

Pathways to online infidelity

Title. Pathways to online infidelity: the roles of perceived online dating success, perceived availability of alternative partners, and mate value discrepancy

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Abstract

Online dating applications have become increasingly popular in recent years and a common way for relationship initiation. However, the potential implications of online dating applications for long-term relationships are not well-understood. To further the literature in this field, this study aimed to examine the association between perceived online dating success and online infidelity-related behaviours by considering two possible indirect paths through perceived number of alternative partners or mate value discrepancy (i.e., mate value relative to one's partner) and attention to alternatives. A total of 338 individuals that were currently in an exclusive long-term relationship participated in this study. A serial mediation analysis with two parallel paths revealed that perceived online dating success is associated with higher perceived availability of alternative partners and higher mate value relative to one's partner, both of which are associated with attention to alternatives that, in turn, increases engagement in online infidelity-related behaviours. No direct association between perceived online dating success and online infidelity-related behaviours was found.

Keywords: online dating; online infidelity; mate value; partner availability; attention to alternatives.

Pathways to online infidelity: the roles of perceived online dating success, perceived availability of alternative partners, and mate value discrepancy

Online dating services have become increasingly popular in recent years. The number of online daters is estimated to reach 280 million by 2024 (Dixon, 2022). Currently, most couples in the United States meet online than more traditional means such as through friends and family (Rosenfeld et al., 2019). Although online dating services are a useful tool in expanding its user's social networks and connecting them with partners they would have otherwise never met (Ortega & Hergovich, 2017), the use of such services may pose several consequences for romantic relationships. Specifically, dating apps may influence not only how individuals select and meet partners, but also how committed they are to their exclusive relationships. Previous literature has found that the use of dating applications is associated with higher likelihood of engaging in casual sex (Choi et al., 2016; Lefebvre, 2018). Among individuals in committed relationships, the use of dating applications has been found to facilitate sexual infidelity (Hobbs et al., 2014; Weiser, et al., 2018) and may lead to reduced commitment and pursuit of extra-dyadic partners among those individuals who are successful at online dating (Timmermans & Courtois, 2018). Furthermore, relationships initiated online may be more vulnerable to infidelity, and that online dating success may increase intentions to commit infidelity through perceived number of available partners (Alexopoulos et al., 2020). Similarly, users of online dating services tend to have a higher short-term relationship orientation than non-users (Barrada et al., 2021).

However, the mechanisms through which the use of dating apps may influence romantic decisions and relationship outcomes are not well understood, particularly infidelity. In particular, the mechanisms that link online dating success to low commitment (Timmermans & Courtois, 2018) and intentions to engage in infidelity (Alexopoulos et al., 2020) are not clear. Incidentally, consistent with previous literature, online dating success here is defined as

receiving attention from attractive partners online (i.e., being liked back, having online interactions that result in face-to-face dates) and achieving one's own online dating goals (e.g., finding a long/short-term partner; Gibbs et al., 2006; Strugo & Muise, 2019). Previous studies have argued that online dating success may give users the perception that there is an unlimited pool of potential high-quality partners available (Best & Delmege, 2012; Erjavec & Fišer, 2016; Heino et al., 2010; Timmermans et al., 2018), which in turn, increases their intentions to engage in infidelity (Alexopoulos et al., 2020). Additionally, online dating success may boost individuals' self-perceived desirability (Starrat et al., 2016). As a result, individuals may feel motivated to keep on searching for better alternatives even if they have already found a partner, which may lead to infidelity (D'Angelo & Toma, 2017). The current study sought to test these hypotheses to best understand the consequences of dating apps for romantic relationships. Specifically, we aimed to test potential indirect links between online dating success and online infidelity-related behaviours through mate value discrepancy (i.e., distance between self- and partner's mate value), perceived number of available partners, and attention to alternatives. Exploring these links is important because, although there are a substantial number of studies exploring motives for using dating applications, characteristics of users, usage characteristics, risks and benefits (for a review, see Castro & Barrada, 2020), with very few exceptions (e.g., Alexopoulos et al., 2020; Timmermans et al., 2018), studies exploring the implications of dating applications usage for users' long-term relationships are scarce.

Online infidelity and use of dating applications

Although multiple definitions of online infidelity can be found in the literature, in the current study, online infidelity is defined as “a romantic or sexual contact facilitated by Internet use that is seen by at least one partner as an unacceptable breach of their marital contract of faithfulness” (Hertlein & Piercy, 2008, p. 484). However, online infidelity, especially subtle forms that do not necessarily involve sexual activities, has been overlooked

by current literature (Cravens & Whiting, 2014). Further understanding of online infidelity is important as a recent review found that individuals consider online cheating as a real act of infidelity with negative implications for relationships and wellbeing, and women in comparison to men are more likely to find online infidelity distressing (Abbasi & Dibble, 2021; Muscanell et al., 2013).

