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Vranken, I.; Sumter, S.; Vandenbosch, L.

DOI
10.1007/s10508-024-02891-9

Publication date
2024

Document Version
Final published version

Published in
Archives of Sexual Behavior

Archives of Sexual Behavior (2024) 53:2547–2582
https://doi.org/10.1007/s10508-024-02891-9

ORIGINAL PAPER

A Multi-Method Study Examining the Role of Swiping on Dating Apps: Mate Value Preferences, Sexual Satisfaction, and Need Satisfaction with Matches in Emerging Adults

Ilse Vranken[1,2] · **Sindy Sumter**[3] · **Laura Vandenbosch**[1]

Received: 24 February 2023 / Revised: 2 May 2024 / Accepted: 3 May 2024 / Published online: 5 June 2024

Abstract
Intrinsic (i.e., personality traits) and extrinsic mate value (i.e., resources, physical attractiveness) preferences play a crucial role in (online) relationship formation. The role of mate values in dating applications was unclear and was addressed in a multi-method study. A first content analytical study examined the prevalence of mate values (MVs) on Tinder profiles (Study 1) and two subsequent cross-sectional studies explored the relationships between dating app use, various swiping behaviors, sexual satisfaction (Studies 2–3), need satisfaction with matches (Study 3), having a committed relationship versus casual sex motivation for using dating apps and users' gender. The content analysis of 307 Tinder profiles indicated that resources and physical attractiveness were most salient in biographies and pictures, respectively. The first cross-sectional study ($n_{fullsample} = 325$, $n_{dating\ app\ users} = 133$) revealed no significant relationships between dating app frequency/swiping frequency, intrinsic and extrinsic MV preferences, and sexual satisfaction. The second cross-sectional study ($n = 323$) showed no significant relationships between picture-based or biography-based swiping, intrinsic and extrinsic MV preferences, and need satisfaction with matches. Gender differences emerged in the presentation of MVs on Tinder (Study 1) and general MV preferences (Study 2–3), but not in the relationships between different types of dating app use/swiping and MV preferences (Study 2–3). A committed relationship and a casual sex motivation played a role in the relationships between different types of swiping behaviors and MV preferences, and between MV preferences, and sexual satisfaction/need satisfaction with matches.

Keywords Dating apps · Mate values · Gender differences · Self-presentation

Introduction

Dating apps are used for various reasons, including, to find a romantic or casual sex partner, to improve one's self-worth, or for mere entertainment (Kallis, 2020; Sumter et al., 2017). While some of these motivations, such as seeking entertainment, also motivate other forms of media use (e.g., social media use; Rodgers et al., 2021), the motivation to find a romantic or casual sex partner is uniquely associated with the use of dating apps (Sumter et al., 2017). The search for a partner via dating apps is known to differ from this search in an offline setting (Arias & Punyanunt-Carter, 2018).

Dating app users can connect with a potential partner through a mutual partner selection process in which both users must "like" each other before a match occurs (Ward, 2017). Long-term mates (i.e., long-term romantic partners) and short-term mates (i.e., short-term casual sex partners) are selected based on their "mate value" (MV) which can be defined as 'the total sum of characteristics an individual possesses at a given moment and within a particular context that impacts on their ability to successfully find, attract and retain a mate" (Fisher et al., 2008, p.157). MVs are two-dimensional concepts in which intrinsic and extrinsic qualities can be distinguished (Buss, 2023; Sheldon, 2007). Whereas intrinsic MVs can be described as qualities that are beneficial for building an emotional connection (e.g., personality traits), extrinsic MVs can be described

✉ Ilse Vranken
ilse.vranken@kuleuven.be

[1] School for Mass Communication Research, Faculty of Social Sciences, KU Leuven, Parkstraat 45, B-3000 Leuven, Belgium

[2] Research Foundation Flanders (FWO-Vlaanderen), Brussels, Belgium

[3] Amsterdam School of Communication Research, Faculty of Social and Behavioural Sciences, University of Amsterdam, Amsterdam, The Netherlands

as instrumental qualities that a partner may possess (e.g., resources, physical attractiveness) (Buss, 2023; Rodriguez et al., 2015).

Dating apps provide unique features to showcase one's MVs to potential romantic or sexual partners. Users can use textual (i.e., biography) and visual (i.e., pictures) features to display MVs to potential matches (Degen & Kleeberg-Niepage, 2021; Ingram et al., 2019). Yet, content analytical research on which MVs are most frequently displayed in dating app profiles is scarce. Therefore, a content analysis on emerging adults' Tinder profiles ($n = 307$) will examine users' presentation of MVs with attention to potential gender differences (Study 1). Insights in which MVs are displayed by users can inform the theorizing of the role that dating apps play in the search dynamics of a partner. These search dynamics for a potential partner on dating apps may impact the type of relationships that individuals build and can differ in how meaningful they are considered to be (Yeo & Fung, 2018).

More precisely, sexual script theory (Simon & Gagnon, 1984, 1987), would suggest that media can be used to observe how individuals sexually interact with each other, which may help individuals develop sexuality-related attitudes, such as their "MV preferences" (i.e., the extent to which individuals attach importance to different MVs in a potential partner). If particular MVs are emphasized in dating app profiles, users may find them more normative to select a partner and adapt their MV preferences accordingly. These adapted MV preferences may, in turn, relate to users' sexual satisfaction. To assess this theoretical argument, a cross-sectional study (i.e., Study 2) was designed to assess how dating app use, specifically swiping frequency, is associated with MV preferences, and sexual satisfaction.

Although Study 2 was able to provide insight into the relationships between dating app use (and swiping frequency in particular) and MV preferences, this first cross-sectional study did not account for the content that users were exposed to. Due to algorithms and users' attention processes, intrinsic and extrinsic MVs may be noticed to a different extent during swiping. Therefore, a second cross-sectional study (i.e., Study 3) examined how exposure to different MVs during swiping, operationalized as biography- and picture-based swiping behaviors was associated with dating app users' MV preferences and sexual satisfaction.

In all studies, attention was given to potential gender differences as men and women have different MV preferences when choosing a partner offline (Buss, 2023; Kostic & Scofield, 2022) and on dating apps (Abramova et al., 2016; Desrochers et al., 2021; Roshchupkina et al., 2023). Studies 2 and 3 also considered differences in a committed relationship versus casual sex motivation for using dating apps as MV preferences differ for long-term versus short-term partners (Jonason et al., 2013; Li, 2007).

Study 1: Content Analysis on the Presentation of Mate Values on Dating Apps

Partner Selection in Emerging Adulthood Through Mate Values

Romantic and sexual relationship formation is a pivotal task during emerging adulthood (Arnett, 2000). During this period, individuals explore their (sexual) identity and invest in committed or casual relationships (Mayseless & Keren, 2014). People also explore which characteristics they find most important in romantic or sexual partners (Arnett, 2000).

Such characteristics are called MVs and refer to an individual's background (e.g., ethnicity), prospects (e.g., wanting children), personality traits, financial success or resources (e.g., wealth, intellectual ability to provide resources for a family), and physical attractiveness (Buss, 2023). Some MVs are more influential than others as certain types of intrinsic- (i.e., personality traits) and extrinsic MVs (i.e., resources, physical attractiveness) are known to be fundamental in the selection process of a partner (Buss, 2023; Buss et al., 2001). Two differences exist in individuals' MV preferences and relate to an individual's gender and the type of relationship an individual is seeking (Buss, 2023; Jonason et al., 2013).

With regard to gender, men and women have different MV preferences (Buss, 2023; Schwarz & Hassebrauck, 2012). Typically, women attach more importance to personality traits and resources, while men particularly attach importance to physical attractiveness (Neyt et al., 2022; Schwarz & Hassebrauck, 2012).

Concerning a relationship focus, individuals seeking a long-term partner typically attach importance to the intrinsic MV of personality traits and the extrinsic MVs of resources and physical attractiveness (Jonason et al., 2013). When searching for short-term casual sex partners, physical attractiveness gains importance, and resources become less important (Jonason et al., 2013; Li, 2007). Similar to individuals who are looking for a committed relationship, those in search of a casual sex partner still attach importance to personality traits (Jonason et al., 2013).

The roles of nature and nurture in MV preferences of men and women searching for different types of relationships have been at the core of scholarly debates (Buss, 2023; Fisher et al., 2008). According to the perspective informed by evolutionary theory, sexual selection manifests itself through MVs that signal a partner's reproductive success (Buss, 2023). To safeguard sexual reproduction, women are expected to attach importance to extrinsic MVs that ensure a family has resources, whereas men attach importance to the extrinsic MV of physical attractiveness as they signal a woman's fertility (Buss, 2023).

This evolutionary perspective has been called incomplete, and even questionable as, many individuals, for instance, do not (primarily) seek a partner for reproductive reasons or do not seek long-term partners (Buss, 2023; Fisher et al., 2008). Current evolutionary perspectives have accordingly also been moving beyond the norms of heterosexuality and argue that other sexuality norms are also worth considering in individuals' mating behaviors (Kostic & Scofield, 2022; Thorne et al., 2019). Moreover, evolutionary theorists argue that not only nurture plays a role in MV preferences but also one's social context (Al-Shawaf et al., 2021) including socialization actors, such as parents (Lin et al., 2022). Research recently pointed to dating apps (Schreurs et al., 2020; Yeo & Fung, 2018) as socialization actors. Such apps may suggest which MVs are important by highlighting specific MVs. Yet, empirical evidence regarding the role of dating apps as a socialization actor in individuals' MV preferences and positive outcomes (e.g., sexual satisfaction) is scarce (Konings et al., 2022).

Textual and Visual Self-Presentation Features on Dating Apps

Dating apps facilitate the romantic partner or casual sex partner selection process by providing easy access to a pool of potential suitors. This partner selection process via dating apps differs from offline dating because dating apps have unique affordances with regard to communication and self-presentation (Finkel et al., 2012). Dating apps are characterized by asynchronous and editable communication which entails that users can carefully craft an idealized image of themselves and strategically choose which MVs they want to highlight on their dating app profiles (Labor, 2020; Ward, 2017). In their profiles, users can present themselves textually by sharing socio-demographic information and a biography text as well as visually by uploading one or more pictures (LeFebre, 2018; MacLeod & McArthur, 2019).

Although textual and visual self-presentation features are available to all dating app users, it is unclear how these features are used. The cross-sectional study of LeFebre (2018) suggested that circa 25% of Tinder users reported not providing a biography. One reason for not writing a biography may be that dating apps are labeled as picture-based apps meaning users select partners based on their physical attractiveness (Yeo & Fung, 2018) and, hence, might not feel the need to provide non-visual information. Because content analytical research is lacking, it remains unclear how extensive the usage of textual and visual features is among dating app users. Therefore, we posed the following research question (RQ):

RQ1 To what extent are the textual (i.e., use of biography, number of words in biography) and the visual self-presentation features (i.e., number of pictures) on Tinder profiles used by emerging adults?

