Algorithmic Trust and Matching Score in Online Dating

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Abstract

Nowadays, online dating is a popular way to meet individuals. Many dating sites use algorithms, for example, a matching score, for their matching process. Research showed that these algorithms can direct people's attention toward a specific partner and influence their decision-making. However, it may be assumed that this influence is affected by the level of trust daters have in these algorithms. Therefore, this study examines if an algorithmically generated matching score has an effect on attractiveness and dating intentions and to what extent this effect is moderated by the level of trust in algorithms. To investigate this, participants were shown fictitious dating profiles consisting of manipulated matching scores and were asked to rate these profiles on their attractiveness and dating intention. Attractiveness was divided into three constructs and measured through a questionnaire based on previous research. In addition, dating intentions were measured by a like/dislike button. To measure trust in algorithms, the Algorithmic Beliefs scale was used. The result showed an effect of online dating matching scores on social attraction, and a small interaction effect of medium trust on matching scores and attractiveness. These findings suggest that a matching algorithm consisting of a matching score may only work for matching people on their similar social characteristics. Furthermore, people with a medium level of trust in algorithms are most influenced by a matching score. These results highlight the importance of trust in algorithms as a moderating factor in the relationship between matching scores and attractiveness in online dating.

Keywords: Online dating, trust in algorithms, matching score, attractiveness

Algorithmic Trust and Matching Score in Online Dating

Algorithms constitute a substantial part of modern life. They are a set of defined steps for solving or achieving a specific goal (Sipser, 2012). People interact with them every day. For example, when searching for something on Google, scrolling through Facebook, listening to recommended songs on Spotify, and even while online dating. People have a heavy reliance on algorithms in all aspects of social life and social interaction (Data-Centric Living: Algorithms, Digitization and Regulation, 2021). Algorithms are trusted with our deepest secrets and consulted in the most important decisions, even in the search for a future partner. Two decades ago, it was not expected that algorithms would be matching ideal mates on dating websites (Van Swol, 2011). Nowadays however, millions of people worldwide use online dating websites that use algorithms for their matching process (Sprecher, 2018). These algorithms simply consist of "sets of defined steps structured to process instructions/data to produce an output" (Kitchin, 2016, p. 14). In online dating, this refers to suggesting a compatible partner out of a user's data supported by a matching score (Sharabi, 2022).

Algorithmically provided information may affect the extent to which we find someone attractive, as well as people's choices in partner selection (Sharabi, 2020; Tong et al., 2016). Algorithms may be designed to influence or persuade users to adopt certain recommendations or take certain actions (Jussupow et al., 2020). In addition, research states that a match percentage can have a significant influence on people's perceptions of compatibility. When people were told they were a good match, they tended to act as if they were, regardless of whether the match percentage was based on accurate data (Rudder, 2014). This suggests that the mere suggesting of a good match via a match percentage, can cause people to form more positive impressions of the other. This in turn makes these people prone to like each other more.

It may be assumed that this effect is influenced by the trust that people have in these matching algorithms. Research states that confidence in a matching algorithm can cause more romantic outcomes (Fagan & Bosson, 2013). Moreover, it has been found that the more positive illusions about the compatibility matching process individuals have, the more likely they are to be convinced of these matching abilities (Miller et al., 2006). This can in turn positively influence their investment in a relationship. In addition, it has been shown that people's beliefs about the effectiveness of matching algorithms can influence their dating outcomes when using these tools (Sharabi, 2020). Furthermore, people are more willing to follow up algorithmic suggestions when previous suggestions were successful (Lankton et al., 2015). An example of this would be when a match turns out to be successful after the first date. However, when these suggestions proved to be unsuccessful (e.g., after a futile date) they could lead to a decrease in algorithm trust, resulting in these people being less likely to follow up future algorithmic suggestions (Jussupow et al., 2020).

Online dating algorithms may direct a dater's attention towards a specific partner, and affect perceived attractiveness as well as partner selection when a matching score is used (Sharabi, 2020; Tong et al., 2016). It may be assumed that this effect is influenced by the trust daters have in these algorithms. However, it is not clear yet if and how this trust influences the actual relationship between matching scores and attractiveness. This is valuable information to know, as millions of people nowadays try to find a partner through online dating (Sprecher, 2018). In the case that these people already have high trust in online dating algorithms, they might be psychologically biased. In the assessment of potential partners, this bias might cause people to place too much value on the algorithmically generated information. This can in turn influence the outcome of the match (e.g., engaging in a relationship). Given this societal context and the knowledge gap in literature, it is of societal and academic relevance to know whether in online dating, trust in algorithms affects

perceived attractiveness and dating intentions. Therefore, the following research question was formulated:

To what extent does a matching score affect attractiveness and dating intentions and is this effect moderated by the amount of trust in dating algorithms?

Theoretical background

Matching score in online dating

The term matching is generally defined as "two objects suitably paired together or having the same appearance" (Xia et al., 2021, p. 1). When we equate this to online dating, we talk about two persons who are compatible with each other (Sharabi, 2022). In other words, people who are attracted to each other and have similarities in their characteristics, hobbies and preferences. A successful match depends on the individuals involved in the relationship, however meeting face-to-face is often a good indicator of whether the matchmaking worked.

In the mid-1990s, the first online dating sites were launched. These dating sites were based on offering online daters greater access to potential partners, by letting online daters navigate through dating profiles until they found someone they liked. However, this caused online daters to suffer from 'choice overload' (Sharabi, 2022). This refers to the difficulty that people can experience when faced with a large number of options and the feeling of being overwhelmed by the number of choices available. This can lead people to feel less satisfied with their choices, even if they ultimately make a good decision (Wu & Chiou, 2009). To mitigate the effects of choice overload, it can be helpful for people to set clear criteria for what they are looking for in a partner and to focus on a smaller number of profiles rather than trying to consider every possibility. It can also be helpful to take breaks and give oneself time to reflect on the choices available before making a decision. To address this issue dating sites

started to use algorithms (Sharabi, 2022). Research states that these algorithms involve "psychometric theory and analyses to guide the process of combining items into factor scores, for each dater" (Sprecher, 2018, p. 204). These matching algorithms are present in various forms and use different methods (Huang et al., 2022). Of many of these algorithms, it is unknown how they exactly work. However, we do know that these algorithms tend to find the most compatible match out of a dater's data supported by a matching score (Wu & Chiou, 2009), but it is not clear yet how this matching output is established.

The matching process starts when daters sign up and create a profile on a dating site. During the signup, daters have to fill out a questionnaire to provide additional information about themselves. It is important to fill in this questionnaire because some dating sites only allow daters to access and view profiles of other (potential) daters whom the algorithm declares, based on the responses, to be a match (Finkel et al., 2012). These questions are about the characteristics of the dater, for example, about their personality, interests, education, religion, background, values, and hobbies. The other part of these questions are about the characteristics desired in a partner, which are much similar to the examples mentioned above, but there are also different questions added, for example, the desired length, color of hair, eyes, and smoking behavior (Huang et al., 2022).

Accordingly, the data that the daters have provided will be processed by the dating sites' matching algorithm. Thereafter, the algorithm starts to make calculations out of the processed data to establish the best matches for their daters. Next, these scores are compared to the data sets from other daters. Subsequently, the algorithm looks for similarities in the data. To measure the degree of similarity between two batches of data, algorithms compare the data on separate characteristics. When there are small absolute differences found in these characteristic dimensions, greater similarity can be assumed (Luo & Klohnen, 2005). Finally,

the algorithm calculates and provides overall matching scores between the daters and their matches (Xia et al., 2021).