Several researchers propose that online dating produces a “shopping culture” of daters (e.g., Best & Delmege, 2012; Timmermans et al., 2018). Indeed, D’Angelo and Toma (2017) assigned participants either to a small (i.e., six) or large (i.e., 24) pool of potential partners, and measured participants’ satisfaction with their choice a week later. Participants that selected from a larger set of potential partners were less satisfied with their choice than those who selected from a small pool of potential partners, particularly if they were given the option to reverse their choice. A recent study with 415 Canadian participants found that use of dating applications is associated with higher probability of having multiple sexual partners (Shapiro et al., 2017). Additionally, a study in the United States with a sample of 395 found that people’s perceived online dating success was positively associated with higher intentions to engage in infidelity (Alexopoulos et al., 2020). Importantly, individuals who have greater intentions to commit infidelity and that find infidelity more acceptable are more likely to commit infidelity both online and offline (Weiser et al., 2018; Martins et al., 2016). Although the association between online dating success and infidelity seems clear, the mechanism behind this association is yet to be fully understood. Therefore, in the current study, we argue that perception of alternative partner availability and mate value discrepancy, which are both associated with online dating, are two important factors that may shed light on the association between online dating success and infidelity.

Online dating success, perceived availability of alternative partners and infidelity

The *investment model* (Rusbult & Buunk, 1993) provides a framework for explaining how the perceived availability of alternative partners linked to online dating success may be associated with online infidelity. According to the investment model, individuals feel more committed to their relationships when (1) they are satisfied with their relationship (i.e., the benefits of the relationship outweigh its costs), (2) they believe they have scarce and/or poor-quality alternatives to their current partner, and (3) when they have heavily invested in their relationship (Rusbult & Buunk, 1993). Dating applications have the potential to provide its users with access to an abundant pool of potential partner alternatives and as such, give the users the impression that partner alternatives are unlimited. Indeed, Tinder alone registered over 6.5 million monthly downloads in 2021 (Dixon, 2022). Providing such a large pool of potential partners may carry several implications. Evidence has shown that the more choices online dating users have, the more likely they are to further search for potential partners, and to be less satisfied with the partner they select (Wu & Chiou, 2009; D'Angelo & Toma, 2017). Further, a recent survey with 667 adults found that use of dating applications is positively associated with perception of partner availability (Thomas et al., 2022). Perceived availability of alternative partners is defined here as the perception of attractive alternatives to a current partner and whether such alternatives are a viable option if their current relationship ended (Owen et al., 2017).

Similarly, economic models of scarcity and decision-making posit that whenever we make a choice, we incur a cost inherent in passing up alternatives, referred to as an opportunity cost (Buchanan, 1991). These opportunity costs can reduce the perceived desirability and value of a chosen option, and critically, “the more alternatives there are from which to choose, the greater our experience of the opportunity costs will be” (Schwartz & Ward, 2004, p. 95). Additionally, Pronk and Denissen (2020) find that as online dating options increase, rejections of potential partners increase and satisfaction with potential

partners decreases (the authors refer to this as a “rejection mind-set”), this is especially true for women. Experimental evidence has also shown that heterosexual men exposed to a mate availability condition expressed more unrestricted sociosexual attitudes and desires as well as reported higher intentions to engage in infidelity in comparison to men exposed to a mate scarcity condition (Arnocky et al., 2016). These findings suggest that being exposed to a seemingly abundant pool of potential alternative partners decreases women’s satisfaction with potential mates and makes men more unrestricted sexually (including making them more likely to cheat on their partners). Indeed, a large body of research suggests that the perception of potentially attractive alternatives to a current partner is a strong predictor of low commitment to the current partner (Le & Agnew, 2003; Le et al., 2010). As such, to the extent to which online dating success can increase perceptions of alternative mate quality and/or quantity (Brady & Baker, 2021), this success may also increase the likelihood of infidelity.

Online dating success, mate value discrepancy and infidelity

The sociometer theory (Leary & Baumeister, 2000) helps shed light on the role of mate value discrepancy as a mechanism linking online dating success to online infidelity. This theory considers mate value as a specific domain of self-esteem (Kirkpatrick & Ellis, 2006) that has the function of monitoring the quality of an individual’s relationships. As such, one’s mate value is directly dependent on one’s acceptance by potential mates (Kirkpatrick & Ellis, 2006). Because mate value works as a mating sociometer (i.e., monitors one’s social acceptance within the mating domain), we argue that receiving more attention from other online daters, and having more offline dates as a result, boosts the self-perceived mate value of successful online dating users. Indeed, evidence suggests that access to high-value partners is an indicative of an individual’s own mate value (Starrat et al., 2016). Importantly, access to high-value partners may be promoted by success on online dating (Alexopoulos et al., 2020).