There is not only limited content analytical research available on the general characteristics of textual and visual self-presentation but also with regards to their content. This gap is important to address as dating apps have been criticized for being "meat-inspection machines" (Yeo & Fung, 2018). To date, it remains unclear whether this criticism is justified because research on the use of textual versus visual features concerning intrinsic versus extrinsic MVs is scarce. It seems plausible that the textual features are mainly used to present personality traits or resources whereas visual features are used to show physical attractiveness. Content analyses indeed indicated that personality traits and resources were mentioned in users' biographies (Cantos-Delgado & Maíz-Arévalo, 2023; Solovyeva & Logunova, 2018; Wada et al., 2017). Users described attractive personality traits by, for instance, stating their love for jokes (signalizing a humoristic personality) (Cantos-Delgado & Maíz-Arévalo, 2023; Wada et al., 2017). In a similar vein, Tinder users mentioned resource-related information such as professional status (Solovyeva & Logunova, 2018). Concerning the visual features, qualitative research indicated that physical attractiveness was pivotal as users indicated uploading their most attractive pictures (Labor, 2020; Ward, 2017).

Moreover, past content analyses (Wada et al., 2017) have largely ignored that users who complete a biography may also use this to share extrinsic MVs (i.e., physical attractiveness) by, for instance, describing physical attributes that are less visible in a picture. In a similar vein, users who upload pictures may use this content to emphasize intrinsic MVs (i.e., personality traits) or the extrinsic MV of resources. Some studies have hinted at such use of textual versus visual features in dating apps (Degen & Kleeberg-Niepage, 2021; Ingram et al., 2019; Solovyeva & Logunova, 2018). For instance, Solovyeva and Logunova (2018) showed that biographies sporadically mentioned the attractiveness of physical traits. Dating app users have further been noticed to upload pictures that signal particular personality traits or personal interests, such as pictures with friends (signalizing a social personality; Degen & Kleeberg-Niepage, 2021; Ingram et al., 2019; Solovyeva & Logunova, 2018). Similarly, resources were suggested to be communicated by, for instance, showing off a fancy dinner in a yacht club in pictures posted (Degen & Kleeberg-Niepage, 2021; Ward, 2017). Although the studies above have provided preliminary insights into the use of textual and visual features to present different MVs, a systematic quantitative assessment is lacking.

RQ2 To what extent do the textual and the visual self-presentation features on Tinder refer to intrinsic (i.e., personality traits) and extrinsic (i.e., resources, physical attractiveness) MVs?

Gender-Specific Self-Presentation on Dating Apps

Men and women differ in their MV preferences when searching for a potential romantic or sexual partner (Desrochers et al., 2021; Fisman et al., 2006; Furnham, 2009). In addition, preliminary evidence suggests that men and women present themselves on dating apps in line with MVs valued by the opposite gender in the context of heterosexual relationships (Solovyeva & Logunova, 2018). Therefore, (1) the general use of textual versus visual features and (2) the extent to which intrinsic- versus extrinsic MVs are presented in users' profiles may differ according to gender (Fink et al., 2023; Jonason & Thomas, 2022).

As textual features invite users to present personality- and resource-related information, which are MVs that women are known to value in a long- or short-term male partner, men may write more extensive biographies than women (Solovyeva & Logunova, 2018). This expectation has some support (Ingram et al., 2019; Solovyeva & Logunova, 2018). Research has shown that for men, writing a more extensive biography to showcase MVs that appeal to women is a successful digital mating strategy. Specifically, the inclusion of text on dating profiles increased the attention of women who viewed male owners of these profiles as more attractive suitors (Fink et al., 2023). It remains unclear whether men use visual features more extensively to emphasize personality- and resource-related information.

Relatedly, as visual features invite users to highlight their physical attractiveness, women may focus more on signaling their beauty in pictures than men as men tend to attach greater importance to this MV in a long- or short-term partner (Desrochers et al., 2021). In the context of online dating, men are shown to attach greater importance to physical attractiveness than women. For example, men would be more upset than women if their dating app match had been deceitful about their physical attractiveness (Desrochers et al., 2021). Thus, to attract the attention of a potential male partner, women may (1) upload more pictures or (2) choose more sexualized pictures in which users draw attention to their sexy appearance (Degen & Kleeberg-Niepage, 2021; Hall et al., 2012).

Research is mixed concerning the number of pictures uploaded on dating apps. Some studies revealed that women uploaded more pictures than men (Casimiro, 2014), while other studies showed the opposite (Solovyeva & Logunova, 2018) or found no gender differences (Ingram et al., 2019). With respect to sexualized pictures, content analytical research found that women played out physical attractiveness more extensively (Casimiro, 2014; Solovyeva & Logunova, 2018). To date, no content analyses have investigated how visual or textual features are differently used by men versus women to self-present intrinsic MVs. To further our insights into the abovementioned gender differences, the following RQs were posed:

RQ3 Do gender differences exist in the use of textual (i.e., biography use, biography word length) and visual (i.e., the number of pictures) self-presentation features on Tinder profiles?

RQ4 Do gender differences exist in the presentation of intrinsic MVs and extrinsic MVs in the textual and visual self-presentation features on Tinder profiles?

Method

Participants and Procedure

Tinder is the most popular dating app among emerging adults (Vogels & McClain, 2023). Research profiles with all study-related information were created to collect profiles of 18–30 year-olds ($M = 21.62$ years, $SD = 2.09$) in April 2019. Research assistants swiped every profile they encountered. Active consent was provided when the profile owner liked the research profile by swiping right. Of the 324 recruited Tinder profiles, 307 were part of the analytical sample (i.e., profiles were deleted if people were not from Belgium). The sample size was based on prior content analyses (Ingram et al., 2019; Solovyeva & Logunova, 2018). The sample consisted of 64.5% ($n = 198$) men, 35.5% ($n = 109$) women, and 0% individuals who identified as another gender.

Measure

Coding Procedure and Reliability

The authors developed a codebook based on impression formation literature about how individuals with attractive personality traits, wealth, intelligence, or physical attractiveness are perceived by others (Ingram et al., 2019; Wada et al., 2017). The first author pretested the codebook on several profiles to ensure the codes were exhaustive and exclusive. Next, 307 Tinder profiles were coded on a textual level (i.e., users' biography) and visual level (i.e., only the first two pictures of participants' profiles were coded for feasibility reasons) using a two-step method. In Step 1, participants' general textual and visual characteristics were investigated. In Step 2, the prevalence of intrinsic versus extrinsic MVs in users was examined. MVs were separately coded for the first and second pictures.

To calculate inter-rater reliability, 30 profiles (10.27% of the sample) were coded by the first author and two trained research assistants. All coders were provided with detailed information and examples of each code in the codebook. Krippendorf's alpha was calculated and indicated sufficient

reliability. The full codebook can be found on OSF (https://osf.io/dsqbw/).

Codebook

Textual Measures

Demographic Characteristics Based on users' profile information and textual cues in their biography on Tinder, gender was coded (0 = man, 1 = woman, 2 = other gender, α = 1.00).

Biographic Characteristics The presence of a biography (0 = absent, 1 = present, α = 1.00) and the number of words used in a biography were coded (α = 0.99; Solovyeva & Logunova, 2018).

Prevalence of Intrinsic and Extrinsic Mate Values Prevalence of personality traits (α = 0.73), resources (α = 0.79), and physical attractiveness (α = 0.96) was coded (0 = absent, 1 = present). A MV was present if one or multiple implicit and/or explicit cues that signal the MV were presented (see Table 1). Explicit cues refer to explicitly mentioning a MV and implicit cues refer to emoticons or other techniques that signal the presence of a MV (Aubrey & Frisby, 2011; Devos, 2022; Solovyeva & Logunova, 2018; Wada et al., 2017).

Visual Measures

Visual Characteristics The total number of pictures on a profile was coded (α = 0.69; Solovyeva & Logunova, 2018).

Prevalence of Intrinsic and Extrinsic Mate Values Presentation of personality traits (α = 0.82), resources (α = 0.85), and physical attractiveness (α = 0.77) was coded for each included picture (0 = absent, 1 = present). A MV was present if one or multiple implicit or explicit cues referring to the MVs were presented (Aubrey & Frisby, 2011; Ha et al., 2010; Hatton & Trautner, 2011; Tiggemann & Zaccardo, 2018; Wada et al., 2017; see Table 1).

Analytical Strategy

Data were analyzed in R. Descriptive statistics examined the general use of the textual features versus visual features (RQ1) and the prevalence of different MVs (RQ2). Chi-square tests and independent *t*-tests examined gender

Table 1 Implicit and explicit cues of mate values on Tinder profiles

Users textual self-presentation in biography	
Personality traits	Implicitly or explicitly mentioning one or multiple personality traits: i.e., cozy, sweet (e.g., I am a sweet guy), adventurous(e.g., always up for an adventure, love for traveling), humoristic (e.g., I love to make a joke, making a joke), social (e.g., I love to talk with people, love to spend time with friends, quote regarding the importance of friends), loyal (e.g., I would never cheat), romantic (e.g., good listener), emotional (e.g., I love to show my emotions) caring (e.g., stating their caring side towards animals or love for animals), calm (e.g., I love calmness and rest, laid-back, drama-free), special character (e.g., average lee with an interesting character) and understanding (e.g., I will always try to understand you)
Physical attractiveness	Explicitly (i.e., using words) or implicitly (i.e., using emoticons) mentioning attractive facial or body traits: eyes/eye color, nose, small chin, full lips, cheekbones, smile (e.g., I have a nice smile), smooth skin, skin tone, hair (e.g., I can make a manbun), total body length (e.g., 1m80), muscles, tattoos (e.g., inked), piercings, body shapes such as breasts, thighs (e.g., peach emoticon)
Resources	Implicit or explicit cues that create the impression of having (financial) resources or (being intelligent enough) to be able to provide (financial) resources in the future. Cues regarding one of the following types of information were coded i.e., educational degree, type of job, career drive (e.g., always strive to achieve something, quotes regarding the importance of working hard and being successful), being intelligent (e.g., I have a high IQ, mentioning intellectual stimulating activities such as reading)
Users' visual self-presentation through pictures	
Personality traits	One or multiple cues that create the impression of having nice personality traits, i.e., social (e.g., picture with friends, pictures at social event), caring or sweet (i.e., pictures with animals, pictures on animal themed location such as a cat café), humor (i.e., wearing funny outfit, funny pose, pulling a funny face), adventurous (i.e., doing an extreme sport, travelling)
Physical attractiveness	One or multiple cues that create the impression of being physically attractive, i.e., using filters (e.g., basic or advanced filters), wearing make-up, showing one's body shape, showing muscles, showing tattoos or piercings, wearing revealing clothes to show one's body
Resources	One or multiple cues that create the impression of being wealthy or being able to provide (financial) resources. This could refer to job-related or intelligence cues: i.e., showing job-related or high-brow activities (e.g., presenting something at a conference, going to a lecture), job-related location (e.g., at the office) or high-brow location (e.g., museum), job-related attributes (e.g., stethoscope), job-related clothes (e.g., white lab coat). Additional cues that reflect one's wealth: i.e., snob clothing style (e.g., brand clothing, expensive jewelry), expensive electronic devices or vehicles (i.e., expensive phone or car)