Attractiveness and dating intentions

Attractiveness can be defined as: "the quality of being pleasing, charming, or alluring, especially in appearance or manner" ("Definition of Attractiveness," n.d.). People may seek to enhance their attractiveness through a variety of means, such as by dressing well, grooming themselves, and taking care of their physical health. People feel better about themselves when they are convinced of their attractiveness and a lot of energy, money and time is spent trying to reach this goal (Yarosh, 2019). However, the human brain is set up not only to judge its own attractiveness, but also that of other people. Through meta-analysis it was found that people of all kinds of ages, cultures, and genders agree on who is attractive and who is not (Langlois et al., 2000). This indicates that assessing attractiveness is deeply embedded in human genetics.

The key elements that are used for assessing attractiveness are facial- color, texture, proportions, symmetry, averageness, as well as age and health. However, in addition to visual cues, attractiveness can also be influenced by a person's voice and scent. It is proven that people use body odor and vocal cues of people as well to assess age, health, and fertility (Schleidt et al., 1981; Gildersleeve et al., 2012; Moshkin et al., 2012). Furthermore, when visual cues, voice, and scent are combined, it results in higher judgements of attractiveness (Groyecka et al., 2017). In other words, assessing attractiveness can be judged as multimodal.

Attractiveness can be associated with mating decisions and success (Foo et al., 2017), because people tend to choose partners with attractive traits (Rhodes et al., 2005). People choose to get into relationships with partners who are attractive to them. Furthermore, research states that physical attractiveness is more important than traits like education, intelligence, and personality, and hence dominates in choosing a mate (Fugère, 2017).

Consequently, attractive individuals are often seen as happier and having more rewarding life experiences.

Physical attractiveness serves as a gatekeeper that directs us to potential mates (Weeden & Sabini, 2005). An attractive person tends to view less people as physically attractive, while less attractive persons find a wider range of people attractive (Montoya, 2008). Simultaneously, similar levels of physical attractiveness can lead to success in a long-term relationship (Fugère, 2017). Research furthermore stated that the extent to which potential partners match a dater's preferences, can predict the quality and stability of the relationship (Eastwick et al., 2011). However, this prediction can only be done accurately using the information that arises after the interactions. These interactions are important to determine the development of interdependence and the relationship dynamic between two matches (Huang & Hancock, 2021). These encounters can either be face-to-face or computer-mediated communication. Furthermore, it has shown that even after the first dating interactions took place, subtle behavioral signals from underlying psychological processes and relational dynamics revealed whether the potential relationship was likely to develop or dissolve.

In conclusion, the assessment of attractiveness is influenced by multiple factors, including genetics and environmental cues, and can be judged through multiple modalities. This means that various factors, such as age, facial color, and visual cues, can reinforce each other, which leads to higher judgments of attractiveness. One can assume that this also works in online dating. Although, it is important to recognize that online dating allows for the observation of only a limited number of factors that contribute to attractiveness. However, the factors that can be observed on the other hand, for example, a profile- photo, text, or a matching score, may exert more influence in the assessment of a potential match.

Attractiveness and dating intentions in online dating

In online dating, certain cues such as profile pictures and textual descriptions form a first impressions of the dating profile owner. Research has shown that both can affect and shape attractiveness and romantic attraction (Fiore et al., 2008). However, because online dating comes with the possibility to review many profiles at the same time (i.e., 1000s of profiles to be searched through), it leads to dating profile owners becoming increasingly picky (Hitsch et al., 2010). This makes it more difficult for online daters to distinguish themselves from other daters. Therefore, online daters try to present themselves as attractive as possible to attract the attention of potential matches and to keep equal footing with 'competitors'. To do so, online daters use a certain level of exaggeration in their dating profiles (Fiore et al., 2008). This mainly occurs in exaggerations about age, education, and height (Hancock et al, 2007). Research shows that this is somewhat effective, as people received more massages when they exaggerated (Fiore & Donath, 2005). However, it has not been demonstrated whether this contributes to one's attractiveness.

Adding profile photos to one's dating profile does contribute to one's attractiveness (Whitty, 2008; Fiore et al., 2008). The attractiveness level of a photo results in a direct and coherent impression about someone (van der Zanden et al., 2021). Previous theories have shown that physical traits are more important than other factors such as personality and intelligence in online dating (Dion et al. 1972; Walster et al. 1966). This has two reasons: when people meet each other online for the first time they are presented to each other with a photo, which in turn serves as a filter to get through the plethora of profiles (Whitty, 2008). As a result, photos often provide enough information to form an impression of someone and therefore there is no need for more information in the form of a profile text (van der Zanden et al., 2021). Furthermore, profile photos carry more weight in the final assessment (Fiore et al., 2008; Seidman & Miller, 2013). In addition, profile photos lead to higher changes that

potential matches contact each other (Fiore et al., 2008). This is supported by additional research from Whitty and Carr (2006), which found that 85% of their interviewees would not contact someone without a photo on his or her profile. Furthermore, research states that the attractiveness of these photos is the strongest predictor of the likeness of someone's online dating profile (Fiore et al., 2008). In addition, research found that photos of men were more attractive when they looked 'genuine and trustworthy', 'extraverted', 'feminine', and 'not too warm and kind'. Profile photos of women were assessed more attractive when they looked 'feminine', 'less masculine', 'higher in self-esteem', and 'lower in self-centeredness' (Fiore et al., 2008, p. 804).

In conclusion, it is clear that profile photos play a significant role in the attractiveness of an individual's online dating profile. However, it is also important to note that people are influenced by a range of other cues when evaluating potential matches. Research has shown that individuals tend to use both superficial and deeper cues when assessing the attractiveness of potential partners (Toma et al., 2008). Superficial cues, such as physical appearance and the content of profile pictures, have been shown to be important in the initial stages of online dating (Fossby et al., 2019). However, online daters also pay attention to deeper cues, such as the individual's written profile, the types of activities and hobbies they enjoy, and even their choice of profile pictures (Fiore et al., 2010). Additionally, online daters may also pay attention to more subtle cues such as the way in which an individual writes about themselves, the language they use, and the tone of their profile (Toma et al., 2008). All of these factors can influence how attractive a person appears to others and how likely they are to receive messages and attention from other users. Therefore, it is not accurate to say that profile photos are the sole determinant of attractiveness on online dating profiles. Rather, it is a combination of both superficial and deeper cues that influence an individual's perceived attractiveness to others.

Relationship between matching score, attractiveness and dating intentions

Algorithmic matching scores can have significant influence on an individual's perceived attractiveness to others. Research has shown that algorithmically provided information can affect people's choices in partner selection (Sharabi, 2020; Tong et al., 2016). In addition, individuals who are deemed highly compatible with one another are more likely to initiate contact and exchange messages (Toma et al., 2008). This is because the algorithmic matching score is often used as a cue for attraction and compatibility, causing individuals to view those they are highly compatible with as more attractive potential partners (Fiore et al., 2010). Furthermore, the extent to which potential partners match the daters' preferences can predict the quality and stability of the relationship (Eastwick et al., 2011). Moreover, it was found that people who were told they formed a good match believed this, even when they were actually not (Rudder, 2014). In fact, studies have found that individuals who receive high algorithmic matching scores are more likely to be contacted and receive messages from other users, even when controlling for other factors such as physical attractiveness (Fossby et al., 2019). Therefore, it is expected that the algorithmic matching score can impact an individual's perceived attractiveness and success in online dating.

This led to the following two hypotheses:

H1: A matching score leads to higher dating intentions and attractiveness than no matching score

H2: A high matching score leads to higher dating intentions and attractiveness than a low matching score

Trust in algorithms

Algorithms are an integral part of modern technology and are used in a variety of ways to make our lives easier and more efficient (Shin et al., 2020). They are often used to process and analyze data, make personalized recommendations, and automate tasks. Furthermore, algorithms are also used to mediate and assist in human decision-making. This is because algorithms may have a strong influence on people's decision making in certain contexts (Montal & Reich, 2016). However, it is important to consider the specific context in which the decision is being made, as well as the individual's own goals, values, and biases, which can all play a role in their decision making process. Furthermore, it is important to recognize that algorithms can have limitations and can make mistakes, and they should be used with caution and in conjunction with human judgment. Therefore, it is important to understand how algorithms work so that people can trust them.