In turn, access to high-value partners is a predictor of infidelity. The sexual strategies theory (Buss & Schmitt, 2021) and strategic pluralism theory (Gangestad & Simpson, 2000) propose that heterosexual men's mate value plays an important role in short-term mating because heterosexual women prioritise specific attributes (e.g., display of resources, physical attractiveness) in short-term partners. Similarly, these theories also predict that attractive women are preferred as short and long-term partners (Buss & Schmitt, 2021; Gangestad & Simpson, 2000). As such, people that are more physically attractive, and have higher mate value, are more likely to attract a higher number of short-term partners and, as a result, will have more infidelity opportunities (Pham & Shackelford, 2013). Indeed, a recent comprehensive meta-analysis that reviewed 33 published and unpublished studies ($N = 5928$) found that men with higher self-perceived global mate value were also more likely to engage in short-term relationships (Arnocky et al., 2021). There is also strong evidence demonstrating that more physically attractive women have more sexual partners and are more likely to engage in extra-dyadic behaviour (Arantes et al., 2020; Hughes & Gallup 2003).

While independent mate value is clearly an important factor shaping mating opportunities, intentions, and behaviours, mate value discrepancy (i.e., the relative difference between the mate value of two romantic partners) might play a more critical role in shaping both attention to alternative partners and willingness to engage in infidelity (Conroy-Beam et al., 2016). Research in this area is limited but suggests that people are aware of the risk that larger mate value discrepancies pose to the fidelity and longevity of their relationship. Individuals with lower relative mate value (compared to their partner), believe that their partners are more likely to cheat (Buss & Shackelford, 1997), experience more jealousy (Sidelinger & Booth-Butterfield, 2007), and engage in more frequent mate retention behaviours (buying your partner gifts, complimenting your partner, etc.), compared to people with higher relative mate value (Sela et al., 2017). As Sela and colleagues (2017) put it, "individuals

increase their mate retention efforts when they perceive a greater risk of partner infidelity (i.e., when the partner is of higher short-term mate value than themselves)” (p. 734). These fears may be justified, as individuals with higher relative mate value report less relationship satisfaction, particularly if they perceive their partner as less desirable than alternative mates (Conroy-Beam et al., 2016). In the extent to which online dating success is associated with mate value, higher relative mate value may explain the relationship between online dating success and infidelity.

Attention to alternatives: the link between mate value, and perception of alternative partner availability and infidelity

Given the evidence discussed above, a plausible conclusion is that mate value discrepancy and perception of alternative partner availability are associated with infidelity because both increase attention to alternative mating opportunities. People with higher mate value also tend to have higher standards and if their partner fails to meet such expectations, they may become unhappy with their relationship (Buss & Shackelford, 2008). Indeed, individuals who perceive themselves to be more attractive than their partners tend to become more unsatisfied with their relationship (Conroy-Beam et al., 2016). Individuals may then strategically search for better alternatives to their current partner, which may lead to infidelity, relationship termination, and eventually mate switching (Buss et al., 2017). As such, if unhappy with the mate value of their current partner in relation to their own, before engaging in infidelity and/or replacing the current partner, an essential first step would be to attend to potential alternatives and evaluate their quality as alternative partners. As such, any model that attempts to provide a more comprehensive understanding of the associations between online dating success and online infidelity cannot ignore attention to alternative partners.

The present study

In the current study, based on the investment model (Rusbult, 1980), the sociometer theory (Leary & Baumeister, 2000), and evolutionary and economic models of decision-making and partner choice (Buchanan, 1991; Buss & Schmitt, 2017), we propose that online dating success and infidelity related behaviours are linked through mate value discrepancy, perceived availability of alternative partners, and attention to alternatives. Specifically, we propose that success on online dating may increase users' self-perceived mate value in relation to their partner and give users the perception that there is an unlimited pool of potential alternative partners available. Together, these factors may motivate individuals to keep on searching for better partner alternatives (i.e., to attend to alternatives), which may ultimately result in infidelity. As such, this study tested potential indirect links between online dating success and online infidelity-related behaviours through mate value discrepancy, perceived availability of alternative partners, and attention to alternatives.

Based on the literature discussed previously, the following hypotheses (see Figure 1) were tested:

H1. There will be a positive association between success on online dating and engagement in online infidelity-related behaviours (H1a), mate value discrepancy (H1b), perceived availability of alternative partners (H1c), and attention to alternatives (H1d).

H2. Mate value discrepancy (H2a) and perceived availability of alternative partners (H2b) will be positively associated with attention to alternatives.

H3. Mate value discrepancy (H3a) and perceived availability of alternative partners (H3b) and attention to alternatives (H3c) will be positively associated with engagement in online infidelity-related behaviours.

H4. There will be an indirect association between success on online dating and engagement in online infidelity-related behaviours through mate value discrepancy and attention to alternatives.

H5. There will be an indirect association between success on online dating and engagement in online infidelity-related behaviours through perceived availability of alternative partners and attention to alternatives.

[Insert Figure 1 here]

Method

Procedure

Prior to data collection, this study was reviewed and approved by the Research Ethics Committee of a University in the United Kingdom (Reference number: 30814-A-Jul/2021-33312-1). The study took place online on Qualtrics in August 2021 and participants were recruited through Prolific Academic. Participants reimbursed for their time at the standard rate of £10/hr. Participants initially read the information sheet, and after giving their informed consent, they completed the self-report questionnaires detailed above. Participants were then redirected to a debriefing page containing a more detailed description of the study. Participation in the study took on average 20 minutes.