Table 2 Descriptive statistics and sex differences of self-presentation features on Tinder profiles of Study 1

	Total N (%)	Men N (%)	Women N (%)	χ^2 (d*f*)	*p*
Presence of a biography				.04 (1)	.84
Absent	115 (37.46)	75 (24.43)	40 (13.03)		
Present	192 (62.54)	123 (40.07)	69 (22.48)		
	Total M (SD)	Men M (SD)	Women M (SD)	*t* (d*f*)	
Number of words	15.90 (18.09)	16.95 (18.93)	14.01 (16.44)	1.08 (190)	.28
Number of pictures	4.79 (2.10)	4.71 (2.17)	4.94 (1.97)	− .91 (305)	.36

Table 3 Frequencies and gender differences in showing mate values in the textual feature of Tinder of Study 1

	Total N (%)	Men N (%)	Women N (%)	χ^2 (d*f*)	*p*
Prevalence of intrinsic MV: Personality traits				.01 (1)	.93
Absent	72 (37.50)	46 (24.08)	26 (13.61)		
Present	119 (61.98)	77 (40.31)	42 (22.00)		
Prevalence of extrinsic MV: Physical attractiveness				.23 (1)	.64
Absent	167 (86.97)	108 (56.25)	59 (30.73)		
Present	25 (13.02)	15 (7.81)	10 (5.21)		
Prevalence of extrinsic MV: Resources				.36 (1)	.55
Absent	41 (21.35)	25 (13.02)	16 (8.33)		
Present	151 (78.65)	98 (51.04)	53 (27.60)		

differences in the general use of textual versus visual features (RQ3). To answer RQ4, chi-square tests examined gender differences in the prevalence of showing different MVs in users' biographies. For users' pictures (RQ4), multiple pictures per participant were coded, which violated the assumption of independence of observations. Therefore, multilevel models (MLM) were conducted (lme4 package) to assess gender differences in the prevalence of showing intrinsic versus extrinsic MVs in users' pictures. The first two pictures of each profile functioned as independent observations that were clustered within a participant. Before analyzing the MLM, intra-class correlations (ICC) were examined. ICC ranged between 0.08 and 0.19 indicating the necessity of conducting MLM. All datasets and syntaxes can be found on OSF.

Results

The Use of Textual and Visual Self-Presentation Features (RQ1)

Table 2 provides the frequencies of the general use of the textual and visual self-presentation features on Tinder. More than half of the participants provided a biography (62.54%, $n = 192$) which included on average 15.90 words ($SD = 18.09$). Concerning the visual features, participants uploaded on average 4.79 pictures ($SD = 2.10$). The following distribution of the number of total pictures was found: one picture (3.91%, $n = 12$), two pictures (10.10%, $n = 31$), three pictures (13.03%, $n = 40$), four pictures (22.48%, $n = 69$), five pictures (18.57%, $n = 57$), six pictures (12.38%, $n = 38$), seven pictures (5.86%, $n = 18$), eight pictures (5.53%, $n = 17$), and nine pictures (8.14%, $n = 25$).

The Use of Textual and Visual Features for Mate Values (RQ2)

Regarding textual features, the extrinsic MV of resources (78.65%) and the intrinsic MV of personality traits (61.98%) were most frequently presented among users who wrote a biography. References to physical attractiveness (i.e., extrinsic MV) were less frequently presented (13.02%) (Table 3).

As for the visual features, most participants highlighted the extrinsic MV of physical attractiveness (77.52%) in their first picture. Fewer participants highlighted the intrinsic MV of personality traits (32.90%) and the extrinsic MV of resources (8.47%) in the first picture. The same pattern was found for users' second picture (Table 4).

Table 4 Frequencies and gender differences of showing mate values in the visual feature of Tinder of Study 1

	Total N (%)	Men N (%)	Women N (%)	B (SE)	β [95%CI]	*p*	Wald (d*f*)
Prevalence of intrinsic MV: Personality traits				− .24 (.19)	− 0.11 [− .29, .06]	.21	1.57 (1)
Absent (picture 1)	206 (67.10)	132 (43.00)	74 (24.10)				
Present (picture 1)	101 (32.90)	66 (21.50)	36 (11.40)				
Absent (picture 2)	190 (61.89)	115 (39.52)	74 (25.43)				
Present (picture 2)	102 (33.22)	72 (24.74)	30 (10.31)				
Prevalence of extrinsic MV: Physical attractiveness				1.68 (.29)	0.81 [.53, 1.08]	<.001	33.35 (1)
Absent (picture 1)	69 (22.48)	60 (19.54)	9 (2.93)				
Present (picture 1)	238 (77.52)	138 (44.95)	100 (32.57)				
Absent (picture 2)	64 (20.84)	57 (19.59)	7 (2.41)				
Present (picture 2)	228 (74.27)	130 (44.67)	97 (33.33)				
Prevalence of extrinsic MV: Resources				− 1.07 (.35)	− 0.51 [− .84, − .19]	<.001	9.54 (1)
Absent (picture 1)	281 (91.53)	174 (56.68)	107 (34.85)				
Present (picture 1)	26 (8.47)	24 (7.82)	2 (.65)				
Absent (picture 2)	248 (80.78)	248 (84.93)	0 (0)				
Present (picture 2)	44 (14.33)	0 (0)	44 (15.07)				

Gender Differences in the Use of Textual and Visual Features (RQ3)

No significant gender differences emerged in the presence of a biography, the number of words used in a biography, or the number of pictures men and women uploaded on their Tinder profiles (Table 2).

Gender Differences of Textual and Visual Features for Mate Values (RQ4)

No significant gender differences occurred in the prevalence of presenting personality traits, physical attractiveness, or resources in a biography (Table 3). For the visual features, binary logistic MLM indicated two significant gender differences (Table 4). Women were significantly more likely to present the extrinsic MV of physical attractiveness in their pictures, $OR = 5.37$, 95% CI [3.04, 9.50], but were significantly less likely to present the extrinsic MV of resources in their pictures compared to men, $OR = 0.34$, 95% CI [0.17, 0.68]. Men were 2.92 times more likely than women to present the extrinsic MV of resources in their pictures, 95% CI [1.48, 5.77]. No significant gender differences emerged for personality traits.

Discussion

Several conclusions can be derived from our results. First, the visual features were more extensively used compared to the textual features. Whereas almost all participants (96.09%) uploaded more than one picture, approximately 40% did not write a biography. The guidelines of dating apps may explain this finding because users are required to upload at least one picture, but not necessarily a biography.

Additionally, our results help to contextualize the criticism of dating apps being "meat-inspection machines" (Yeo & Fung, 2018). Most users (77.52% in the first picture, and 74.27% in the second picture) established their physical attractiveness through the visual features on their Tinder profile. Resources (8.47% in the first picture, 14.33% in the second picture) and personality traits (32.90% in the first picture, 33.22% in the second picture) were also presented, but less frequently. This indicates that dating apps' visual features are indeed mainly used to highlight one's appearance above other MVs (e.g., personality traits).

Furthermore, some scholars optimistically expected the textual features to be the primary channels to present one's personality traits (van Berlo & Ranzini, 2018; Wada et al., 2017). Our findings partially confirm this optimism. Users who used the textual features described their personality (61.89%). Resources, however, were more frequently highlighted by users in their biographies (78.65%). The latter number is higher than the number reported in the sole study that also examined resources in the textual features (Solovyeva & Logunova, 2018). This finding may be explained by our sample, which also included college students who communicated about their anticipated professional status. By only focusing on workplace and job (Solovyeva & Logunova, 2018) as cues for resources, earlier research may have missed an important part of some emerging adults lived experiences; resources-related information is different for students compared to working adults (Griffin et al., 2018).

Lastly, gender differences did not manifest themselves in the general use of textual and visual features, but rather in how users presented themselves concerning physical attractiveness and resources. Women were more likely to highlight physical attractiveness, while men focused more often on resources in their pictures. These findings align with how men and women would be expected to present themselves to find a long- or short-term partner in heterosexual relationships (Abramova et al., 2016; Desrochers et al., 2021).

Study 2: The Role of Dating App Use in Mate Value Preferences and Sexual Satisfaction

Study 1 provided insights into users' self-presentation of MVs on Tinder. Dating app users do not only present themselves as a desirable romantic or sexual partner to others (see Study 1), but they also select a potential partner. For this latter part of the process, they use the information presented to them. The amount of potential partners, the selection process, and the type of information that informs this selection process of all presented potential matches differs from offline dating. Specifically, dating app users are exposed to an overload of potential partners (Arias & Punyanunt-Carter, 2018), and can select them by swiping them (LeFebre, 2018; Ward, 2017). As non-verbal cues are absent in dating apps, users need to make this selection based on cues that potential partners—i.e. other dating app users—choose to share in the textual and/or visual features, including cues about MVs (Ward, 2017).

During this partner selection process, individuals are exposed to other users' MV preferences and may consequently learn about the importance of different MVs when trying to attract a partner. Sexual script theory (Simon & Gagnon, 1984, 1987) may explain this socialization process. Sexual scripts "are involved in learning the meaning of internal states, organizing the sequencing of specifically sexual acts, decoding novel situations, setting the limits on sexual responses and linking meanings from nonsexual aspects of life to specifically sexual experience" (Gagnon & Simon, 1973, p. 17). Sexual script theory (Simon & Gagnon, 1984, 1987) suggests that the observation of how individuals sexually interact with others in (mediated) environments may lead individuals to form sexual scripts and (novel) attitudes on how one is expected to behave (in this study: MV preferences).