Trust can be defined as "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another" (Rousseau et al., 1998, p. 395). This definition highlights the key elements of trust, including the willingness to be vulnerable and the belief that the other party are reliable, competent, have good intentions, and will behave in a way that is beneficial or acceptable (Lankton et al., 2015). Just as people may trust other people, people can also trust technology. This is because people believe that technology is reliable, effective, and will behave in a way that meets their needs and expectations (Cabiddu et al., 2022). Trust in technology is distinguished into two types of trust constructs: human-like trust and system-like trust (Lankton et al., 2015). Human-like trust refers to trust in technology that is similar to trust in people. It involves belief in the reliability, competence, and good intentions of the technology, as well as the ability to communicate and interact with the technology in a way that is similar to how people communicate and interact with each other (Vance et al., 2008). System-like trust, on the other

hand, refers to trust in technology that is based on the reliability and effectiveness of the technology itself, rather than on the perceived intentions or characteristics of the technology. This type of trust is often based on the perceived transparency and accountability of the technology, as well as its ability to perform as expected and to deliver desired outcomes (Mcknight et al., 2011).

Many studies have tried to explain trust in technology. For example, the social presence theory (Short et al., 1976), which explains the degree to which people feel connected with one another through a communication medium is related to the degree to which people feel like they are interacting with a real person or a system. This theory concluded that technology's attributes affect people's perception of the technology as more human-like because of its social cues (Lankton et al., 2015; Gefen et al, 2003; Reeves & Nass, 1997. In addition, the affordance theory (Gibson, 1977), which explains how people perceive and use technology in their everyday lives, can also be used to explain trust in technology. This theory states that a technology, whether it is perceived human-like or not, can provide certain actions to a person which lead to different outcomes (Lankton et al., 2015). For example, if a person trusts a technology to provide accurate and reliable information, they may be more likely to use it and rely on it for decision making. On the other hand, if a person does not trust a technology, they may be less likely to use it and may instead rely on their own judgment or the guidance of others. In this way, trust in technology can influence how it is used and the outcomes it produces. On the other hand, a technology's functionality and reliability can be more related to more system-like characteristics (Mcknight et al., 2011). Overall, trust in technology is an important factor in the acceptance and use of technology, and it is influenced by both system-like and human-like characteristics. Therefore, it is important to combine these two types of trust constructs into an algorithm to build and maintain trust among users (Glikson & Woolley, 2020).

Trust in algorithms is formed during the user's first experiences and interactions with an algorithm (Cabiddu et al., 2022). During this phase, users may lack previous knowledge about the algorithm and may perceive certain risks or uncertainties that could prevent them from using algorithms (Gao & Waechter, 2015). These risks and uncertainties may be related to the algorithms functionality, reliability, and transparency. However, in the context of algorithms, it is important to distinguish between automated systems and intelligent systems (Glikson & Woolley, 2020). Automated systems are systems that are designed to following pre-defined rules to perform specific tasks, and they can operate without the ability to adapt or learn from their experiences. Intelligent systems, on the other hand, are systems that are designed to exhibit some level of human intelligence. These systems use artificial intelligence techniques, such as machine learning or natural language processing, to analyze and interpret data, learn from their experiences, and adapt to new situations (Cabiddu et al., 2022). Automated systems are generally well understood and predictable and therefore they can be easily understood by users. In contrast, people find it harder to trust intelligent systems because they use data to a greater extent than humans which is perceived more complex and riskier (Glikson & Woolley, 2020; Kaplan & Haenlein, 2020). This leads to that the decision-making process of these systems is opaque for users, which may lead into algorithm aversion (Cabiddu et al., 2022).

Algorithm aversions is "the reluctance of human forecasters to use superior but imperfect algorithms" (Burton et al., 2020, p. 221). People avoid or reject certain decisions or recommendations made by algorithms, especially when those decisions or recommendations were wrong (Prahl & Van Swol, 2017). To address algorithm aversion, it is important to ensure that algorithms are transparent, fair, and unbiased (Cabiddu et al., 2022). Furthermore, it is important to allow people to adjust the algorithmic process and to provide them with the necessary context and information to understand how this process works. This increases the

willingness for people to continue to use it and prevents them from losing trust in the algorithm after it made a wrong decision/recommendation (Dietvorst et al., 2015; Michelman, 2017).

In conclusion, trust in algorithms is influenced by both system-like and human-like characteristics, including the functionality, reliability, and transparency of the algorithm. It is important for people to understand how an algorithm processes information and generates an output, in order to feel confident in following its advice. Ensuring that algorithms are functional, reliable, and transparent can help to build trust in their output and increase the likelihood that they will be used and relied upon.

Trust in online dating algorithms

As mentioned above many dating sites use matching algorithms (Sharabi, 2022). These algorithms are designed to improve the likelihood of finding a compatible partner by using data and machine learning techniques to identify patterns and make recommendations. However, academics have raised questions about the validity and effectiveness of these recommendations (Finkel et al., 2012; Joel et al., 2017).

The level of perception that online dating algorithms can recommend a compatible mate may contribute to the success of relationships that begin through online dating (Sharabi, 2020). This level can vary among users. Some people may have a high believe in algorithms and rely on them heavily to find compatible partners, while others may be more skeptical and place less emphasis on their recommendations. In addition, if individuals have more positive illusions about the compatibility matching process, they may be more likely to be convinced by these matching abilities which can positively influence their investment in a relationship (Miller et al., 2006).

People's expectations about the matching process in online dating can contribute to successful relationships (Sharabi, 2020). This is explained by the expectancy theory (Vroom, 1994). This theory suggests that people's actions and decisions are driven by their expectations. According to this theory, a person who has high expectations for finding a successful relationship through online dating is more likely to be more motivated and put in more effort in finding a compatible match. For example by actively messaging potential partners and going on dates. On the other hand, a person who has low expectations for finding a successful relationship through online dating may be less motivated and put in less effort, leading to fewer positive outcomes in their online dating experiences. Furthermore, Fagan and Bosson (2013) found that confidence in a matching algorithm can lead to more positive romantic outcomes in online dating.

Research has shown that online daters who have more faith in the algorithm's ability to match them with compatible partners are more likely to engage in deep self-disclosure, a behavior that can increase attraction (Zayas et al., 2014). Additionally, the reduced uncertainty that can come with using an algorithm to match with potential partners may contribute to increased attraction (Antheunis et al., 2010). Furthermore, research states that when people were told that they were a good match, even when they were not good for each other, they still believed they were a good match (Rudder, 2014). Lastly, research showed that people's beliefs about the effectiveness of matching algorithms can influence their outcomes when using these types of tools (Sharabi, 2020). These findings suggest that belief in a matching algorithm can have a positive impact on the development of relationships in online dating.

Moderation effect of trust in algorithms on matching score, attractiveness, and dating

Online dating algorithms are designed to help match people based on various factors, such as their interests, preferences, and behavior. These algorithms can be useful in finding potential matches because algorithms have a stronger influence on people's decision-making than humans have (Montal & Reich, 2016). It is possible that having a positive perception of online dating algorithms could lead people to have more positive expectations of the potential partners they meet online. This is supported by research that stated that the perception that an online dating algorithm can recommend a compatible mate may contribute to the success of relationships (Sharabi, 2020).

Trust in algorithms is built up from a variety of factors, including the reliability and accuracy of the algorithm, the transparency, and accountability of the system, and the perceived benefits and risks of using the algorithm (Glikson & Woolley, 2020, Mcknight et al., 2011; Lankton et al., 2015). In addition, people with high trust are more likely to follow the suggestions of an algorithm than those with low trust (Miller et al., 2006). Furthermore, confidence in a matching algorithm can cause more romantic outcomes (Fagan & Bosson, 2013). Therefore, it can be suggested that a higher level of trust in an algorithm leads people to be more inclined to follow up algorithmic advice.

