.1177/0959353517720226>
- Timmermans, E., & Courtois, C. (2018). From swiping to casual sex and/or committed relationships: Exploring the experiences of Tinder users. *The Information Society*, 34(2), 59-70. <https://doi-org.eur.idm.oclc.org/10.1080/01972243.2017.1414093>

- Timmermans, E., & De Caluwé, E. (2017). Development and validation of the Tinder Motives Scale (TMS). *Computers in Human Behavior*, 70, 341-350. <https://doi.org/10.1016/j.chb.2017.01.028>
- Timmermans, E., & De Caluwé, E. (2017). To Tinder or not to Tinder, that's the question: An individual differences perspective to Tinder use and motives. *Personality and Individual Differences*, 110, 74-79. <https://doi.org/10.1016/j.paid.2017.01.026>
- Timmermans, E., De Caluwé, E., & Alexopoulos, C. (2018). Why are you cheating on tinder? Exploring users' motives and (dark) personality traits. *Computers in Human Behavior*, 89, 129-139. <https://doi.org/10.1016/j.chb.2018.07.040>
- Toma, C. L., & Hancock, J. T. (2010). Looks and lies: The role of physical attractiveness in online dating self-presentation and deception. *Communication Research*, 37(3), 335–351. doi:10.1177/0093650209356437
- Véliz, C. (2020). Data, Privacy, and the Individual.
- Walker, L. L., & Eller, J. L. (2016). Raising capital: Claims of masculinity among men on Match.com. *Men and Masculinities*, 19(1), 42-63. <https://doi.org/10.1177/1097184X15575157>
- Ward, J. (2017). What are you doing on Tinder? Impression management on a matchmaking mobile app. *Information, Communication & Society*, 20(11), 1644-1659. <https://doi-org.eur.idm.oclc.org/10.1080/1369118X.2016.1252412>
- Weiser, E. B. (2001). The functions of Internet use and their social and psychological consequences. *CyberPsychology & behavior*, 4(6), 723-743. <https://doi-org.eur.idm.oclc.org/10.1089/109493101753376678>
- Weiser, D. A., Niehuis, S., Flora, J., Punyanunt-Carter, N. M., Arias, V. S., & Baird, R. H. (2018). Swiping right: Sociosexuality, intentions to engage in infidelity, and infidelity experiences on Tinder. *Personality and Individual Differences*, 133, 29-33. <https://doi.org/10.1016/j.paid.2017.10.025>
- Whitty, M. T. (2013). The scammers persuasive techniques model: Development of a stage model to explain the online dating romance scam. *British Journal of Criminology*, 53(4), 665-684. <https://doi-org.eur.idm.oclc.org/10.1093/bjc/azt009>
- Whitty, M. T., & Buchanan, T. (2016). The online dating romance scam: The psychological impact on victims – both financial and non-financial. *Criminology & Criminal Justice: An International Journal*, 16(2), 176–194. doi:10.1177/1748895815603773
- Wolitski, R. J., & Fenton, K. A. (2011). Sexual health, HIV, and sexually transmitted infections among gay, bisexual, and other men who have sex with men in the United States. *AIDS and Behavior*, 15(1), 9-17. <https://doi-org.eur.idm.oclc.org/10.1007/s10461-011-9901-6>
- Youn, S., & Hall, K. (2008). Gender and online privacy among teens: Risk perception, privacy concerns, and protection behaviors. *Cyberpsychology & behavior*, 11(6), 763-765. <https://doi.org/10.1089/cpb.2007.0240>

- Young, A. L., & Quan-Haase, A. (2013). Privacy protection strategies on Facebook: The Internet privacy paradox revisited. *Information, Communication & Society*, 16(4), 479-500.
- Zuo, C., Lin, Z., & Zhang, Y. (2019, May). Why does your data leak? uncovering the data leakage in cloud from mobile apps. In *2019 IEEE Symposium on Security and Privacy (SP)* (pp. 1296-1310). IEEE., doi: 10.1109/SP.2019.00009.

APPENDIX A: SURVEY

Block one: Demography

1. Please state your age:
2. Please select your gender:
 - a. Male
 - b. Female
 - c. Other (please clarify)
3. Please select your sexual orientation:
 - a. Heterosexual
 - b. Bisexual
 - c. Homosexual
 - d. Other (please clarify)
4. Please select your nationality:
 - a. Austria
 - b. Belgium
 - c. France
 - d. Germany
 - e. Netherlands
 - f. Poland
 - g. Portugal
 - h. Spain
 - i. United Kingdom
 - j. United States
 - k. Other (please specify)
5. Have you ever used Tinder?
 - a. Yes
 - b. No
 - i. Condition: No Is Selected. Skip To: End of Survey.