Such observations and the subsequent adoption of attitudes do not only take place offline but also on dating apps (Christensen, 2021; Tomaszewska & Schuster, 2020). Applied to this study, the adopted MV preferences may depend on whether a person is a dating app user and the extent to which dating apps are used. Among dating app users specifically, the extent to which dating app users actively select or reject suggested profiles, i.e. swiping, can be considered as well. More precisely, Study 1 showed that users dominantly portrayed the extrinsic MVs of resources and physical attractiveness in the textual and visual features of popular dating apps respectively. Users emphasized the intrinsic MV of personality traits to a lesser extent. The emphasis on these extrinsic MVs may lead frequent dating app users (and users who swipe more often in particular) to adopt their MV preferences accordingly by attaching greater importance to extrinsic MVs and attaching less importance to intrinsic MVs compared to non-users, less frequent dating app users, and users who swipe less often.

Although no study has tested sexual script theory concerning MV preferences, earlier studies have successfully used sexual script theory (Simon & Gagnon, 1984, 1987) to explain the relationship between dating app use and other types of attitudes (Christensen, 2021; Tomaszewska & Schuster, 2020). To illustrate, dating app users have been shown to learn more about sexual attitudes, such as the acceptance of risky sexual behaviors, compared to non-dating app users (Tomaszewska & Schuster, 2020). Due to a lack of research on the links between dating app usage and MV preferences, Study 2 (i.e., a cross-sectional study) will test the following predictions:

H1/H2 Frequency of dating app use (H1) and in particular users' swiping frequency (H2) is negatively related to a MV preference for personality traits (H1a/H2a) and positively related to MV preferences for resources (H1b/H2b) and physical attractiveness (H1c/H2c).

Dating App Use, Mate Value Preferences, and Sexual Satisfaction

Individuals' MV preferences may affect individuals' sexual satisfaction (Rodriguez et al., 2015; Sheldon, 2007), and this may even occur in the absence of establishing offline sexual connections. Sexual satisfaction captures how satisfied a person feels about their sexual life (Peter & Valkenburg, 2009) and is thus a subjective evaluation of how a person feels about his/her/their sexual life, including their online and offline experiences (Štulhofer et al., 2010). This reasoning builds on sexual script theory (Simon & Gagnon, 1984, 1987) as well as media research testing sexual script theory (Bennett-Brown & Wright, 2022; Wright et al., 2019), which highlighted that sexual media use (i.e., pornography use) related to lower levels of sexual satisfaction via certain underlying processes (e.g., a preference for pornographic excitement). Generally applied to this study, the relationships between media use (in this study: dating app use/swiping frequency) and certain outcomes, such as sexual satisfaction, may indirectly occur via the learning of sexual scripts and adapting one's attitudes accordingly (in this study: MV preferences).

Previous research on dating apps and well-being (e.g., sexual satisfaction) did not particularly focus on indirect

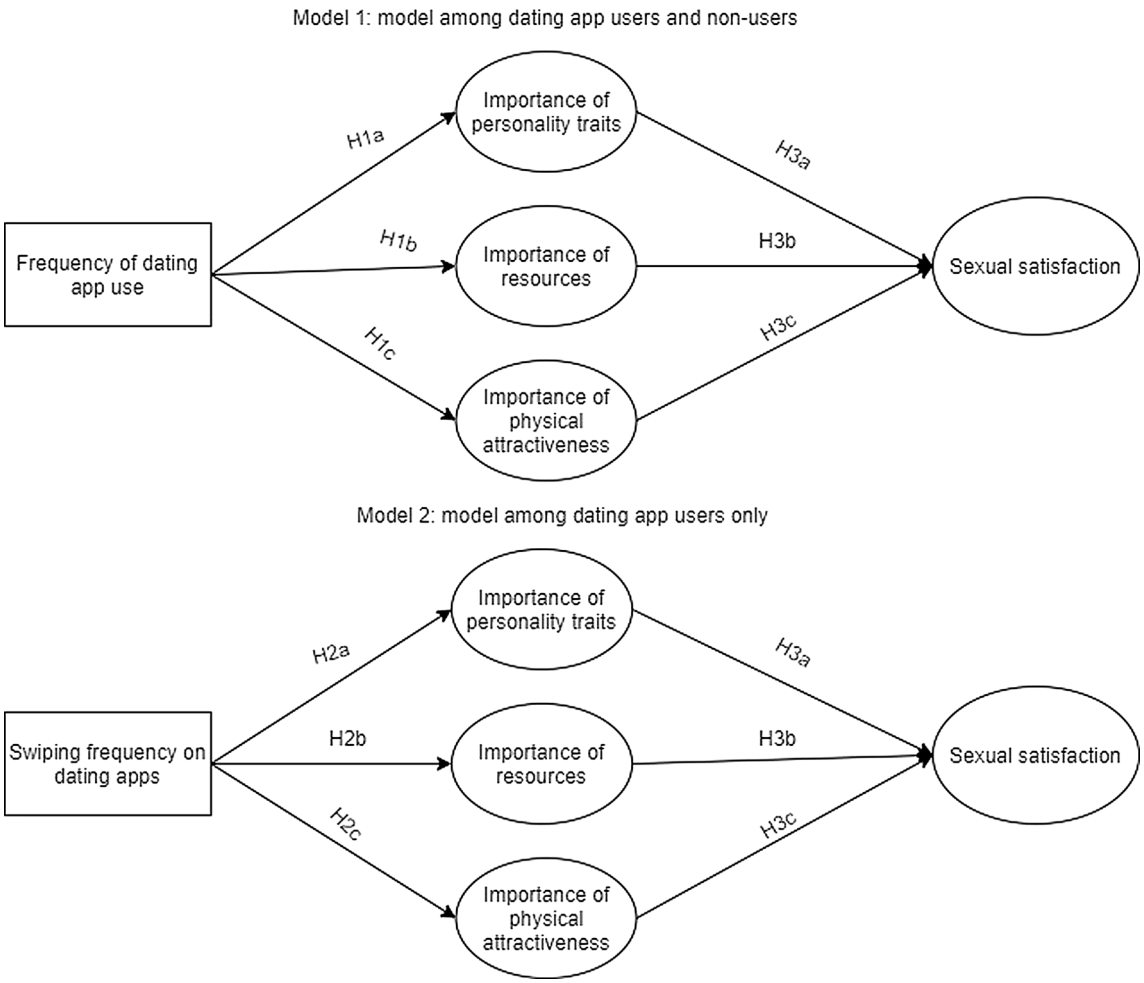

Fig. 1 Hypothesized model Study 2. *Note* Intrinsic MVs refer to personality traits and extrinsic MVs to physical attractiveness and resources. Importance of personality traits, resources, and physical attractiveness are conceptualized as MV preferences in the manuscript. Control variables are age, sexual orientation and relationship status. Control variables and error terms are not shown for clarity

relationships via individuals' MV preferences (Konings et al., 2022). To further understand how individuals' intrinsic and extrinsic MV preferences may relate to sexual satisfaction, other theories like relationship motivation theory (RMT) may be applied to this study (La Guardia, 2008; La Guardia et al., 2000). RMT highlights that individuals are motivated to find partners for different reasons. (Sexual) satisfaction can occur when individuals seek connections with others with whom they feel a sense of connection and relatedness (La Guardia, 2008; La Guardia et al., 2000). Such connections emerge when individuals can connect with partners who have desirable intrinsic MVs (i.e., personality traits; Rodriguez et al., 2015). Research has indeed suggested that valuing intrinsic MVs over extrinsic MVs may enhance individuals' feelings of (sexual) satisfaction (Rodriguez et al., 2015; Zurbriggen et al., 2011). While these theories (La Guardia et al., 2000) were designed and empirically tested among people in a committed relationship (Rodriguez et al., 2015; Zurbriggen et al., 2011), the links under scrutiny may also exist among (single) individuals who use dating apps. To test this reasoning, we formulated the following hypothesis:

H3 A higher MV preference for personality traits is positively related to sexual satisfaction (H3a) whereas a higher MV preference for resources (H3b) and physical attractiveness (H3c) is negatively related to sexual satisfaction.

Differential Susceptibility: Gender Differences

When studying the hypothesized relations (see Fig. 1), gender differences may be present as women and men differ in their MV preferences for personality traits, resources, and physical attractiveness (Abramova et al., 2016; Kostic & Scofield, 2022; Neyt et al., 2022; Roshchupkina et al., 2023). Men are known to attach greater importance to physical attractiveness

and women to personality traits and resources (Buss, 2023; Furnham, 2009). Following sexual script theory (Simon & Gagnon, 1984, 1987), a predisposition (i.e., gender) for intrinsic and extrinsic MV preferences may intensify the MV socialization process on dating apps and one's adoption of attitudes. Given these differences, women who frequently use dating apps (compared to non-users and less frequent users) in general, or view more profiles on dating apps because they swipe more frequently (compared to less frequent swiping), may increase their MV preferences regarding personality traits and resources to a greater extent. Similar relationships may occur for men regarding the MV preference for physical attractiveness. Accordingly, we tested the following hypotheses:

H4/H5 The negative relationship between the frequency of dating app use (H4a)/ swiping frequency (H5a) and the MV preference for personality traits is stronger among women than men. The positive relationship between the frequency of dating app use (H4b)/users' swiping frequency (H5b) and the MV preference for resources is stronger among women than men. The positive relationship between the frequency of dating app use (H4c)/users' swiping frequency (H5c) and the MV preference for physical attractiveness is stronger among men than women.

Research further suggests that men and women may differ regarding the negative impact of intrinsic versus extrinsic MV preferences. More precisely, one study showed that men experience lower levels of sexual satisfaction when they objectify a partner and thus value the extrinsic MV of physical attractiveness above personality traits more so than women (Zurbriggen et al., 2011). As research on the interrelations between other MVs (e.g., resources) and sexual satisfaction is lacking, we posed the following research question (RQ):

RQ1 Does gender moderate the relations between the MV preference for personality traits, resources, and physical attractiveness on the one hand and sexual satisfaction on the other hand?

Differential Susceptibility: Committed Relationship versus Casual Sex Motivations

A second predisposition that might influence dating app users' adoption of their MV preferences is their motivation for using dating apps. Dating app users may differ in the extent to which they use dating apps to find a committed relationship or casual sex partner (Sumter et al., 2017). Research suggests that individuals who are looking for a long-term partner versus a short-term casual sex partner differ in their MV preferences. Individuals who seek a committed relationship attach importance to personality traits, physical attractiveness, and resources. Individuals who aim to find a casual sex partner have a higher MV preference for physical attractiveness and a lower MV preference for resources compared to individuals who aim to find a committed relationship (Jonason et al., 2013; Li, 2007).