This led to the following hypothesis:

H3: *The effect of matching score on dating intention and attractiveness will be moderated by trust in dating algorithms so that the effect of matching score on dating intention and attractiveness will be higher for people with high trust than for people with low trust in algorithms*

The according hypotheses of this study are visually shown in Figure 1.

Figure 1

Research Model With Hypotheses and Relations

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                    │   Trust in      │
                    │   algorithms    │
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┌─────────────────┐       H3        ┌─────────────────┐
│                 │                 │  Attractiveness │
│  Matching score │─────────────────→      &          │
│                 │     H1-2        │ Dating intentions│
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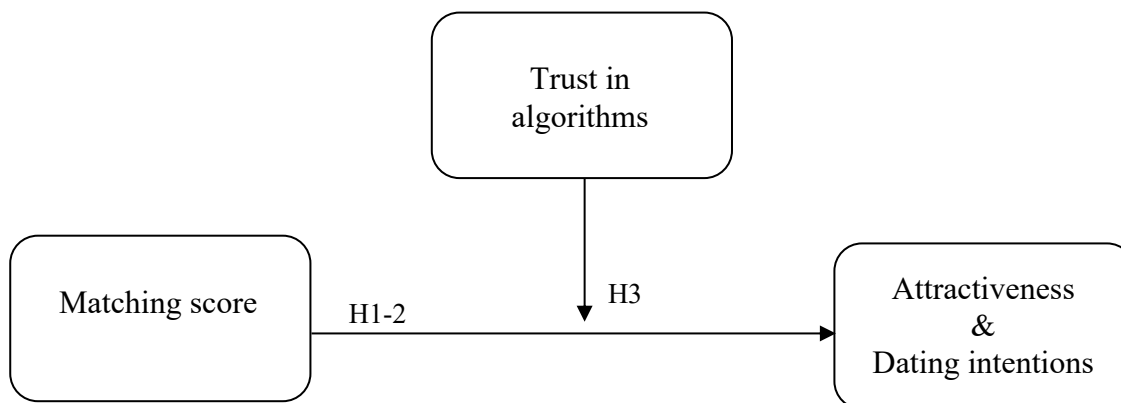
Method

Design

This study used a one factor between-subject design with the independent

variable *matching score* consisting of three conditions (*high, low, and no matching score*), the

dependent variables *dating intentions and attractiveness,* and one moderator *trust in*

algorithms. The independent variable *matching score* was manipulated by randomly assigning

dating profiles containing high, low, or no matching scores to participants. The measures are

further explained in the measurement section.

Participants and recruitment

A power analysis was run in G*Power to determine the sample size. The analysis

showed that the required sample size to achieve a 95% power to reach a medium effect, at a

significant criterion of $\alpha = .05$, 171 were needed. Participants had to speak Dutch and a

minimum age of 18 years old, because this is the minimum age for online dating (Dunn et al.,

2010). The maximum age for this experiment was 29 years. This is because online dating is

most common within the mid-20s and therefore we decided to make the people in the fictional dating profiles (which are further explained below) also in their mid-20s (Smith & Duggan, 2013). Participants were recruited via the researchers' network and social media. In these messages, participants were asked to participate in a study about online dating. To encourage participation, a voucher for 25 euros was raffled among the participants.

Sample

The survey was started by a total of 326 participants, of which a total of 308 participants completed the survey. This means that a total of 18 participants dropped out during the experiment. Of these 18 participants, nine individuals stopped during their participation, six individuals did not agree with the conformed consent, and five individuals where not eligible for this study because they exceeded the maximum age of 29 years that was set for this experiment. Furthermore, the experiment included a manipulation check. This check controlled for whether participants realized in what condition they were in (i.e., No Algorithmic Generated Matching Score (No AGMS), a Low Algorithmic Generated Matching Score (Low AGMS), or a High Algorithmic Generated Matching Score (High AGMS)). Accordingly, the check also controlled for if participants knew what the matching score entailed when they were exposed to a condition including a matching score (i.e., Low AGMS and High AGMS). This resulted in 77 people failing the manipulation check and these were removed from the sample as well. Thus, the final sample consisted of 231 participants, with a mean age of 22.9 ($SD = 2.25$).

In the sample, 66 participants indicated to identify as male with a mean age of 23.4 ($SD = 2.52$). 165 participants indicated to identify as female with a mean age of 22.7 ($SD = 2.12$). Of these participants, 155 participants indicated to be attracted to males (67.1%), 65 participants to females (28.1%), ten participants indicated to be attracted to both (4.3%), and

one participant indicated to be pansexual (0.4%). Furthermore, 129 participants indicated to be in a relationship (55.8%), 82 participants indicated to be single (35.5%), and 20 participants indicated that they are dating someone now (8.7%). Finally, 38 participants indicated to be active on an online dating platform while participating (16.5%), 67 participants (29%) had never been active on an online dating, and 126 participants (54.5%) indicated that they were not active on an online dating platform while participating but have been in the past. Finally, the sample consisted of three conditions which were randomly assigned by Qualtrics which is shown in Table 1.

Table 1

Experimental conditions

Condition number	Condition description	Counts	%
1	No algorithmic matching score	88	38.1%
2	Low algorithmic matching score	67	29%
3	High algorithmic matching score	76	32.9%

Procedure

This online experiment was approved by the ethical committee of Tilburg University. Furthermore, the experiment was in Dutch. First, participants were invited to participate in this study by using the researchers' network (see Appendix A for Recruitment text). After participants signed up for the online experiment, they first saw an information and consent form about the study (see Appendix B for Information & consent form). This page contained information about the practicalities and the duration of the study. In addition, it was also stated that participation was completely voluntary and anonymous and that participants could withdraw at any time without any consequences.

Next, participants moved on to the first phase of the experiment. First, participants had to answer a couple of demographic questions (gender, age, sexual preferences, relationship status, and online dating experiences). Gender was asked as general background information to include in the paper about the demographics of the participants. This was the same for age, however, participants had to be 18 years or older in order to participate. Sexual preference was asked in order to show participants dating profiles based on their gender preference. When a participant had no preference, profiles of the opposite gender were shown. Relationship status and online dating experience were asked as control variables as these may potentially affect how participants participate in the experiment. Additionally, participants were asked to answer questions regarding their interests and dating preferences to provide input for the matching algorithm (e.g., would you like to have children, would you mind if your partner smoked cigarettes, see Appendix D for all these questions). These questions were used to give the participants the impression that the matching algorithm would be based on their data. However in reality, the input to these questions had no influence at all on the algorithm because the matching score was entirely fictitious. Alongside, participants were also asked about their trust in dating algorithms. After finishing this questionnaire, participants were shown a loading screen stating that "the algorithm is currently processing your information" for 10 seconds.

In phase two, participants were shown three fictitious dating profiles one at a time per condition. This means that participants were randomly assigned to dating profiles containing a high (90% – 99%), low (1% – 10%), or no matching score. In addition, these profiles consisted of a name, age, and profile picture. The profile pictures that were used were downloaded from open-source image websites, and are free to use for non-commercial purposes, and pre-tested for their attractiveness and divided into three categories: unattractive, medium attractive, and attractive profile pictures by a fellow master student. Accordingly, the

different matching scores were combined on these three profile picture groups (see Figure 2).

After each dating profile, participants had to fill in a questionnaire that measured their

romantic attractiveness, physical attractiveness, social attractiveness, and dating intention (see

Appendix E for the questionnaire). Finally, participants were thanked and debriefed. Here we

explained that the matching score was entirely fictitious and that the data they provided in the

first phase of the study was not used at all and was deleted after the completion of the first

phase (see Appendix C for debriefing).