Block two: Inappropriate interactions

6. I have received unpleasant messages on Tinder:
 - a. Strongly disagree
 - b. Disagree
 - c. Somewhat disagree
 - d. Neither agree nor disagree
 - e. Somewhat agree
 - f. Agree
 - g. Strongly agree
7. I have received inappropriate messages on Tinder:
 - a. Strongly disagree
 - b. Disagree
 - c. Somewhat disagree
 - d. Neither agree nor disagree
 - e. Somewhat agree
 - f. Agree
 - g. Strongly agree
8. I have received aggressive messages on Tinder:
 - a. Strongly disagree
 - b. Disagree
 - c. Somewhat disagree

- d. Neither agree nor disagree
 - e. Somewhat agree
 - f. Agree
 - g. Strongly agree
9. I have received sexually explicit messages on Tinder:
- a. Strongly disagree
 - b. Disagree
 - c. Somewhat disagree
 - d. Neither agree nor disagree
 - e. Somewhat agree
 - f. Agree
 - g. Strongly agree
10. I have received discriminatory (i.e. racist, sexist, homophobic, etc) messages on Tinder:
- a. Strongly disagree
 - b. Disagree
 - c. Somewhat disagree
 - d. Neither agree nor disagree
 - e. Somewhat agree
 - f. Agree
 - g. Strongly agree
11. I have received trolling messages on Tinder:
- a. Strongly disagree
 - b. Disagree
 - c. Somewhat disagree
 - d. Neither agree nor disagree
 - e. Somewhat agree
 - f. Agree
 - g. Strongly agree
12. Please select all of the behaviors they exhibited that made you feel uneasy:
- a. They wouldn't share personal information
 - b. They would backtrack on what was previously said once you disagreed with them
 - c. They had a disdainful attitude towards other people
 - d. They used information they knew about you against you
 - e. They were very authoritative
 - f. They came across as too full of themselves
 - g. They thought of themselves as better than other people
 - h. They thought they were owed a certain treatment
 - i. They showed disdain for authority (i.e. police, regulations, Tinder's guidelines, etc.)
 - j. They seemed unbalanced
 - k. Their replies were needlessly aggressive/nasty
 - l. They got angry when rejected
 - m. They seemed to enjoy hurting my feelings
 - n. They told me that they enjoyed hurting others
 - o. Other (please clarify)
13. Have you ever been catfished (deceived by someone online)?
- a. No
 - i. Condition: No Is Selected. Skip To: End of Block.
 - b. Yes
14. What was the nature of the catfish?
- a. A fake profile for trolling purposes

- b. A fake profile for financial purposes
- c. A fake profile for marketing purposes (i.e. promoting their account on other platforms, generating a following, etc)
- d. A real profile for trolling purposes
- e. A real profile that misled me with their information (i.e. age, pictures, occupation, etc not reflecting reality)
- f. Other (please clarify)

Block three: Perception of privacy

15. Are you worried that the information you share with Tinder might leak?
- a. Definitely yes
 - b. Probably yes
 - c. Might or might not
 - d. Probably not
 - e. Definitely not
16. Do you feel that other Tinder users might use the information you shared for nefarious purposes (i.e. identity theft, blackmailing, cyberstalking, etc.)?
- a. Definitely yes
 - b. Probably yes
 - c. Might or might not
 - d. Probably not
 - e. Definitely not
17. Do you feel that Tinder does enough to protect your data?
- a. Definitely yes
 - b. Probably yes
 - c. Might or might not
 - d. Probably not
 - e. Definitely not