Sexual script theory (Simon & Gagnon, 1987) would expect that a predisposition (i.e., committed relationship vs. casual sex motivation) for intrinsic versus extrinsic MV preferences may intensify the adoption of one's attitudes in line with the MVs that are dominantly presented in dating apps. To illustrate, dating app users (who swipe more often) and who have a higher casual sex motivation to use dating apps may adopt their MV preference for physical attractiveness to a greater extent compared to users who have a lower casual sex motivation (Jonason et al., 2013; Li, 2007). Physical attractiveness is a MV that is dominantly highlighted in dating apps (see Study 1). In a similar vein, dating app users who swipe more often and who have a higher committed relationship motivation may adopt their MV preference for resources to a greater extent compared to individuals who have a lower committed relationship motivation (Li, 2007). Resources is a MV that is dominantly highlighted in dating apps (see Study 1). It is unclear whether the expected negative relationships between swiping frequency and a MV preference for personality traits will differ based on different motivations to use dating apps as research illustrated that personality traits are important MVs for both groups of individuals (Jonason et al., 2013).

Additionally, differences in dating app motivations may also appear in the relationships between intrinsic and extrinsic MV preferences and sexual satisfaction. Existing research merely focused on individuals in committed relationships but ignored individuals who are searching for short-term casual sex partners (Rodriguez et al., 2015; Zurbriggen et al., 2011). Therefore, we posed the following RQs:

RQ2–3 Does the extent to which dating app users have a committed relationship motivation (RQ2) versus a casual sex motivation (RQ3) moderate the relationships between swiping frequency and the MV preference for personality traits, resources, and physical attractiveness (RQ2a–3a) and between these MV preferences and sexual satisfaction (RQ2b–3b)?

Method

Participants

In April/May 2019, emerging adults were recruited via social media. Research assistants and the researchers shared the link to the survey on different social media platforms. Participants provided active consent. A lottery to win a reward card of €20 was organized.

Based on prior dating app research (Konings et al., 2022; Schreurs et al., 2020; Timmermans et al., 2021), a total of 433 participants were recruited. An a-priori power analysis using G*power indicated that a minimum sample size of N = 311 was required to test the desired models with a small effect size of 0.02 (1 − ß = 0.80, α = 0.05). Of the 433 participants, 325 were part of the analytical sample to test a model among dating app users and non-users. Model 2 focused on dating app users only (n = 144). In the overall sample, participants had a mean age of 22.45 years (SD = 2.14), 80.45% were women, and 79.70% were heterosexual. Among the subsample of dating app users, participants had a mean age of 22.38 (SD = 2.12), 80.56% were women, and 81.25% were heterosexual.

Measures among Dating App and Non-dating App Users

Sociodemographic Variables

Age, gender (0 = male, 1 = female), relationship status (0 = single, 1 = committed relationship), and sexual orientation (1 = attracted to only men, 2 = merely attracted to men, but also to women, 3 = attracted to both men and women, 4 = merely attracted to women, but also to men, 5 = attracted to women, 6 = I don't want to tell this) (Kinsey et al., 1948; Peter & Valkenburg, 2011) were measured. A dichotomous variable was created for sexual orientation (0 = exclusively heterosexual and 1 = not exclusively heterosexual).

Sexual Satisfaction

Participants evaluated two items on a scale from (1) *totally disagree* to (7) *totally agree* (Peter & Valkenburg, 2009). A new variable was created by averaging the two items, $r_{\text{overall sample/dating app users}} = 0.91/0.89$, $p_{\text{overall sample/dating app users}} < 0.001/ < 0.001$. Higher scores indicated higher levels of sexual satisfaction.

Intrinsic and Extrinsic Mate Value Preferences

Based on Ha et al. (2010), participants rated the importance of 34 characteristics in a partner on a scale from (1) *totally unimportant* to (10) *totally important*. A first principal component analysis (PCA), revealed that the items loaded on nine factors with an eigenvalue greater than one; explained $\text{variance}_{\text{overall sample/dating app users}} = 62.24\%/64.78\%$. Seven items were deleted due to low factor loadings, low face validity, or because it was the only item that loaded on a factor.[1] PCA was redone with the remaining items and revealed seven factors, explained $\text{variance}_{\text{overall sample/dating app users}} = 62.61\%/65.39\%$.[2] Only the subscales regarding physical attractiveness (four items, $\text{eigenvalue}_{\text{overall sample/dating app users}} = 1.83/2.12$, $\text{explained variance}_{\text{overall sample/dating app users}} = 7.\ 34\%/8.49\%$; $\alpha_{\text{overall sample/dating app users}} = 0.71/\ 0.69$), resources (five items, $\text{eigen value}_{\text{overall sample/dating app users}} = 6.07/\ 6.12$, $\text{explained variance}_{\text{overall sample/dating app users}} = 24.26\%/\ 24.48\%$, $\alpha_{\text{overall sample/dating app users}} = 0.85/0.87$) and personality traits were used in the analyses. The MV of personality was formed by two different subscales: i.e., social personality (i.e., four items, $\text{eigenvalue}_{\text{overall sample/dating app users}} = 1.07/\ 0.98$, $\text{explained variance}_{\text{overall sample/dating app users}} = 4.28\%/\ 3.91\%$, $\alpha_{\text{overall sample/dating app users}} = 0.73/\ 0.75$) versus caring personality (i.e., four items, $\text{eigenvalue}_{\text{overall sample/dating app users}} = 2.74/2.91$, $\text{explained variance}_{\text{overall sample/dating app users}} = 10.95\%/11.64\%$, $\alpha_{\text{overall sample/dating app users}} = 0.73/\ 0.77$). Novel scales were created by averaging the items; higher scores indicated higher attached importance to the various MVs.

Frequency of Dating App Use

Participants indicated if they used dating apps (1 = no never, 2 = no, but in the past, 3 = yes, I'm a current user) (Botnen et al., 2018). Current and former users indicated the frequency of dating app use on a scale ranging from (1) *almost never* to (7) *multiple times a day* (Sumter et al., 2017). Non-dating app users received the score *never* (= 0).

Measures Among Dating App Users

Swiping Frequency

Dating app users indicated how many profiles they viewed on average when they were swiping on dating app(s), M = 34.13, SD = 29.89, range = 4–162.[3] This score was weighted by multiplying it with the frequency of dating app use that current and former dating app users had indicated on a scale from (1) *almost never* to (7) *multiple times a day* (Sumter et al., 2017) (M = 160.48, SD = 156.96, *range* = 7–900).[4] Higher scores indicated a higher swiping frequency.

[1] Seven items were deleted due to low face validity or low factor loadings in the overall sample or subsample of dating app users (i.e., career-drive, popularity, intelligence, creativity, experience with relationships, extraverted, caring). Two additional items were deleted because each only loaded on one factor (i.e., loves animals, adventurous).

[2] Note that seven factors with eigenvalues > 1 were extracted in the overall sample. In the dating app subsample, only six factors were extracted with eigenvalues > 1. To have the same factors across both samples, we forced seven factors in the dating app subsample and the same factor structure was found as in the whole sample.

[3] Note that the wording was changed for former dating app users, who were asked to think about their past use of (a) dating app(s).

[4] Note that participants with outliers in the dataset were deleted, resulting in a final analytical sample of 133 dating app users. This resulted in a mean score of 126.77 on the swiping frequency variable (SD = 94.59, range = 7–400).

Committed Relationship Motivation versus Casual Sex Motivation

The relationship-seeking and sex-seeking subscales of the Tinder Motivation Scale (Sumter et al., 2017) were applied to the use of dating apps in general. Participants evaluated nine items such as "I use (a) dating app(s) because it helps me to find a romantic relationship" on a scale from (1) *totally disagree* to (7) *totally agree*. PCA extracted a committed relationship motivation factor (five items, eigenvalue = 4.65, explained variance = 51.71%, α = 0.93) and casual sex motivation factor (four items, eigenvalue = 2.51, explained variance = 27.88%, α = 0.92). A committed relationship motivation versus casual sex motivation scale was created by averaging the item scores for each subscale; higher scores indicated higher levels of using dating apps to find a romantic partner or casual sex partner.

Analytical Strategy

Before testing the models, zero-order correlations and descriptive statistics were analyzed. Independent *t*-tests and MANOVA's (multivariate analysis of variance) were analyzed to examine differences between men and women. Normality was checked. Skewness (< 3) and kurtosis (< 10) indicated a normal distribution in the overall sample and subsample of dating app users (Kline, 2011). For the subsample of dating app users, outliers were detected. Participants with outliers on swiping frequency, i.e., a value of more than the third quartile plus 1.5 times the interquartile range, were excluded. This resulted in an analytical dataset of 133 dating app users. Hypotheses 1–3 were tested using model 4 in Hayes Process Macro (Hayes, 2013). All other hypotheses and RQs were tested using model 59 (i.e., bootstrapped 5000 samples). Different models were tested. Model 1 tested our main hypotheses (H1 and H3, Model 1a). The moderating role of gender among the full sample of dating app users and non-dating app users (H4, RQ1) was tested in another model (Model 1b) to examine whether significant interaction terms emerged. Model 2 tested the main hypotheses of swiping frequency (H2 and H3, Model 2a) and another model tested the moderating role of gender in a subsample with dating app users only (H5 and RQ1, Model 2b). Separate models tested the moderating role of a committed relationship motivation (RQ2a–3a, Model 2c) versus a casual sex motivation (RQ2b–3bModel 2d) and examined whether significant interaction terms emerged. The analyses controlled for relationship status, age, and sexual orientation. All syntaxes and datasets can be found on OSF (https://osf.io/kzwvd/).

Results

Descriptive Statistics

Zero-order correlations and descriptive statistics can be found in Table 5. Concerning gender differences across the whole sample, MANOVA indicated no differences for the MV preference for social personality traits, $F(1, 292) = 0.35$, $p = .56$, resources, $F(1, 292) = 3.15$, $p = .08$, or physical attractiveness, $F(1, 292) = 3.58$, $p = .06$, frequency of dating app use, $F(1, 265) = 0.01$, $p = .91$, and sexual satisfaction, $F(1, 266) = 1.16$, $p = .28$. Women had a higher MV preference for caring personality traits ($M = 8.87$, $SD = 0.83$) than men ($M = 8.35$, $SD = 0.87$), $F(1, 292) = 18.26$, $p < .001$. As for the subsample of dating app users, *t*-tests indicated that men ($M = 155.19$, $SD = 112.98$) did not significantly swipe more frequently compared to women ($M = 119.86$, $SD = 88.80$), $t(32.89) = 1.49$, $p = .15$.

Model 1: Sample Among Dating App Users and Non-users

H1a–c could not be confirmed as no relationship existed between the frequency of dating app use and the MV preference for caring or social personality traits, resources, and physical attractiveness. These MV preferences did not relate to sexual satisfaction (rejecting H3a–c, see Table S1 on OSF (https://osf.io/kzwvd/)).