Figure 2

Example dating profile (male, Low algorithmic matching score)
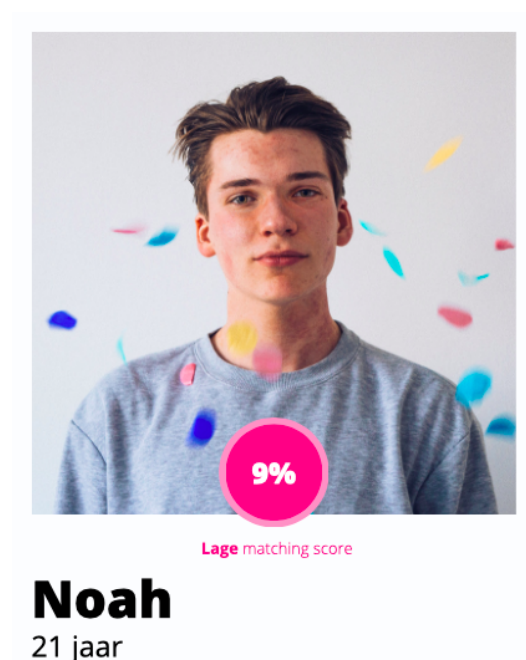
Measures

Trust in algorithms

To measure the participants' trust in algorithms items were retrieved from the

Algorithmic Beliefs scale created by Sharabi (2020) and measured by using a 7-point Likert

scale ranging from 1 (strongly disagree) to 7 (strongly agree). The items that were used were:

"Matching algorithms really work", "I would trust a matching algorithm for finding a partner", "Matching algorithms lead to more successful matches", "A matching algorithm can predict who I will be attracted to", "Matching Algorithms are better than I am in finding a partner", "Matching algorithms provide me with better quality matches", and "Matching algorithms are more effective than traditional ways of meeting people". Cronbach's $\alpha = .75$ showed an acceptable consistency for all items. Therefore, it was decided to compute the items of trust in algorithms of each dating profile into one score. In order to test the moderating effect of trust in algorithms as posed in hypothesis 3, we divided the participants in three groups based on the trust in algorithm score: Low Trust, Medium Trust, and High Trust in Algorithms.

Attractiveness & Dating intentions

To measure attractiveness, the scales by van der Zanden et al. (2021) were used. In this study, they looked at perceived attractiveness which consisted of three different constructs, namely: physical attraction, social attraction, and romantic attraction. Each of these constructs were measured with multiple items by using a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree).

Firstly, physical attraction was measured by using three items that were retrieved from the physical attraction scale created by McCain & McCroskey (1974). These items contained; "I find this person handsome", "I find this person good-looking" and "I find this person attractive physically". Cronbach's alpha showed good consistency for all items of physical attraction for all three dating profiles ($\alpha = .89$). Therefore, it was decided to compute the items of physical attraction of each dating profile into one score. Social attraction was measured by using three items from the same scale by McCain & McCroskey (1974). These items were: "I think this person could be a friend of mine", "I think this person is nice to spend time with",

"I think this person would fit into my circle of friends". Cronbach's alpha also showed a good consistency for all items for all three dating for social attraction (α = .85), therefore all items were computed into one score. For romantic attraction three items were retrieved from Campbell (1999). These items contained: "I would like to have a relationship with this person", "I feel attracted to this person" and "I would like to go on a date with this person". Cronbach's alpha showed again a good consistency for all items for all three dating for romantic attraction (α = .88), again these items were also computed into one score. Therefore, it was again decided to compute the items of social attraction of each dating profile into one score.

To measure dating intentions, it is decided to measure this via a like and dislike button inspired by the design of the dating application Tinder (Tinder, 2022). In other words, the like button means that you want to be a match with this person and a dislike button means that you do not want to be a match with this person. However, unfortunately, Cronbach's alpha was unacceptable for all items for all three dating profiles for dating intentions (α = .39), which led to the conclusion that this scale was not reliable and therefore could not be included in the analysis.

Data-analysis

This study made use of a one factor between-subject design with one independent variable *matching score*, one dependent variables *attractiveness (divided into three constructs: physical attraction, social attraction, and romantic attraction),* and one moderator *trust in matching algorithms*. It was hypothesized that a higher *matching score* would lead to higher *dating intentions* and *attractiveness*. Furthermore, it was hypnotized that this main effect would be influenced by the moderator *trust in matching algorithms*. Statistical analyses were performed using SPSS Statistics. First, prior checks were performed to assess internal

consistency of the scales. Next, these scales were computed to gather and tested for normality and homogeneity. Lastly, to assess the main effect and to assess the effect of the moderator on the relationship between the IV and the DV, a Multivariate General Linear Model was performed.

Table 2

Means scores for computed subscales

Attractive scale	Mean score	Standard Deviation
Physical attraction	3.81	1.04
Social attraction	4.37	0.87
Romantic attraction	3.17	1.06
Trust in Algorithms	3.96	0.84

Results

Prior checks

Tests were performed to assess normality and homogeneity of the four constructs. For normality K-S test was used. For physical attraction, No AGMS ($D(88) = .095$, $p = .048$) and Low AGMS ($D(67) = .152$, $p < .001$) deviated significantly from normal. However, there was no significant deviation for High AGMS ($D(76) = .098$, $p = .069$). For social attraction, No AGMS was not significant ($D(88) = .092$, $p = .060$), however Low AGMS ($D(67) = .210$, $p < .001$) and for High AGMS ($D(76) = .111$, $p = .022$) were significant. For romantic attraction, all scores not significantly deviated from normality ($D(88) = .068$, $p = .200$ for No AGMS, $D(67) = .094$, $p = .200$ for Low AGMS, $D(76) = .097$, $p = .076$ for High AGMS). For trust in algorithms the difference scores all deviated significantly from normal ($D(88) = .217$, $p < .001$ for No AGMS, $D(67) = .218$, $p < .001$ for Low AGMS, and $D(76) = .251$, $p < .001$ for

High AGMS). To test homogeneity Levene's test was used. There were no homogeneity issues since Levene's test was not significant for all the constructs, physical attraction (p = .342), social attraction (p = .315), romantic attraction (p = .750), and trust in algorithms (p = .106).

Thus, the dependent variables were not normally distributed, for the conditions No AGMS and Low AGMS for physical attraction and Low AGMS and High AGMS for social attraction. For the moderator, trust in algorithms all conditions were not normally distributed. The assumption of homogeneity of variances was met. However, because normality was violated it was decided to bootstrap the analysis.

Testing hypothesis

A Multivariate General Linear Model was conducted to test three hypotheses. H1 posed that a high matching score leads to higher dating intentions and attractiveness than a low matching score. H2 posed that a low matching score leads to lower dating intentions and attractiveness than a high matching score. To test these hypotheses, Pillai's trace was taken. Pillai's trace showed that there was no significant overall effect of *Algorithmic matching scores* on *Attractiveness*, V = 0.048, F(6, 442) = 1.79, p = .099, η^2 = .024. However, separate univariate tests on the outcome variables revealed a small effect on *social attraction*, F(2, 222) = 2.82, p = .062, η^2 = .025. Furthermore, pairwise comparisons showed a significant difference between High AGMS (*M* = 4.57, *SD* = 0.74) and No AGMS (*M* = 4.31, *SD* = 0.94, *Mdiff* = .269, p = .054) and between High AGMS and Low AGMS (*M* = 4.25, *SD* = 0.90, *Mdiff* = .316, p = .032). There were no separate effects found for physical attraction (F(2, 222) = 1.27, p = .284, η^2 = .011) and romantic attracting (F(2, 222) = .024, p = .976, η^2 = .000).