Block four: Health risks and sexual health behavior

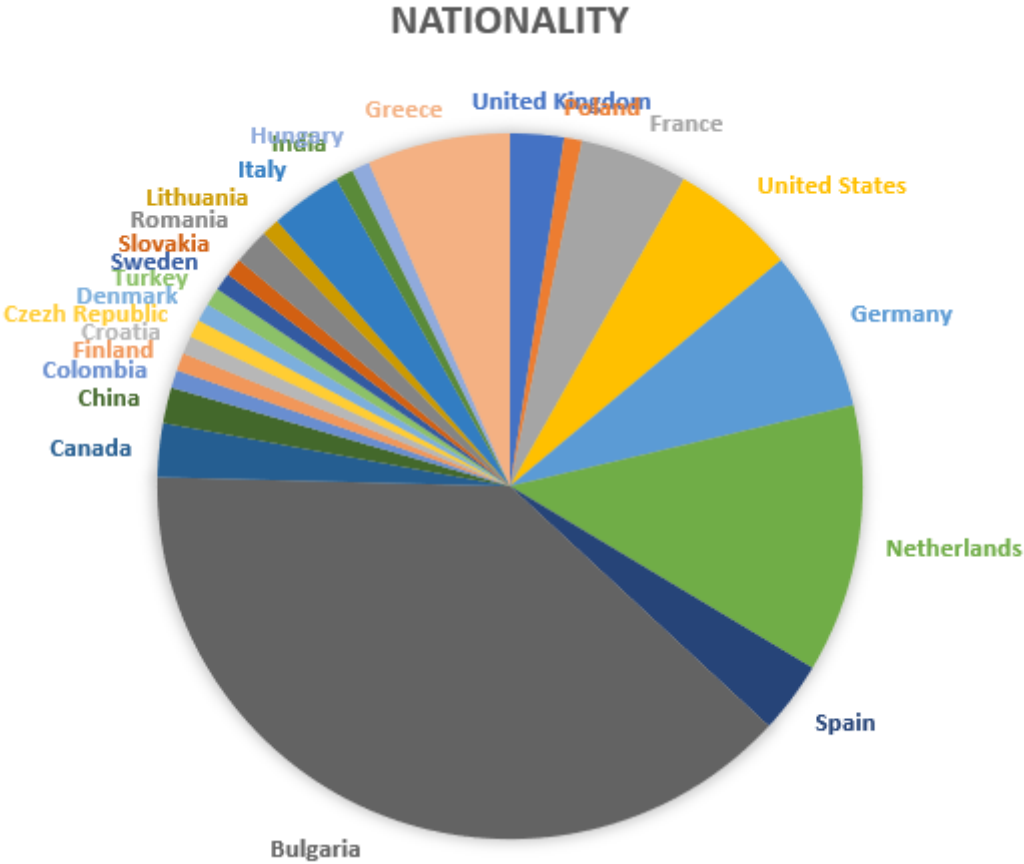
18. How much are you sexually attracted to men?
- a. Extremely attracted
 - b. Very attracted
 - c. Somewhat attracted
 - d. Somewhat unattracted
 - e. Very unattracted
 - f. Not at all attracted
19. How much are you sexually attracted to women?
- a. Extremely attracted
 - b. Very attracted
 - c. Somewhat attracted
 - d. Somewhat unattracted
 - e. Very unattracted
 - f. Not at all attracted
20. What was your relationship status while you were using Tinder?
- a. In an exclusive/monogamous relationship
 - b. In an exclusive-dyadic relationship (we include 3rd partners into our relationship, but only together)
 - c. In a partly-open relationship (only one of us engages in relationships with other people)
 - d. In a non-exclusive/open dyadic relationship (we both have sexual activity with other people)
 - e. Single

21. In the last year, how many people have you engaged in sexual activity with?
- 0
 - Condition: 0 Is Selected. Skip To: Q21
 - 1
 - 2-5
 - 6-10
 - 11-15
 - 16+
22. How many of these partners did you meet on Tinder?
- All of them
 - Most of them
 - Half of them
 - Less than half of them
 - None of them
23. How many of your sexual partners in the last year proposed to have unprotected sex?
- All of them
 - Most of them
 - Half of them
 - Less than half of them
 - None of them
24. How many of these partners did you meet on Tinder?
- All of them
 - Most of them
 - Half of them
 - Less than half of them
 - None of them
25. Have you experienced the following STIs in the past year (check all that apply):
- Pubic lice
 - Scabies
 - Gonorrhea
 - Chlamydia
 - HPV
 - HPV with genital warts
 - Hepatitis
 - vaginitis (including trichomoniasis, gardnerella, and candidiasis)
 - Herpes
 - Syphilis
 - Other (please specify)
 - × Not applicable

Block five: Perceived risks

26. What would you say is the biggest risk of Tinder?
- Encountering fake profiles
 - Receiving aggressive messages
 - Receiving sexually explicit messages
 - Meeting someone who infringes upon my privacy
 - Meeting someone who is a threat to my sexual health
 - Other (please clarify)
27. Feel free to share some Tinder encounters you have had in the field below!

APPENDIX B: Visualization of nationalities (demography of sample)



APPENDIX C: Tests for assumptions for linear regression (H4)

Figure C.1 below shows a normal probability plot. This was generated to test the normality of errors for the linear regression of H4. The visualization shows that the points lie near the line, with a very slight deviation, without the presence of outliers. Hence, the assumption of normality of errors was not severely violated.