Gender did not moderate the relationships between the frequency of dating app use and the different MV preferences (not supporting H4a–c), nor the relationships between these MV preferences and sexual satisfaction (RQ1, see Table S2 on OSF (https://osf.io/kzwvd/)).

Model 2: Subsample of Dating App Users

H2a–c could not be confirmed as swiping frequency did not relate to the MV preference for caring and social personality traits, resources, and physical attractiveness. These MV preferences did not relate to sexual satisfaction (not confirming H3a–c, see Table S3 on OSF (https://osf.io/kzwvd/)).

Gender did not moderate the relationships between swiping frequency and MV preferences (not confirming H5a–H5c). For RQ1, gender moderated the relationships between the MV preference for physical attractiveness and sexual satisfaction, $B = 0.87$, $SE = 0.44$, $t = 1.99$, $p = .04$. Yet, conditional relations revealed that these relations were not significant among men, $eff = -0.69$, $SE = 0.41$, $t = -1.67$, $p = .10$, and women, $eff = 0.19$, $SE = 0.15$, $t = 1.23$, $p = .22$ (see Table 6).

Table 5 Descriptive statistics and zero-order correlations across the total sample of Study 2

	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	M (SD)
1. Age	22.40 (2.37)	–	−.20*	.02	−.08	.05	−.03	.03	.03	.05	.20*	.01	.30***	.06	22.45 (2.14)
2. Gender	.79 (.41)	−.15**	–	.11	.01	.17	.10	.23**	−.10	.11	−.08	−.15	−.07	−.31***	.80 (.40)
3. Relationship status	.56 (.50)	.15**	−.00	–	−.09	.58***	.11	.11	.07	−.01	.25**	.04	.09	−.04	.50 (.50)
4. Sexual orientation	.14 (.35)	.08	.03	−.03	–	−.18*	−.14	−.20*	−.04	−.07	.06	.07	.10	.15	.20 (.40)
5. Sexual satisfaction	4.66 (1.76)	.03	.07	.48***	−.15*	–	.07	.05	.09	.04	.06	.03	−.01	.07	4.60 (1.90)
6. Importance of SPT	8.01 (1.06)	−.04	.04	.07	−.09	.10	–	.49***	.34***	.33***	−.01	.06	−.06	.15	7.97 (1.11)
7. Importance of CPT	8.77 (.87)	−.05	.24***	.09	−.12*	.10	.47***	–	.08	.28***	.09	.05	.01	−.25**	8.82 (.88)
8. Importance of PA	6.80 (1.17)	−.02	−.11	.14*	−.08	.17**	.35***	.26***	–	.50***	.15	.11	.19*	.22*	6.72 (1.17)
9. Importance of RE	5.34 (1.83)	.01	.10	.00	−.05	.08	.25***	.21***	.46***	–	.07	.07	.24**	.12	5.13 (1.94)
10. FDA	2.46 (2.53)	.03	.01	−.06	.10	.04	−.01	.02	.02	−.05	–	.45***	.46***	.11	4.46 (1.54)
11. Swiping frequency												–	.19*	.06	126.78 (94.59)
12. CRM													–	.30***	3.88 (1.66)
13. CSM														–	2.08 (1.40)

SPT = social personality traits, CPT = caring personality traits, PA = physical attractiveness, RE = resources, FDA = frequency of dating app use, CRM = committed relationship motivation, CSM = casual sex motivation. * < .05, ** < .01, *** < .001. Correlation coefficients below the diagonal represent the total sample. Correlation coefficients above the diagonal represent the dating app users subsample

A committed relationship motivation did not moderate the relationships between swiping frequency and the different MV preferences (RQ2a) or between the MV preferences and sexual satisfaction (RQ2b; see Table S4 on OSF (https://osf.io/kzwvd/)). A casual sex motivation did not moderate the relationships between swiping frequency and the different MV preferences (RQ3a). This motivation, however, moderated the relationship between the MV preference for social personality traits and sexual satisfaction, $B = -0.36$, $SE = 0.15$, $t = -2.45$, $p = .02$. A negative relationship only existed among dating app users who scored high on using dating apps for finding a casual sex partner; this relationship was non-significant among dating app users who scored low on this motivation (RQ3b; see Table 7). A casual sex motivation did not moderate the relationship between the MV preference for caring personality traits, resources, or physical attractiveness and sexual satisfaction.

Discussion

Several conclusions can be drawn from the findings of Study 2. First, in contrast to our expectations derived from sexual script theory (Simon & Gagnon, 1984, 1987), the frequency of dating app use did not relate to the MV preferences for personality traits, resources, or physical attractiveness. Even when considering more specific types of dating app behaviors (i.e., swiping frequency), no links were found. Potentially, more specific swiping behaviors should be considered.

Second, MV preferences did not relate to sexual satisfaction when considering the full sample of (non-) dating app users. Potentially, other outcomes than sexual satisfaction may be more prominently associated with individuals' MV preferences.

Besides the consideration of more specific swiping behaviors and another outcome variable than sexual satisfaction, another reason for our null findings may be that individual differences should be considered in the relationships under scrutiny. The results provided some evidence for this reasoning; having a casual sex motivation to use dating apps played a role in the associations between certain MV preferences and sexual satisfaction. This finding highlights the importance of distinguishing between different relationship types when testing theories like RMT (La Guardia, 2008; La Guardia et al., 2000). While previous research among people in committed relationships found that the MV preference for personality traits was associated with positive outcomes (La Guardia et al., 2000; Sheldon, 2007), Study 2 found that these results did not apply to individuals who used dating apps to find a casual sex partner. Among this specific group of dating app users, a negative relationship occurred between the MV preference for social personality traits and sexual satisfaction.

Table 6 Results regarding the relationships between swiping frequency, MV preferences, and sexual satisfaction among the dating app user subsample of Study 1

	Importance of SPT		Importance of CPT		Importance of PA		Importance of RE		Sexual satisfaction	
	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI
Constant	− .08 (1.10)	[− 2.33; 2.11]	− 1.02 (.85)	[− 2.43;.47]	− .10 (1.18)	[− 2.07; 1.83]	− 2.05 (1.95)	[− 5.39; 1.59]	2.62 (1.58)	[2.62; 6.05]
Swiping frequency	.00 (.00)	[− .00; .07]	.00 (.00)	[− .00; .00]	.00 (.00)	[.00; .01]	.00 (.00)	[− .01; .01]	.00 (.00)	[− .00; .01]
Gender	.32 (.26)	[− .16; .76]	.57 (.20)**	[.21; .92]	− .19 (.27)	[− .72; .34]	.75 (.45)	[− .36; 1.77]	.29 (.42)	[− .65; 1.30]
Gender × swiping frequency	− 01 (.00)	[− .01; .00]	− .00 (.00)	[− .00; .00]	− .00 (.00)	[− .01; .00]	− .00 (.00)	[− .01; .01]	− .00 (.00)	[− .01; .00; .26]
Relationship status	.18 (.14)	[− .18; .54]	.11 (.15)	[− .19; .39]	.18 (.21)	[− .23; .60]	− .14 (.34)	[− .82; .51]	2.06 (.28)***	[1.50; 2.66]
Age	− .01 (.05)	[− .10; .09]	.03 (.04)	[− .98; − .02]	.01 (.05)	[− .08 .09]	.07 (.08)	[− .08; .21]	.04 (.06)	[− .10; .17]
Sexual orientation	− .44 (.24)	[− 1.06; .12]	− .44 (.19)*	[− .98; − .02]	− .16 (.26)	[− .62; .28]	− .39 (.43)	[− 1.24; .43]	− .67 (.36)	[− 1.41; .07]
Importance of SPT									− .20 (.46)	[− 1.81; .83]
Importance of SPT × gender									.20 (.48)	[− .89; 1.86]
Importance of PA									− .69 (.41)	[− .21; .76]
Importance of PA × gender									.87 (.44)*	[− .25; 1.88]
Importance of RE									.26(.19)	[− .21; .76]
Importance of RE × gender									− .27(.22)	[− .81; .25]
Importance of CPT									.43(.50)	[− .61; 1.61]
Importance of CPT × gender									− .72(.54)	[− 1.93; .45]
Model	$R = .123$, $R^2 = .05$	$F(6,126) = 1.20$, $p = .31$	$R = .33$, $R^2 = .11$	$F(6, 126) = 2.61$, $p < .05$	$R = .21$, $R^2 = .04$	$F(6, 126) = 0.95$, $p = .46$	$R = .85$, $R^2 = .03$	$F(6, 126) = 0.72$, $p = .63$	$R = .65$, $R^2 = .41$	$F(14, 118) = 4.80$, $p < .001$

Note. SPT = social personality traits, CPT = caring personality traits, PA = physical attractiveness, RE = resources, FDA = frequency of dating app use. * < .05, ** < .01, *** < .001. 95% CI represent the bootstrapped CI

Table 7 Results of the moderating role of a casual sex motivation in the relationships between swiping frequency, MV preferences, and sexual satisfaction of Study 2

	Importance of SPT		Importance of CPT		Importance of PA		Importance of RE		Sexual satisfaction	
	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI
Constant	.33 (1.03)	[−0.69; 2.44]	−.29 (.79)	[−1.65; 1.14]	−.18 (1.08)	[2.02; 1.75]	−.63 (1.82)	[−3.90; 3.57]	2.92 (1.44)	[−.31; 6.18]
Swiping frequency	.00 (.00)	[−.00; .00]	.00 (.00)	[−.00; .00]	.00 (.00)	[−.00; .00]	.00 (.00)	[−.00; .01]	.00 (.00)	[−.00; .00]
CSS	−.11 (.07)	[−.35; .08]	−.14 (.05)	−.36; .32]	.19 (.07)*	[.01; .33]	.18 (.12)	[−.17; .48]	−.04 (.16)	[−.16; .33]
CSS × swiping frequency	.00 (.00)	[−.00; .00]	.00 (.00)	[−.00; .00]	.00 (.00)	[−.00; .00]	−.00 (.00)	[−.00; .00]	.00 (.00)	[−.00; .00]
Relationship status	.20 (.19)	[−.17; .56]	.15 (.15)	[−.13; .43]	.17 (.20)	[−.22; .60]	−.06 (.34)	[−.75; 57]	2.21 (.27)***	[1.62; 2.75]
Age	−.02 (.05)	[−.11; .07]	.01 (.04)	[−.76; −.04]	.01 (.05)	[−.08; .09]	.03 (.08)	[−.14; .18]	.03 (.06)	[−.12; .17]
Sexual orientation	−.34 (.24)	[−.84; .20]	−.35 (.19)	[−.76; −.04]	−.21 (.26)	[−.64; .25]	−.44 (.43)	[−1.28; .37]	−.69 (.34)	[−1.35; .18]
Importance of SPT									−.04 (.16)	[−.35; .29]
Importance of SPT × CSS									−.36 (.15)	[−.64; .02
Importance of PA									−.05 (.15)	[−.30; .20]
Importance of PA × CSS									.07 (.11)	[−.23; .26]
Importance of RE									.09 (.09)	[−.08; .25]
Importance of RE × CSS									.07 (.07)	[−.07; .22]
Importance of CPT									.13 (.20)	[−.26; .50]
Importance of CPT × CSS									.09 (.13)	[−.25; .34]
Model	$R = .24$, $R^2 = .06$	$F(6, 126) = 1.26$, $p = .28$	$R = .33$, $R^2 = .11$	$F(6, 126) = 2.56$, $p = .02$	$R = .27$, $R^2 = .07$	$F(6, 126) = 1.70$, $p = .13$	$R = .17$, $R^2 = .03$	$F(6, 126) = .63$, $p = .71$	$R = .65$, $R^2 = .42$	$F(14, 118) = 6.13$, $p < .001$