Furthermore, although not hypothesized we also checked the main effect of trust in algorithms on attractiveness. There was a significant effect of *Trust in algorithms* on *Attractiveness*, $V = 0.059$, $F(6, 442) = 2.24$, $p = .039$, $\eta^2 = .030$. Separate univariate tests on the outcome variables revealed that this effect only occurred for romantic attraction, $F(2, 222) = 4.53$, $p = .012$, $\eta^2 = .039$. Pairwise comparisons showed a significant difference between Low Trust ($M = 2.91$, $SD = 0.74$) and Medium Trust ($M = 3.22$, $SD = 1.07$, $Mdiff = -.330$, $p = .052$) and Low Trust and High Trust ($M = 3.40$, $SD = 1.00$, $Mdiff = -.509$, $p = .003$). Thus, it can be concluded that a higher matching score leads to higher social attraction and that higher trust leads to higher romantic attraction. However, the other constructs of attraction turned out to be no significant, therefore *H1* and *H2* were not supported.

H3 posed that the effect of matching score on dating intention and attractiveness will be moderated by trust in matching algorithms so that the effect of matching score on dating intention and attractiveness will be higher for people with high trust than for people with low trust in algorithms. To test hypothesis, Pillai's trace was taken. The test showed that there was no significant interaction effect between trust in algorithms and matching score, $V = .059$, $F(12,666) = .924$, $p = .552$, $\eta^2 = .016$. Separate univariate tests on the outcome variables revealed that there was no significant interaction effect on physical attraction $F(4, 222) = 1.706$, $p = .150$, $\eta^2 = .030$, social attraction $F(4, 222) = .423$, $p = .792$, $\eta^2 = .008$, and romantic attraction $F(4, 222) = 1.832$, $p = .124$, $\eta^2 = .032$. However, pairwise comparisons showed a significant interaction effect on physical attraction for the Medium Trust group between High AGMS ($M = 4.22$, $SD = 0.23$) and Low AGMS ($M = 3.66$, $SD = 0.22$, $Mdiff = .560$, $p = .074$) and between High AGMS and No AGMS ($M = 3.61$, $SD = 0.17$, $Mdiff = .603$, $p = .033$). This interaction effect was also found on social attraction for the Medium Trust group between High AGMS ($M = 4.82$, $SD = 0.19$) and Low AGMS ($M = 4.29$, $SD = 0.18$, $Mdiff = .530$, $p = .045$) and between High AGMS and No AGMS ($M = 4.38$, $SD = 0.14$, $Mdiff$

= .432, *p* = .069) (see Table 3 for means and standard deviations for all conditions). Thus, it can be concluded that although there is no overall interaction effect between trust in algorithms and matching score, for physical attraction and social attraction the results showed some significant interactions between trust and AGMS. Participants who had medium trust in algorithms were affected more by the high matching score for physical and social attraction than people low or high in trust. However, the other construct combinations turned out to be not significant. Therefore, it can be concluded that *H3* is rejected.

Table 3

Means per condition

		Physical attraction (M + SD)	Social attraction (M + SD)	Romantic attraction (M + SD)
Low Trust	**No AGMS**	3.85 (0.20)	4.21 (0.17)	3.21 (0.21)
	Low AGMS	3.43 (0.22)	4.07 (0.19)	2.63 (0.22)
	High AGMS	3.77 (0.19)	4.38 (0.16)	2.86 (0.19)
Medium Trust	**No AGMS**	3.61 (0.17)	4.38 (0.14)	3.20 (0.17)
	Low AGMS	3.66 (0.22)	4.29 (0.18)	3.14 (0.22)
	High AGMS	4.22 (0.23)	4.82 (0.19)	3.35 (0.21)
High Trust	**No AGMS**	3.76 (0.21)	4.31 (0.18)	3.19 (0.21)
	Low AGMS	4.18 (0.22)	4.41 (0.19)	3.71 (0.22)
	High AGMS	3.95 (0.20)	4.51 (0.17)	3.33 (0.21)

Discussion

The aim of this study was to examine the effect of an algorithmic matching score on attractiveness in online dating. Moreover, this study looked at whether this relationship was moderated by trust in algorithms. This was done by examining trust and attractiveness for dating profiles combined with no, low and high matching scores. It was found that an algorithmically generated matching score affected social attraction, but not physical or romantic attraction. Furthermore, it showed that trust in algorithms had no overall moderating effect on the relationship between an algorithmically generated matching and attractiveness.

Hypotheses and Results

Main effect

Hypothesis 1 proposed that an algorithmically generated matching score would lead to higher dating intentions and attractiveness, than cases with no algorithmic matching score. Accordingly, hypothesis 2 posed that a high algorithmic matching score leads to higher dating intentions and attractiveness than a low algorithmic matching score. However, neither of these hypotheses proved to be true. This study solely found the matching score to have a small effect on social attraction. There were no effects found for physical and romantic attraction. This may be explained by the purpose of the matching score, which is to indicate similarities between individuals based on the information in their profiles, and the design of the study. The matching score is mainly based on social similarities between two individuals, like age, location, interests, and personality traits. As a result, the questions that were used during the manipulation phase of the matching score (Appendix D) were mainly about resemblance and friendship, rather than romantic relationship. Accordingly, participants may have been convinced that the matching score was only based on these social similarities. Thus it may be assumed that the all we can and must expect from a matching algorithm on online dating site

is the ability for finding social similarities. This may explain why there was only an effect found on social attraction.

Although not hypothesized, the study did find that higher trust leads to higher romantic attraction. This could be explained by the fact that people who already have high trust in dating algorithm are more likely to be convinced that the matching algorithm does its job and delivers compatible matches, making them willing to go on a date faster. This finding is consistent with previous research that has stated that confidence in a matching algorithm causes more romantic outcomes (Fagan & Bosson, 2013).

Moderation effect

The third hypothesis posed that the effect of a matching score on attractiveness and dating intentions would be higher for participants who have higher trust in algorithms, than for participants who have lower trust in algorithms. The results showed that there was no overall moderating effect of trust in algorithms on matching score and attractiveness. It may be concluded that regardless of their level of trust in algorithms, people are equally influenced by a matching score. This may be because trust in algorithms affects overall perceptions of dating sites, which use various algorithms in addition to matching scores, rather than specifically impacting the influence of a matching score.

However, it was also found that participants with medium trust in dating site algorithms were affected more by the high matching score for physical and social attraction than people with low or high trust. It could be the case that people with high trust in algorithms trust dating sites more in general, and therefore are not swayed by matching scores specifically, but merely trust general dating site algorithms to offer them suitable matches. This may be opposite for people who have a low trust who trust neither dating sites nor algorithms. People who are in between these groups (i.e., medium trust) are therefore the ones that would influenced by the matching score itself. This can be explained by prior research,

that showed that individuals with high levels of trust in algorithms were more likely to use a matching score as a cue for attraction and compatibility, and were more likely to initiate contact with individuals who received high scores. On the other hand, it was found that individuals who had a low level of trust in algorithms were less likely to use the matching score as a cue and were less likely to initiate contact with individuals who received high scores (Toma et al., 2008). This suggests that people who have a high trust in algorithms may be more likely to trust a dating site and its matching algorithm, regardless of the matching score, and that people who have a low trust in algorithms may not trust the matching algorithm, regardless of the matching score. Therefore, it can be suggested that people who fall in between these two groups (i.e., those with medium trust in algorithms) may be more influenced by a matching score, as the findings suggest, as they may be more open to using the score as a cue for attraction and compatibility.

Implications

When answering the research question "To what extent does a matching score affect attractiveness and dating intentions and is this effect moderated by the amount of trust in dating algorithms?", it can be concluded that a matching score only affects social attractiveness and not physical and romantic attractiveness. Furthermore, results showed that there was an effect of trust on attractiveness and a small interaction effect of medium trust on matching score and attractiveness.