Participants

Participants were 338 individuals ($M_{age} = 28.99$, $SD_{age} = 8.31$), mostly women (71%), men (28.4%), and non-binary (0.6%), who were currently in a committed relationship (58.9%) or married or cohabiting (41.1%). To take part in the study, participants had to be in a committed relationship for at least two months. Specifically, participants were in a relationship for a year or less (41.4%), more than a year but less than/equal to five (31.8%), more than five but less than/equal to 10 (23.1%), and more than 10 years (3.6%). Most participants reported to be past users of online dating services (94.1%) as opposed to being current users (5.9%).

Similarly, 84.9% of the participants reported that they have never used online dating services while in a relationship, whereas 15.1% reported to have done so.

Materials

Perceived online dating success was measured using four items (i.e., *online dating users that I like tend to like me back; online dating users tend to start conversations with me; the chats I have with online dating users often result in a date; I feel I am able to achieve my online dating goals*) that were created for the current study based on previous literature (Gibbs et al., 2006; Strugo & Muise, 2019). The items were answered on a five-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree). Exploratory factor analysis revealed that all the items load on one factor (all factor loadings above 0.65). A composite score was created by averaging these four items wherein higher scores indicated higher perceived online dating success. The internal consistency coefficient (Cronbach's $\alpha = .62$) was deemed acceptable given the small number of items. Additionally, the scale obtained configural and metric invariance across genders but not scalar invariance. This means that the factor loadings and factor structure are similar in men and women (Milfont & Fisher, 2010; see Supplementary material), but gender comparisons are limited.

Mate value discrepancy. Mate value was measured using the *Mate Value Scale* (Edlund & Sagarin, 2014), which consists of four items (e.g., *Overall, how would you rate your level of desirability as a partner on the following scale? Overall, how good of a catch are you?*). The scale of response ranged from 1 (extremely undesirable/very bad catch) to 7 (extremely desirable/very good catch). The internal consistency coefficient (Cronbach's $\alpha = .84$) was satisfactory. The same scale was used to measure perceived partner mate value with the items edited accordingly (e.g., e.g., *Overall, how would you rate the level of desirability of your partner on the following scale? Overall, how good of a catch is your partner?*). The same scale

of response was used. The internal consistency coefficient (Cronbach's $\alpha = .87$) was satisfactory. The scores of mate value discrepancy were calculated by subtracting the scores of perceived partner mate value from the scores of own mate value. Higher scores on mate value discrepancy reflected higher own mate value in comparison to the partner.

Perceived availability of alternative partners was measured using three-items based on previous literature (e.g., *There are a large number of available partners out there; I believe there are many people who would be happy with me as their partner; I could find a desirable partner if I wanted or needed to*; Alexopoulos et al., 2020; James et al., 1996; Owen et al., 2017). The items were answered on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A composite score was created by averaging these three items wherein higher scores indicated higher perceived alternative partner availability. The internal consistency coefficient (Cronbach's $\alpha = .75$) was satisfactory.

Attention to alternatives was measured using a six-item scale (Miller, 1997), which evaluate interest in pursuing and seeking information about potential alternatives to their current partner (e.g., *I am distracted by other people that I find attractive; I rarely notice other good-looking or attractive people*). The items were answered on a five-point Likert scale that ranged from 1 (never) to 5 (always). A composite score was created by averaging these six items (one was reverse scored) wherein higher scores indicated more attention to alternatives. The internal consistency coefficient (Cronbach's $\alpha = .72$) was satisfactory.

Online infidelity-related behaviours were assessed using the *Social Media Infidelity-Related Behaviors* (SMIRB) scale (McDaniel et al., 2017). This scale consists of seven items (e.g., *I sometimes hide the things I say to others online from my spouse/partner; I sometimes wonder whether my spouse/partner would be upset if he/she read my chats, comments, or messages to others on social networking sites*). The items are answered on a six-point Likert

scale ranging from 1 (strongly disagree) to 6 (strongly agree). A composite score was created by averaging these seven items wherein higher scores indicated greater tendency to engage in online infidelity behaviours. The internal consistency coefficient (Cronbach's $\alpha = .81$) was satisfactory.

Data analysis strategy

The data analysis was conducted using SPSS version 28. PROCESS macro (Hayes, 2013; model 80) was applied to examine the serial indirect effects of mate value discrepancy, perceived availability of alternative partners, and attention to alternatives on the association between perceived online dating success and online infidelity-related behaviours. Perceived online dating success (X) was entered as the independent variable, whereas mate value discrepancy (M1), perceived availability of alternative partners (M2), and attention to alternatives (M3) were entered as serial mediators. The overall score of online infidelity-related behaviours was entered as the dependent variable (Y). The model controlled for sex (dummy coded, 0 = man, 1 = woman; because non-binary individuals represented less than 1% of our sample, these were removed from the main analysis), use of dating applications (0 = current user; 1 = past user), and use of dating applications while in a relationship (0 = yes; 1 = no). All continuous variables were standardised prior to the analysis. Indirect effects were tested with 5000 bootstrap iterations to compute 95% confidence intervals (CI). A follow-up analysis was conducted to test whether the serial mediation model was moderated by gender (Hayes, 2013; model 90).