SPT = social personality traits, CPT = caring personality traits, PA = physical attractiveness, RE = resources, CSM = casual sex motivation. * < .05, *** < .001. 95% CI represent the bootstrapped CI

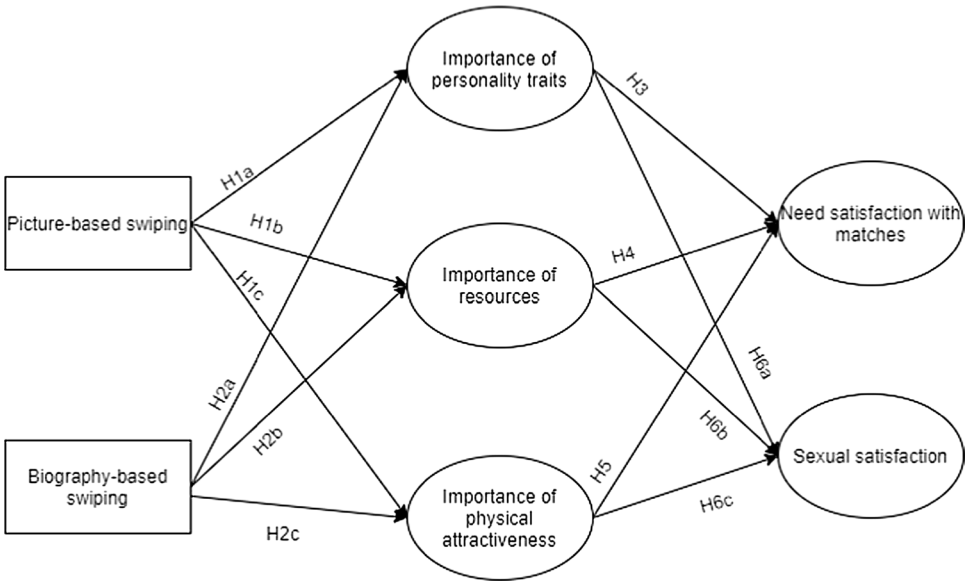

Fig. 2 Hypothesized model Study 3. *Note* Intrinsic MVs refer to personality traits and extrinsic MVs to physical attractiveness and resources. Importance of personality traits, resources, and physical attractiveness are conceptualized as MV preferences in the manuscript. Control variables are age, sexual orientation and relationship status. Control variables and error terms are not shown for clarity

Additionally, gender did not affect the examined relationships, contradicting our expectations based on prior research (Zurbriggen et al., 2011). One explanation may be that the moderating role of gender may exist when different swiping behaviors are considered. Additionally, our descriptive statistics revealed fewer differences between men and women than in prior literature. Potentially, gender socialization processes (e.g., feminist perspectives condemning the valuing of women for their appearance by men received much attention in the #Metoo movement; Maes et al., 2019) have changed in the current society, making gender differences less outspoken.

Study 3 will test our reasoning for the consideration of more specific types of swiping behaviors and other outcome variables than sexual satisfaction.

Study 3: The Role of Swiping Behaviors in Dating App Users' Mate Value Preferences

Whereas Study 1 indicated that people present different MVs through their pictures and biographies, Study 2 examined how dating app use and swiping frequency may differently relate to individuals' intrinsic and extrinsic MV preferences. Study 2 indicated no significant relationships between swiping frequency and individuals' MV preferences. However, Study 2 did not take into account what dating app users focused on while swiping; a different swiping focus might result in qualitatively different dating app experiences. Thus, when we want to understand how dating app use may affect individuals' MV preferences, a more nuanced conceptualization of dating app use is needed.

Potentially, the differences that exist between how users present themselves on their dating profiles (see Study 1) can be used to further contextualize the differences that may exist in how users scan the information on dating profiles during the partner selection process. For instance, certain users may pay attention to pictures while swiping whereas others may search for other (textual) cues (Ward, 2017). When swiping is based on pictures (i.e., "picture-based swiping"), our content analysis (Study 1) and prior research (Ward, 2017; Yeo & Fung, 2018) reveal that the extrinsic MV of physical attractiveness is highlighted. Other individuals may attribute more attention to the additional information that can be seen in users' biographies (Ward, 2017) during swiping and thus use a rather "biography-based" swiping procedure. Study 1 revealed that especially the intrinsic MV of personality traits and the extrinsic MV of resources prevail in one's biography.

The dominant presentation of different MVs in users' biographies versus pictures may affect dating app users' MV preferences according to sexual script theory (Simon & Gagnon, 1984, 1987). Picture-based swiping may in particular socialize the MV preference for physical attractiveness. Similarly, biography-based swiping may socialize the MV preference for personality traits (i.e., intrinsic MV) and resources (i.e., extrinsic MV) at the cost of other MVs (i.e., physical attractiveness). Research supporting this reasoning remains lacking. Yet, studies have called for more insights into such specific types of dating app behaviors using more precise measures (Konings et al., 2022). Therefore, Study 3 (i.e., a cross-sectional study) aims to test such relations (see Fig. 2):

H1 Picture-based swiping negatively relates to the MV preference for personality traits (H1a) and resources (H1b), but positively relates to the MV preference for physical attractiveness in a partner (H1c).

H2 Biography-based swiping positively relates to the MV preference for personality traits (H2a) and resources (H2b),

but negatively relates to the MV preference for physical attractiveness (H2c).

Dating App Behaviors, Mate Value Preferences, Sexual/Need Satisfaction Satisfaction

Study 2 examined the relationships between intrinsic and extrinsic MV preferences and sexual satisfaction but could not find any associations. These null findings may potentially be explained by the type of measurement that was used. Sexual satisfaction captures individuals' subjective levels of happiness with their sexual lives (Peter & Valkenburg, 2009). Potentially, a broader measure that captures the various psychological needs regarding autonomy, competence, and relatedness that individuals require in a potential partner to be satisfied, like need satisfaction, may be required (Rodriguez et al., 2015). To test the reasoning of RMT that Study 2 built upon (La Guardia, 2008; La Guardia et al., 2000), it may be beneficial to apply this concept of need satisfaction to the context of dating apps. This could involve measuring the satisfaction of dating app users with potential partners met through the apps in terms of autonomy, relatedness, and competence, which will be labeled as "need satisfaction with matches." As such, we tested the next hypotheses (see Fig. 2):

H3–H5 While a MV preference for personality traits (i.e., intrinsic MV) is positively related to need satisfaction with matches (H3), a MV preference for resources (H4) and physical attractiveness (H5) is negatively related to need satisfaction with matches.

A second aim of Study 3 was to investigate whether the null findings observed in Study 2 regarding sexual satisfaction would be replicated in a new study among another and larger sample of dating app users. Replicating such null findings would provide stronger evidence that MV preferences are indeed not related to sexual satisfaction and may inform future research on the consideration of other variables than sexual satisfaction.

H6 A MV preference for personality traits is positively related to sexual satisfaction (H6a) whereas a MV preference for resources (H6b) and physical attractiveness (H6c) is negatively related to sexual satisfaction.

Differential Susceptibility: Gender Differences

Although Study 2 found no support for the moderating role of gender in the relationships between swiping frequency and MV preferences, it might be that gender differences do exist for specific types of swiping behaviors. This reasoning builds on sexual script theory (Simon & Gagnon, 1984, 1987), which highlights individuals' predispositions to adopt certain attitudes (in this study: MV preferences). Thus, as men and women are known to differ in certain predispositions, this might translate to a dating app context. For example, our Study 2 suggested differences between men and women only existed for the MV preference for caring personality traits. Given that the MV of caring personality traits occurred in our research and prior research as being more valued by women than by men (Fisman et al., 2006; Furnham, 2009), women may especially attach greater importance to a potential partner's caring personality traits compared to men when their swiping behavior is focused on features that highlight these MVs (i.e., biography-based swiping).

Potentially, other gender differences also exist. Yet the reasoning on how gender may interact with the links between picture- or biography-based swiping and other MVs (i.e., resources, physical attractiveness) is unclear. Additionally, Study 2 found no support for gender as a moderator in the relationships between MV preferences and sexual satisfaction. It remains unclear if these non-significant results would be replicated in another and larger sample of dating app users or when using another variable other than sexual satisfaction.

RQ1 Does gender moderate the relationships between biography-based/picture-based swiping and the MV preference for personality traits, resources, and physical attractiveness (RQ1a) and the relationships between these MV preferences and need satisfaction with matches (RQ1b)/sexual satisfaction (RQ1c)?

Differential Susceptibility: Committed Relationship Versus Casual Sex Motivations

Finally, Study 2 found no support for the moderating role of a committed relationship versus casual sex motivation to use dating apps in the relationships between swiping frequency and MV preferences. Such differences may be more pronounced when considering differences between biography- versus picture-based swiping behaviors. Following sexual script theory (Simon & Gagnon, 1984, 1987), the links under scrutiny may be strengthened by a predisposition (i.e., committed relationship motivation versus casual sex motivation) for individuals' intrinsic versus extrinsic MV preferences.

More precisely, individuals who are seeking a committed relationship have a predisposition to value personality traits, resources, and physical attractiveness in a potential partner (Jonason et al., 2013; Li, 2007). For this group of dating app users, we expect that the relationship between biography-based swiping and the MV preference for resources may be strengthened as the MV of resources is most often described in biographies (see Study 1). People who are looking for a short-term casual sex partner attach even more importance to physical attractiveness and attach less importance to resources (Jonason et al., 2013; Li, 2007). Hence, when users with this motivation for using dating apps engage in

picture-based swiping, we may expect that the relationship between swiping and the MV preference for physical appearance will be strengthened, as Study 1 showed that pictures are used to highlight physical attractiveness. Regarding the MV of personality traits, it remains unclear whether the relationship between biography-based swiping and the MV preference for personality traits is equally strengthened among users who have a committed relationship or a casual sex motivation. Research suggests that both types of individuals attach importance to this MV (Jonason et al., 2013).