As this study showed, matching scores have no overall effect on attraction, but influence social attraction only. In addition, profile photos appear to primarily influence physical attraction (Whitty, 2008; Fiore et al., 2008). Thus, it may be that people do not form one general impression of a person, but form different perceptions based on different cues on a dating profile. This challenges the assumption that attractiveness in general can be measured

by the three constructs used in this research, namely: physical attraction, social attraction, and romantic attraction (van der Zanden et al., 2021). For future research, it might be useful to consider factors such as profile photos and matching scores but also age, gender, and textual descriptions that influence different types of attraction rather than considering attractiveness altogether as a single construct. This could be done by investigating the specific roles that these factors play in the different types of attraction. For example, by conducting a study in which participants are shown different profiles with varying combinations of these factors and asked to rate the attractiveness of the profiles in each of these categories. This type of research could help provide a more nuanced understanding of how different factors influence different types of attraction in online dating, and could contribute to the development of matching algorithms and dating profiles that are better and more effectively tailored to the users' preferences.

Additionally, physical attractiveness may outweigh the matching score when deciding on a potential partner. This idea is supported by research that suggests physical attractiveness acts as a sort of filter, guiding us toward potential mates (Weeden & Sabini, 2005). It is suggested that individuals tend to use superficial as well as deeper cues when evaluating potential matches on dating websites and apps (Toma et al., 2008). Superficial cues however, such as physical appearance and the content of profile pictures, have been shown to be important in the primary stages of online dating (Fossby et al., 2019). This suggests that people may already initially form an impression of physical attraction based on profile photos, before considering other cues such as a matching score. Further research is needed to better understand the specific order in which people consider these different components when they evaluate potential matches on dating websites and apps.

Lastly, this research has implications for existing theories on trust in algorithms, which have typically distinguished between high trust and low trust (Glikson & Woolley,

2020; Lankton et al., 2015). These theories suggest that trust in algorithms is built up from a variety of factors, including the reliability and accuracy of the algorithm, the transparency and accountability of the system, and the perceived benefits and risks of using the algorithm. Furthermore, people with high trust are more likely to follow the suggestions of an algorithm than those with low trust (Miller et al., 2006). However, there has been little mention of people with medium trust in algorithms in these theories. The findings of this study show those with an average level of trust in algorithms were mostly influenced by a matching score in determining attractiveness of an online dating profile owner. It could be that especially this group may be affected by an algorithm, provided it is designed well. Those with a high level of trust may trust an algorithm regardless and those with a low level of trust may never trust an algorithm. Those in the middle though may be convinced of the value of a matching score if they think it will aid them in determining attractiveness of a dating profile owner. This information is important when it comes to finetuning and updating already existing theories on algorithms.

Limitations & suggestions for further research

One limitation of the research was the high dropout rate during the online experiment. Many participants were not able to recall whether the matching scores were displayed in the dating profiles they saw. Furthermore, some participants did not understand what the matching scores represented. This caused 77 people to be removed from the sample. In addition, some people indicated they understood what the matching score entailed, but in fact, did not clearly grasp the concept. Additionally, when discussing with the researcher after their participation, participants reported that they were being shown the same percentage for all three profiles which led to some confusion. This was particularly common among participants who were shown a low matching score, which made them pay less attention to the matching

score in general. This confusion potentially influenced many other participants, hence it could be that this influenced the results. Further research should test the matching score again, and see if it still has an effect if it is presented in a clear context. It is of importance that each participant clearly understands what this score is based on. Additionally, there should be more variety between the displayed scores.

Another limitation of this study is that during the manipulation phase, the participants only had to answer four questions to provide information for the algorithm to generate a matching score. This may have contributed to the fact that people did not find the matching score very convincing. One suggestion for further research would be to create a more convincing and elaborate fake matching algorithm. This can be done by including more specific dating and partner-related questions during the manipulation phase. This could also involve adapting an entire questionnaire from an actual online dating site that uses matching algorithms.

Lastly, the experiment was designed to resemble an online dating site as closely as possible, which included the use of a loading screen and profile appearance based on actual dating sites. However, the profiles in the experiment were static and lacked the ability for participants to click on them, view additional photos, or read more information. In the real world, online dating profiles are often interactive and allow users to learn more about the person behind the profile. This may have contributed to a feeling that the experiment was obviously manipulated, potentially threatening the ecological validity of the study.

Conclusion

In conclusion, the present study aimed to investigate the effect of an algorithmic matching score on attractiveness and dating intentions and to examine whether this effect was moderated by trust in algorithms. Although little of the hypothesized effects were confirmed,

it was found that there is an effect of online dating matching scores on social attraction, of trust in algorithms on attractiveness, and that there is a small interaction effect of medium trust on matching score and attractiveness. These findings suggest that algorithmic matching scores significantly affect social attractiveness, suggesting that a matching score may only work for matching people on their similar social characteristics. Furthermore, the findings of this study suggest that when assessing attractiveness during online dating, people with a medium level of trust in algorithms are most influenced by a matching score. This implies that individuals with medium trust in algorithms may be more receptive to the influence of a matching score, while those with either high or low trust are less affected. These results highlight the importance of trust in algorithms as a moderating factor in the relationship between matching scores and attractiveness in online dating. Future research should aim to replicate and extend these findings, and to better understand the mechanisms underlying this relationship. As the world becomes increasingly reliant on algorithms in all sorts of domains, including online dating, it is of importance to keep considering the role of trust in the effectiveness and acceptance of these systems.

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Appendix A

Recruitment text

Beste Netwerk,

Momenteel ben ik bezig met mijn afstudeerscriptie van de master Communication & Information Sciences aan Tilburg University en ik heb JOUW hulp nodig 💪!

Voor mijn scriptie doe ik onderzoek naar het effect van (vertrouwen in)/ algoritmes binnen online dating. Online dating is tegenwoordig natuurlijk helemaal *hot* 🔥, daarom wil ik jou vragen mee te doen aan dit onderzoek.

Deelnemen duurt slecht 15 minuutjes en is geheel vrijblijvend en anoniem. Verder maakt het niet uit of je ervaring hebt met online dating dan wel of je single bent of niet. Wel zoeken we deelnemers tussen de 18 en 24 jaar oud zijn.

Om het deelnemen nog *hotter* te maken maak je kans op een Bol.com gift-card ter waarde van €25,- . Het enige wat je hiervoor hoeft te doen is je emailadres achterlaten aan het eind van het onderzoek. Dit emailadres zullen we uiteraard enkel gebruiken om de winnaar op de hoogte te brengen en wordt daarna direct weer verwijderd.

Dus, waar wacht je nog op 🤩? Deelnemen kan via de volgende link: *[link naar experiment]*.

Alvast hartelijk bedankt voor het deelnemen!

Matthew/Lars.

Appendix B

Information & consent form

Heel fijn dat je mee wilt doen aan dit onderzoek van de Universiteit van Tilburg! Hieronder kun je alle informatie lezen die nodig is voordat je kunt starten met het onderzoek, lees het dus goed door.

Met dit onderzoek willen wij meer inzicht krijgen in hoe mensen online datingprofielen van anderen beoordelen. Daarom vragen wij jou om straks een aantal datingprofielen te bekijken en deze te beoordelen door een aantal stellingen te beantwoorden.

Deelname aan dit onderzoek zal ongeveer 10 minuten in beslag nemen. Er zijn geen risico's aan deelname aan dit onderzoek verbonden. Alle dataverzameling gaat conform de AVG (Algemene Verordering Gegevensbescherming) regels en de Research Ethics and Data Management Committee van Tilburg School of Humanities and Digital Sciences heeft toestemming gegeven voor het uitvoeren van dit onderzoek. Gegevens zullen volledig anoniem verwerkt worden en hoogst vertrouwelijk behandeld worden. In geen enkel geval zal jouw naam verbonden worden aan de resultaten, aangezien je aan het begin van het onderzoek een unieke code krijgt toegewezen. De geanonimiseerde data van deze studie zullen 10 jaar bewaard blijven en kunnen met anderen gedeeld worden voor niet-commerciële doeleinden.