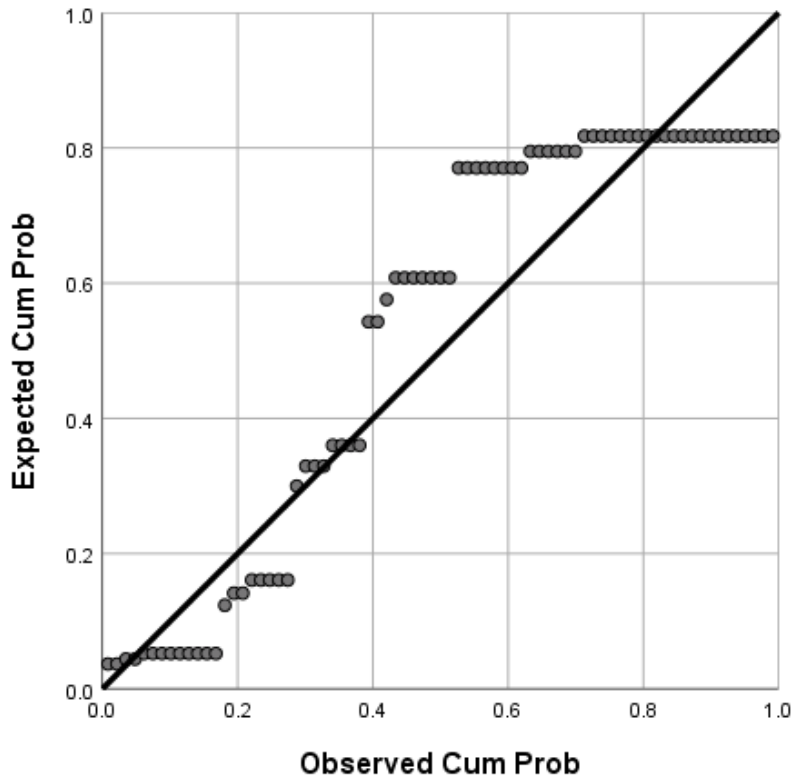


Figure C.1 Normal P-P plot of regression standardized residual (unsafe sexual practices as dependent variable)

Homoscedasticity was also tested. This was done by creating a scatterplot with the dependent variable Y as the standardized residual and the independent variable X as the standardized predicted value. The distribution of the Y values at each value on the X-axis is relatively equal among all residuals across all predicted values of the independent variable, meeting the assumption.

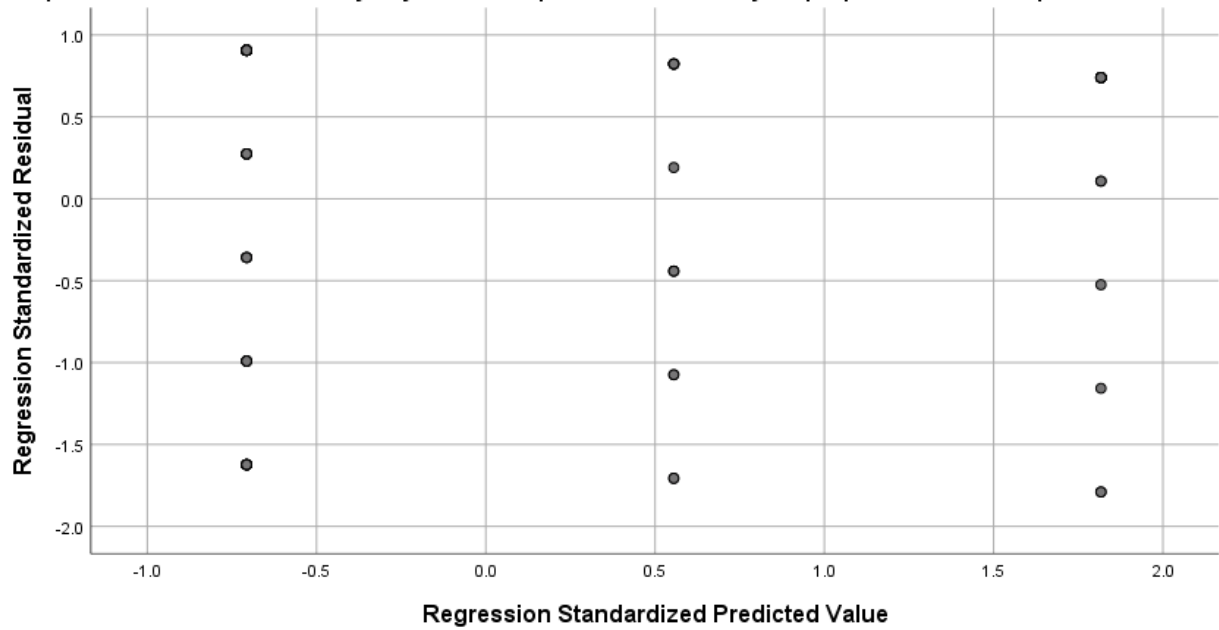


Figure C.2 Scatterplot showing the distribution of errors (unsafe sexual practices as dependent variable)