Results

Preliminary analysis

Before testing the hypothesised model, we conducted some preliminary analysis. A correlation analysis demonstrated that perceived online dating success was associated with mate value discrepancy, perceived availability of alternatives, attention to alternatives, but not online infidelity (see Table 1). Despite the lack of a direct correlation between perceived online dating success and online infidelity behaviours, we still tested our hypothesised mediation model because indirect links between these variables could still be observed (Hayes, 2013).

[Insert Table 1 here]

Additionally, it was also observed that women scored higher than men on perceived online dating success ($t(143.8) = 6.15, p < .001$), while men scored higher than women on attention to alternatives ($t(137.4) = 5.12, p < .001$). Current users of online dating applications reported higher scores on perception of availability of alternatives ($t(25.14) = 3.99, p = .001$), attention to alternatives ($t(330) = 4.99, p < .001$), online infidelity ($t(330) = 2.28, p = .02$), and lower mate value discrepancy ($t(334) = 3.27, p < .001$), compared to past users. Similarly, individuals who have used dating applications while in a relationship reported higher scores on attention to alternatives ($t(61.6) = 4.88, p < .001$), and online infidelity ($t(57.8) = 3.26, p = .002$), and lower mate value discrepancy ($t(334) = 2.10, p = .01$), compared to those who have not.

Serial mediation analysis

Figure 2 shows the results of the serial mediation model (Model 80). Because gender, current use of dating applications, and use of dating applications while in a relationship were significantly associated with some of the variables, they were included in the model as

control variables. Overall, the model explained 31% of the variance in online infidelity-related behaviours.

[Insert Figure 2 here]

As presented in Table 2, the direct effect of perceived online dating success on engagement in online infidelity behaviours was not significant, which did not support our hypothesis (H1a). However, perceived online dating success was positively associated with mate value discrepancy ($\beta = .14, p = .01$) and perceived availability of alternatives ($\beta = .32, p < .001$), and negatively associated with attention to alternatives ($\beta = -.11, p = .03$), confirming H1b and H1c, and rejecting H1d respectively. In turn, consistent with our hypothesis, mate value discrepancy (H2a; $\beta = .25, p < .001$) and perceived availability of alternatives (H2b; $\beta = .24, p < .001$) were both positively associated with attention to alternatives. No associations were found between mate value discrepancy and online infidelity behaviours (H3a; $\beta = -.01, p = .34$). Surprisingly, we found a negative association between perceived availability of alternative partners and online infidelity behaviours (H3b; $\beta = -.15, p = .008$), and a positive association between attention to alternatives and in online infidelity behaviours (H3c; $\beta = .59, p < .001$). Importantly, the indirect effects of perceived alternative partner availability, mate value discrepancy, and attention to alternatives as serial mediators in the association between perceived online dating success and engagement in online infidelity behaviours were significant, confirming hypotheses H4 and H5 respectively. The indirect effects of perceived availability of alternative partners, and attention to alternatives as individual mediators in the association between perceived online dating success and online infidelity were also significant, but not the indirect effect of mate value discrepancy.

[Insert Table 2 here]

Next, we conducted a follow-up analysis to test whether the serial-mediation model was moderated by gender. The indexes of moderated mediation showed that the mediation model was not influenced by gender (see Table 3). However, one difference emerged between the moderated and the serial-moderation model, that is, in the former, the path between perceived online dating success and online infidelity through perceived number of available partners was only significant among women.

[Insert Table 3 here]

Discussion

In the current study, we examined a model that emphasised indirect effects between perceived online dating success (i.e., achieving personal online dating goals and receiving attention from other online daters) and online infidelity-related behaviours (i.e., engaging in a secretive, romantic, and/or sexual interactions with someone other than the partner online) through mate value discrepancy, perceived availability of alternative partners, and attention to alternatives. Consistent with our predictions (H1), individuals who reported more online dating success also reported higher relative mate value (compared to their partner), and perceived higher availability of alternative partners. Also, in line with our hypothesis (H2), people with higher relative mate value and those who perceive higher availability of alternative partners, also report paying more attention to alternative partners. As anticipated (H3), individuals who report paying more attention to alternative partners also report engaging in more online infidelity-related behaviours. Taken together, these results are consistent with our proposal that relationships between online dating success and online infidelity are facilitated by high relative mate value (i.e., high mate value discrepancy) (H4) and the perception that alternative partners (H5) are readily available in the mating pool.