Het onderzoek is geheel vrijwillig en tijdens het onderzoek heb je het recht om je te allen tijde terug te trekken, om welke reden dan ook en zonder dat dit nadelige gevolgen heeft. Als je op een later moment nog vragen hebt over het onderzoek dan kun je contact opnemen met hoofdonderzoeker Alexander Schouten (a.p.schouten@tilburguniversity.edu). Voor eventuele opmerkingen of klachten over dit onderzoek kun je ook contact opnemen met de Research Ethics and Data Management Committee van Tilburg School of Humanities and Digital Sciences via tshd.redc@tilburguniversity.edu

Wanneer je aangeeft mee te willen doen aan het onderzoek, geef je aan:

• dat je de hierboven gegeven informatie goed hebt doorgelezen;

• dat je ouder bent dan 18 jaar;

• dat je weet dat je je te allen tijde en zonder het opgeven van een reden terug mag trekken;

• dat je ermee instemt dat je geanonimiseerde data tien jaar opgeslagen zullen worden;

• dat je ermee instemt dat de geanonimiseerde data gebruikt kunnen worden voor eventueel vervolgonderzoek of wetenschappelijke publicaties;

• dat je ermee instemt dat de geanonimiseerde data gedeeld kunnen worden met andere onderzoekers;

• dat je ermee instemt dat je de opzet en het doel van dit experiment niet aan anderen doorvertelt.

o Ik stem hiermee in en wil starten met het onderzoek

o Ik stem hier niet mee in en wens niet deel te nemen aan het onderzoek

Appendix C

Debriefing form

Dit is het einde van dit onderzoek. Nogmaals heel erg bedankt voor het deelnemen!

In het begin vertelde we je dat het onderzoek gaat over het effect van algoritmes binnen online dating en of het vertrouwen in deze algoritmes invloed op had op dit effect. Echter, onderzochte we ook nog een effect, waar we je van tevoren nog niets over konden vertellen. In dit geval zou het namelijk mogelijk kunnen zijn dat deze informatie jouw keuzes gedurende het onderzoek zouden beïnvloeden.

Nu het onderzoek voorbij is, willen we graag ook op de hoogte stellen van het derde doel van dit onderzoek; namelijk wat het effect is van matching scores binnen online dating. Het kan zijn dat jij zojuist drie dating profielen gezien hebt met een bepaalde score/percentage geïntegreerd. Wij zijn benieuwd of deze score de aantrekkelijkheid ten opzichte van de dating profiel eigenaar beïnvloedt, we verwachten namelijk van wel! Met andere woorden, wij denken dat een hoge matching score (bijvoorbeeld een score van hoger dan 90%) uiteindelijk ervoor zorgt dat je meer bent aangetrokken tot de eigenaar van het profiel. Een lage matching score (onder de 10%) zou het tegenovergestelde effect moeten hebben.

Om ervoor te zorgen dat jij, als deelnemer van dit onderzoek, het gevoel had dat deze matching score en de dating profielen die je getoond zijn gedurende het experiment, daadwerkelijk gebaseerd waren op jou als fictief online dating platform gebruiker, hebben we je aan het begin van het onderzoek vier vragen laten invullen (bijvoorbeeld of je het erg zou vinden als je partner zou roken). Echter, de antwoorden op deze vragen hadden geen enkele invloed op het matching algoritme dan wel op de uiteindelijke matching scores. Met andere woorden, de getoonde matching scores waren niet op informatie gerelateerd aan jou en dus compleet gemanipuleerd. Aangezien de antwoorden op deze vragen toch geen functie had in het experiment, zijn ze direct na het invullen verwijderd.

Nadat je deze vragen had beantwoord, kreeg je drie dating profielen te zien met een aantrekkelijke, gemiddeld aantrekkelijke, en een niet aantrekkelijke profielfoto (gecombineerd met een willekeurige hoge, lage, of geen matching score). De aantrekkelijkheid van de profielfoto's is dus ook gemanipuleerd binnen dit onderzoek, aangezien er wordt verwacht dat de matching score meer invloed zal hebben wanneer de profieleigenaar gemiddeld aantrekkelijk is. Of dit ook daadwerkelijk het geval is hopen we snel vast te kunnen stellen, mede dankzij jouw hulp!

Heb je vragen of opmerkingen? Neem dan contact op met een van ons (Matthew Kouwenberg: m.f.l.kouwenberg@tilburguniversity.edu of Lars van der Linde l.t.vdrlinde@uvt.nl). Voor eventuele opmerkingen of klachten over dit onderzoek kun je ook contact opnemen met de Research Ethics and Data Management Committee van Tilburg School of Humanities and Digital Sciences via tshd.redc@tilburguniversity.edu.

Indien je jouw deelname aan dit onderzoek alsnog wilt intrekken, is dat mogelijk door de onderstaande optie te selecteren. In dit geval verwijderen je gegevens uit de database.

Zo niet, willen we je heel erg bedanken voor je deelname.

Groetjes, Lars van der Linde / Matthew Kouwenberg

Appendix D

Questions phase 1

1. What gender do you identify as?

[Male; Female; Other, namely... (e.g., non-binary, multigender, etc.); Prefer not to say]

2. What gender do you prefer for your dating partner?

[Male; Female; Other, namely... (e.g., non-binary, multigender, etc.); Prefer not to say]

3. What is your age (in years)?

[fill in your age]

4. What is your relationship status?

[Single; Relationship; Other, namely…; Prefer not to say]

5. What is your online dating experience?

[I did used it once, I use it on daily basis, I do not have any experiences, Prefer not to day]

6. Which of the following are most important in a relationship to you (choose 2)?

[To give each other enough space; To be considerate of each other; Not examining everything in depth; Making life easier and peaceful for one another; Accepting each other's imperfections; Always trying new things; To stick to a routine]

7. What is most likely to make you interested in someone (choose 2)?

[Their career or education; Financial security; Health and fitness; Warm-heartedness; Appearance]

8. Would you like to have children (in the future)?

[Yes; No; Not sure yet]

9. Would you mind if your partner smoked cigarettes?

[Yes; No; No opinion]

Appendix E

Questions phase 2

1. I find the person in the dating profile handsome

   [Strongly disagree; Disagree; Somewhat disagree; Neither agree nor disagree; Somewhat

   agree; agree; strongly agree]

2. I find the person in the dating profile physical attractive

   [Strongly disagree; Disagree; Somewhat disagree; Neither agree nor disagree; Somewhat

   agree; agree; strongly agree]

3. I find the person in the dating profile good looking

   [Strongly disagree; Disagree; Somewhat disagree; Neither agree nor disagree; Somewhat

   agree; agree; strongly agree]

4. I find the person in the dating profile pleasant to go around with

   [Strongly disagree; Disagree; Somewhat disagree; Neither agree nor disagree; Somewhat

   agree; agree; strongly agree]

5. I think the person in the dating profile and I could be friends.

   [Strongly disagree; Disagree; Somewhat disagree; Neither agree nor disagree; Somewhat

   agree; agree; strongly agree]

6. I think the person in the dating profile would fit well into my group of friends.

   [Strongly disagree; Disagree; Somewhat disagree; Neither agree nor disagree; Somewhat

   agree; agree; strongly agree]

7. I would like to have the person in the dating profile as my dating's partner.

   [Strongly disagree; Disagree; Somewhat disagree; Neither agree nor disagree; Somewhat

   agree; agree; strongly agree]

8. I would like to go on a date with the person in the dating profile.

[Strongly disagree; Disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; agree; strongly agree]

9. I would feel good if I was dating the person in the dating profile.

    [Strongly disagree; Disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; agree; strongly agree]

10. Then choose whether you would like or dislike the person in the dating profile

    [Like; Dislike]