Contrary to predictions, no direct association was found between online dating success and online infidelity, which is inconsistent with previous literature (e.g., Alexopoulos et al., 2020; Weiser et al., 2018). Although, it is worth noting that these previous studies have demonstrated relationships between online dating success and infidelity intentions, rather than infidelity behaviours, and this may account for the difference in findings. For example, Weiser and colleagues (2018) find that individuals with a specific kind of online dating success - successfully attracting an extra-pair affair partner - are also more likely to consider a range of infidelity behaviours in the future (e.g., flirting, sex, falling in love). Alexopoulos and colleagues (2020) find that individuals with more online dating success share that they would be more likely to consider infidelity or deception in a variety of hypothetical contexts (e.g., if they wouldn't get caught, if they just met someone attractive, in future relationships). It is possible that online dating success is a stronger direct predictor of willingness to consider infidelity in future and/or hypothetical contexts as opposed to actual deceptive behaviours taking place in their current relationships (e.g., "Sometimes, instead of going to my spouse/partner, I share deep emotional or intimate information with others online"; McDaniel et al., 2017). Infidelity can be difficult to define, and relationship partners may even disagree with one another about what constitutes "cheating" (Moller & Vossler, 2015). Online infidelity may be even more challenging to define, as research suggests that in couples where online infidelity is present, it is common for the perpetrator to not see their behaviour as "real" infidelity (Vossler & Moller, 2020). Indeed, multiple studies have found that people less consistently classify online behaviours as "cheating", particularly compared to in-person sexual and explicit contact (Thompson & O'Sullivan, 2016; Parker & Wampler, 2003). As such, online infidelity behaviours may not be as consistently preceded and predicted by intentions to engage in infidelity, compared to other (particularly in-person) forms of extra-pair affairs.

Additionally, it might be the case that success on online dating alone may not directly lead to infidelity in long-term relationships, particularly if users are primarily interested in using online dating applications to find a long-term partner. Indeed, recent research has found that individuals who devote more time and effort into online dating are more likely to commit to an online dating partner (Sharabi & Timmermans, 2021). Despite the lack of a direct association between these variables, a mediated association is still possible if the indirect effects are significant (Hayes, 2013). Indeed, we found that online dating success on online infidelity-related behaviours are linked through several indirect paths. Consistent with our hypotheses, we found an indirect effect of online dating success on online infidelity-related behaviours through two different serial paths.

Firstly, online dating success is related to online infidelity behaviours through increased perception of alternative partner availability and increased attention to alternative mating opportunities. Confirming our predictions, the present findings demonstrate that being successful at online dating (i.e., having more attention from other online daters and accomplishing online dating goals), and therefore, being exposed to a large pool of potential mates, makes individuals more likely to perceive that there are more available alternative partners to their current one. According to the investment model, as the quality of alternatives to a current relationship increases, commitment in the relationship decreases (Rusbult, 1980). Previous research has found that sociosexuality (i.e., willingness to engage in uncommitted sex) tends to be higher in regions where alternative partners are abundant and accessible (Schmitt, 2005). Indeed, we found that if people perceive an abundance of attractive alternative partners, they are also more likely to attend to these alternatives. Consistent with economic models of scarcity and decision-making, these findings confirm previous literature showing that the more options online daters have, less satisfied they are with the partner they select, and

the more likely they are to look for further mating opportunities (Wu & Chiou, 2009; D'Angelo & Toma, 2017), and engage in infidelity, including online infidelity.

Secondly, online dating success is related to higher engagement in online infidelity through increased perceived mate value discrepancy and increased attention to alternative mating opportunities. Specifically, individuals that have been exposed to an online dating environment and have perceived their experience to be successful tend to perceive higher mate value relative to their partners. Consistent with the sociometer theory, mate value is directly dependent on one's acceptance by alternative mates (Kirkpatrick & Ellis, 2006), and this may explain why individuals that received more attention from other online daters tend to experience increased relative self-perceived mate value. Consequently, as pointed out by previous literature (e.g., Arnocky et al., 2021), individuals who perceive themselves to be more attractive, particularly in relation to their partner, are not only more likely to attend to and pursue alternative mating opportunities, but also feel more confident to do so.

Surprisingly, contrary to our hypotheses, we found a negative direct association between online dating success and attention to alternatives (H1d). Previous evidence has found an association between past online dating intensity and commitment to a current relationship, particularly if individuals were using dating applications to find a long-term partner (Timmermans et al., 2022). Such findings suggest that, depending on the motivations for using online dating applications and use intensity, online dating success may lead individuals to become more committed to their relationship and not attend to alternatives. Additionally, the direct association between perceived availability of alternative partners and online infidelity was negative in our mediation model, whereas no association was found with mate value, contradicting our predictions (H3b and H3a respectively). Further examination of the model demonstrated that the indirect path from online dating success and online infidelity through perceived availability of alternative partners was only significant among women, but not men.

This may explain the unexpected negative association between perceived availability of alternative partners and online infidelity. Previous research has found that online daters report cognitive overload and high levels of stress as they search through multiple users' profiles (Spielmann & MacDonald, 2016), which may explain why women who are successful at online dating and perceive a higher number of alternative partners may feel less motivated to engage in infidelity. Thus, engagement in infidelity does not only depend on mate availability or mate value discrepancy alone. Instead, attending to alternatives and engaging on infidelity depend on integrated information on own mate value, partner's mate value, and the available mates in the environment (Buss et al., 2017). Thus, any model that aims to understand online infidelity must consider the associations between these variables.

This study is not without limitations. One limitation is the non-probability and convenience nature (i.e., non-random internet recruitment so participants are self-selected) of the sample, which can limit the generalisability of our findings. A second limitation is that we measured perceived online dating success, which may not correspond to reality. However, individuals' perception of online dating success may be more relevant for the variables measured in this study than actual online dating success. Importantly, the scale used to measure online dating success did not obtain scalar invariance across genders, which affects latent mean comparisons between men and women. Therefore, the results obtained in this study should be taken with caution in relation to gender. We also observed that some of the paths tested in the model were only significant among women and did not follow the direction of our hypothesis. These patterns may be different among men. However, because our male sample was relatively small ($N = 96$), future studies examining how gender may influence the proposed model using alternative online dating success measures are necessary to clarify the role of gender. Importantly, we did not find any direct associations between online dating success and online infidelity, which, in addition to the reasons we discussed previously, could be partly due to the

short measure used to assess online dating success. Thus, future studies would benefit from scales that consider further components of online dating success (e.g., objective measures of number of matches, number of offline dates). Importantly, future studies could also consider factors such as motivations for using dating applications and individual differences, as previous studies have found that personality traits influence the way individuals use dating applications (Freyth & Batinic, 2021), which, in turn, may influence to how they conceptualise online dating success. Additionally, some individuals were past users of online dating applications, which means that they were required to reflect on their past online dating success and this approach carries some bias (e.g., participants may not accurately recall their dating experience). Also, the data collection took place just after the restrictions associated with the COVID-19 were relaxed in the UK and this may have influenced some of the observed findings. Thus, it is important to point out that future studies may find different patterns of associations between the variables examined in the present study. Furthermore, this study applied a correlational design to test the mechanisms involved in online dating and relationship outcomes, which limits the conclusions that can be drawn from the present findings. Future studies following participants over time (e.g., from online dating to the initiation of a relationship) may be able to confirm whether the associations unveiled in the present study follow the temporal order proposed here. Future longitudinal studies would also be able to unveil the influences of the restrictions associated with the pandemic on the associations between the variables examined in the present study.

Despite the limitations discussed above, our findings offer important insights on the implications of online dating applications for relationships. Our findings suggest that at least in our sample, the link between online dating success and engagement in online infidelity is indirect through mate value discrepancy, perceived number of available partners, and attention to alternatives. Specifically, daters who are more successful at online dating see themselves as

more desirable than their current partner, and also endorse the idea that there is a large pool of potential, high-quality partners available tend to pay attention to those alternative partners and are, in turn, most likely to engage in online infidelity.

Compliance with Ethical Standards

Conflict of Interest Statement. The authors have no competing interests to declare that are relevant to the content of this article.

Ethical Approval Statement. Approval was obtained from the ethics committee of a University in the United Kingdom (Reference number: 30814-A-Jul/2021-33312-1). The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

Informed Consent Statement. Informed consent was obtained from all individual participants included in the study.

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Table 1

Correlations between the variables in the hypothesised model

| | | | | | Gender | | Use of dating applications whilst in a relationship | | Current use of dating applications | |
|---------|-------|-------|-------|-------|--------------|--------------|--|--------------|------------------------------------|---------------------|
| | 1 | 2 | 3 | 4 | M (N = 96) | W (N = 240) | YES (N = 51) | NO (N = 282) | Current user (N = 20) | Past user (N = 312) |
| 1. PODS | | | | | 2.83 (0.75) | 3.36 (0.58) | 3.25 (0.77) | 3.21 (0.66) | 3.11 (0.64) | 3.22 (0.68) |
| 2. MVD | .16** | | | | -4.89 (4.24) | -4.08 (4.87) | -0.77 (1.04) | -1.13 (1.19) | -0.26 (1.22) | -1.13 (1.15) |
| 3. PAAP | .26** | .38** | | | 3.55 (0.84) | 3.43 (0.83) | 3.65 (0.61) | 3.43 (0.87) | 3.96 (0.55) | 3.43 (0.84) |
| 4. ATAL | -.09* | .35** | .36** | | 2.38 (0.69) | 1.97 (0.49) | 2.50 (0.65) | 2.01 (0.54) | 2.65 (0.51) | 2.05 (0.57) |
| 5. OIRB | -.01 | .16** | .07 | .53** | 1.88 (1.02) | 1.70 (0.75) | 2.20 (1.08) | 1.67 (0.76) | 2.17 (0.85) | 1.73 (0.83) |

Notes. PODS = perceived online dating success, MVD = mate value discrepancy, PAAP = perceived availability of alternative partners, ATAL = attention to alternatives, OIRB = online infidelity-related behaviours, M = Man, W = Woman. ** $p < .001$, * $p < .05$.

Table 2

Direct and indirect effects for the model

| | | 95% confidence interval | |
|---|--------|-------------------------|-------|
| | | Lower | Upper |
| <i>Direct effect</i> | | | |
| Perceived Online dating success-Online infidelity | .070 | -.077 | .222 |
| <i>Indirect effects via</i> | | | |
| Mate value disparity | -.001 | -.014 | .013 |
| Perceived availability of alternative partners | -.050* | -.094 | -.012 |
| Attention to alternatives | -.070* | -.133 | -.002 |
| Perceived availability of alternative partners -Attention to alternatives | .020* | .003 | .041 |
| Mate value disparity - Attention to alternatives | .050* | .023 | .073 |

Note. * Significant effects

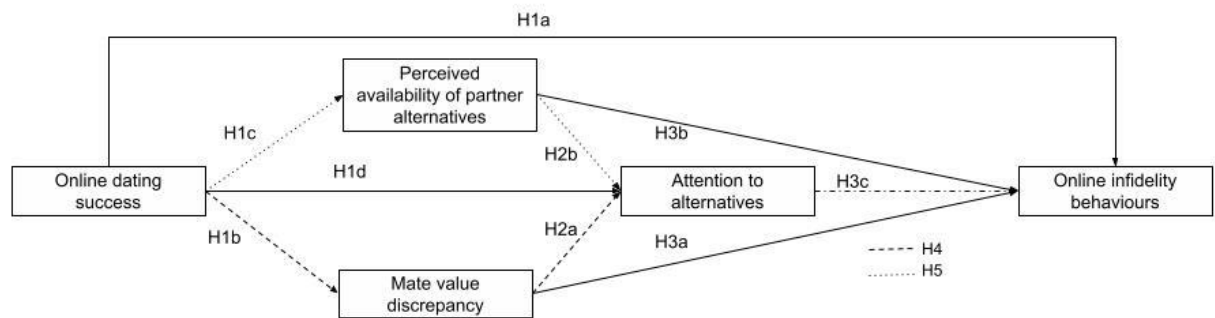


Figure 1. *Hypothesised model*

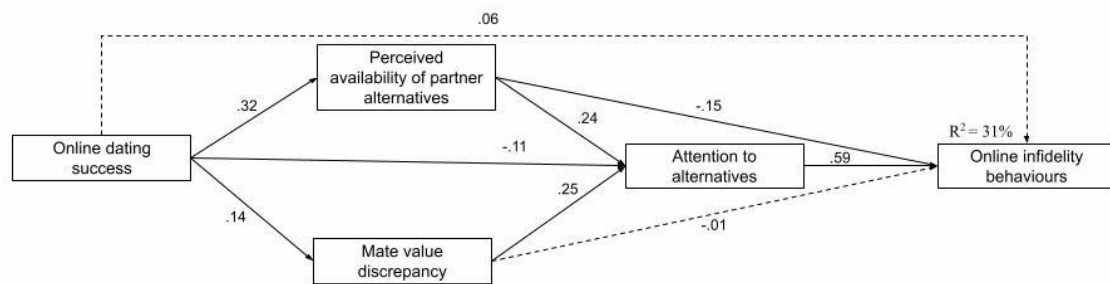


Figure 2. Results of the serial-mediation analysis

Table 3

Direct and indirect effects for the moderated serial mediation model

| | | 95% confidence interval | |
|--|-------|-------------------------|-------|
| | | Lower | Upper |
| <i>Direct effects</i> | | | |
| Perceived Online dating success-Online infidelity | | | |
| Man | .050 | -.200 | .305 |
| Woman | .080 | -.095 | .266 |
| <i>Indirect effects via</i> | | | |
| Mate value disparity | | | |
| Man | -.020 | -.062 | .011 |
| Woman | -.003 | -.011 | .019 |
| Index of moderated mediation | .031 | -.008 | .067 |
| Perceived availability of alternative partners | | | |
| Man | -.020 | -.099 | .051 |
| Woman | -.060 | -.108 | -.018 |
| Index of moderated mediation | -.034 | -.118 | .035 |
| Attention to alternatives | | | |
| Man | -.150 | -.267 | -.072 |
| Woman | -.140 | -.217 | -.068 |
| Index of moderated mediation | .015 | -.050 | .091 |
| Mate value disparity -Attention to alternatives | | | |
| Man | .030 | .007 | .054 |
| Woman | .020 | .007 | .048 |
| Index of moderated mediation | -.003 | -.016 | .008 |
| Perceived availability of alternative partners - Attention to alternatives | | | |
| Man | .050 | .018 | .085 |
| Woman | .040 | .017 | .071 |
| Index of moderated mediation | -.006 | -.028 | .012 |