Study 2 built on RMT (La Guardia, 2008) to better understand how dating app use is related to sexual satisfaction among dating app users with different motivations. This study only found evidence for the relationship between one particular MV preference, i.e., social personality traits, and sexual satisfaction, specifically among people who have a high casual sex motivation to use dating apps. Such links were not found for individuals who had a committed relationship motivation or for the other MV preferences (i.e., social personality traits, physical attractiveness, resources). The aim of Study 3 was to investigate whether these (null) findings of Study 2 would be replicated in another study among a larger sample of dating app users and when using another outcome variable: need satisfaction with dating app matches. Consequently, we posed the following RQs:

RQ3–4 Does a committed relationship motivation (RQ3) and casual sex motivation moderate the relationships between biography-based/picture-based swiping and the MV preference for personality traits, resources, and physical attractiveness (RQ3a–RQ4a) and between these MV preferences and need satisfaction with matches (RQ3b–RQ4b)/sexual satisfaction (RQ3c–RQ4c).

Method

Participants

In July–September 2021, emerging adults who were currently using (a) dating app(s) were recruited via social media using different recruitment procedures.[5] The researchers recruited a convenience sample by sharing the link to the online survey on social media platforms. Additionally, Facebook and Instagram advertisements were used. Participants provided active consent. Of the 619 participants, 323 were part of the analytical sample. This sample size was based on prior cross-sectional dating app research (Konings et al., 2022; Schreurs et al., 2020; Timmermans et al., 2021). Additionally, an a-priori power analysis using G*power indicated that a minimum sample size of N = 311 was required to test the desired models with a small effect size of 0.02 (1 − ß = 0.80, α = 0.05). Participants were deleted if they did not provide consent, did not meet the eligibility criteria of being a current dating app user or age criteria ($n = 2$), or answered the attention check wrong. Participants had a mean age of 23.31 ($SD = 2.79$), 73.68% were women, and 73.21% were heterosexual. The study procedures, aims, and questionnaires were preregistered on OSF before starting the data collection. Before conducting the analyses, all hypotheses were pre-registered on OSF (https://osf.io/kzwvd/).

Measures

Sociodemographic Variables

Age, gender (0 = man, 1 = woman, 2 = X), relationship status (0 = single, 1 = committed relationship), and sexual orientation (1 = attracted to only men, 2 = merely attracted to men, but also to women, 3 = attracted to both men and women, 4 = merely attracted to women, but also to men, 5 = attracted to women, 6 = I don't want to tell this) (Kinsey et al., 1948; Peter & Valkenburg, 2011) were measured. A dichotomous variable was created for sexual orientation (0 = exclusively heterosexual and 1 = not exclusively heterosexual).

Intrinsic and Extrinsic Mate Value Preferences

As validated in Study 2, participants rated the importance of 19 characteristics in a partner on a scale from (1) *totally unimportant* to (10) *totally important* (Ha et al., 2010). PCA indicated the same factor structure as Study 2 (eigenvalue = 1.02, explained variance = 67.14%): i.e., the resource- (i.e., five items, eigenvalue = 1.02, explained variance = 6.00%, $\alpha = 0.88$), the physical attractiveness- (i.e., four items, eigenvalue = 1.20, explained variance = 7.03%, $\alpha = 0.81$), the social personality- (i.e., four items, eigenvalue = 6.61, explained variance = 38.86%, $\alpha = 0.78$) and the caring personality subscale (i.e., four items, eigenvalue = 2.59, explained variance = 15.25%, $\alpha = 0.83$). Four variables were created by averaging the items. Higher scores indicated higher attached importance to the MVs.

Sexual Satisfaction

Participants indicated how much they agreed on two items about their sexual satisfaction in the past six months on a scale from (1) *totally disagree* to (7) *totally agree* (Peter & Valkenburg, 2009). The two items were averaged, $r = 0.90$, $p < .001$, with higher scores indicating higher levels of sexual satisfaction.

[5] Note that the data collection occurred during the COVID-19 pandemic when the COVID-19 regulations were less severe. Specifically, people were allowed to do leisure and social activities and thus had to opportunity to meet people they met via a dating app.

Need Satisfaction with Matches

The Need Satisfaction scale (La Guardia et al., 2000) was applied so that it measured satisfaction with matches met via a dating app using six items such as "with the people/matches I met on (a) dating app(s), I feel loved". Answer options ranged from (1) *totally disagree* to (7) *totally agree*. PCA extracted one factor (eigenvalue = 2.90, explained variance = 48.38%, $\alpha = 0.77$). Items were averaged; higher scores indicated higher need satisfaction with matches.

Committed Relationship Motivation versus Casual Sex Motivation

Nine items such as "I use (a) dating app(s) to find a romantic relationship" (Sumter et al., 2017) were evaluated using answer options ranging from (1) *totally disagree* to (7) *totally agree*. PCA extracted a committed relationship motivation factor (eigenvalue = 3.75, explained variance = 41.67%) and a casual sex motivation factor (eigenvalue = 2.45, explained variance = 27.24%). One item, i.e., "I use (a) dating app(s) because it is an easy way to meet someone" was deleted due to a low factor loading. PCA was redone with the remaining eight items and revealed a committed relationship motivation factor (eigenvalue = 3.72, explained variance = 46.47%, $\alpha = 0.93$) and casual sex motivation factor (eigenvalue = 2.37, explained variance = 29.62%, $\alpha = 0.85$). Items for both subscales were averaged; higher scores indicated higher levels of seeking a relationship versus casual sex partner via dating apps.

Picture-Based Swiping

Participants were asked to think back about the profiles they encountered in the past six months when they were viewing profiles on (a) dating app(s). They were asked to indicate how many profiles they took the time to attentively look at how somebody looked in their pictures on a scale from (1) *no profile* to (7) *all profiles*. This score was weighted by multiplying it with users' frequency of dating app use in which participants indicated the frequency of their dating app use in the past six months on a scale from (1) *almost never* to (7) *multiple times a day* (Sumter et al., 2017).

Biography-Based Swiping

Participants reflected on the profiles they encountered in the past six months when they were viewing profiles on (a) dating app(s). They indicated how many profiles they took the time to attentively read an individual's biography or other information on a scale from (1) *no profile* to (7) *all profiles*. This score was weighted by multiplying it by users' frequency of dating app use in the past six months (Sumter et al., 2017).

Analytical Strategy

Zero-order correlations, descriptive statistics, and MANOVA were conducted. Skewness (< 3) and kurtosis (< 10) indicated a non-normal distribution of the caring personality subscale. Therefore, bootstrapping was applied (5,000 samples) when testing the model (Kline, 2011) and bootstrapped confidence intervals are reported. As Hayes Process Macro does not allow to model moderated relations on multiple independent and dependent variables, different models were run. Model 1 tested the main hypotheses regarding the relationships between picture-based swiping, MV preferences, and need satisfaction (Model 1a) using Model 4 in Hayes Process Macro. The moderating roles of gender (Model 1b), a committed relationship motivation (Model 1c), and casual sex motivation (Model 1d) were tested using Model 59 in Hayes Process Macro (Hayes, 2013). Model 2a tested the relationships between biography-based swiping, MV preferences, and need satisfaction. Models 2b–d tested the three moderators under scrutiny and examined whether significant interaction terms emerged. Additional models were tested with sexual satisfaction as a dependent variable (Models 3a–d and Models 4a–d). All analyses controlled for relationship status, sexual orientation, and age. All data and syntaxes can be found on OSF. Tables with all non-significant findings can be found on OSF (https://osf.io/kzwvd/).

Results

Descriptive Statistics

Zero-order correlations and descriptive statistics can be found in Table 8. No gender differences were found with regards to picture-based swiping, $F(1, 284) = 3.13$, $p = .08$, biography-based swiping, $F(1, 284) = 2.90$, $p = .09$, need satisfaction, $F(1, 246) = 0.43$, $p = .51$, the MV preference for physical attractiveness, $F(1, 304) = 1.99$, $p = .16$. Gender differences were found for sexual satisfaction, $F(1, 304) = 6.46$, $p = .01$, ($M_{women} = 4.18$, $SD_{women} = 1.87$, $M_{men} = 3.54$, $SD_{men} = 2.02$), indicating that women were more satisfied with their sexual life than men. Women had a higher MV preference for caring personality traits, $F(1, 304) = 25.97$, $p < .001$, ($M_{women} = 8.98$, $SD_{women} = 0.73$, $M_{men} = 8.38$, $SD_{men} = 1.39$), social personality traits, $F(1, 304) = 10.07$, $p < .001$ ($M_{women} = 8.00$, $SD_{women} = 1.07$, $M_{men} = 7.50$, $SD_{men} = 1.54$), and resources, $F(1, 304) = 6.82$, $p = .01$, ($M_{women} = 5.73$, $SD_{women} = 1.80$, $M_{men} = 5.11$, $SD_{men} = 1.93$) than men.

Table 8 Descriptive statistics and zero-order correlations of Study 3

	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age	23.31 (2.79)	–													
2. Gender	.74 (.44)	−.17**	–												
3. Relationship status	.28 (.45)	.05	.09	–											
4. Sexual orientation	.27 (.44)	−.04	−.00	.10	–										
5. Sexual satisfaction	4.01 (1.93)	−.16*	.19**	.46***	−.01	–									
6. Need satisfaction	4.42 (1.12)	−.10	.04	.18**	−.10	.29***	–								
7. Importance of SPT	7.87 (1.23)	−.10	.18**	−.23***	−.18**	.05	.09	–							
8. Importance of CPT	8.77 (1.03)	−.14*	.26***	−.08	−.20**	.12	.10	.60***	–						
9. Importance of PA	6.74 (1.35)	−.04	−.10	−.12	−.23***	.07	.23***	.49***	.38***	–					
10. Importance of RE	5.57 (1.85)	−.06	.14*	−.10	−.22***	.05	.17***	.36***	.18**	.56***	–				
11. Biography-based swiping	16.13 (10.03)	.05	−.10	−.12	.07	−.22***	.09	−.10	−.05	−.07	.01	–			
12. Picture-based swiping	16.54 (9.51)	.03	−.11	−.18**	.09	−.22***	.09	−.02	−.01	.03	.02	.83***	–		
13. CRM	4.82 (1.60)	.14*	−.04	−.11	−.08	−.13*	.01	.03	.15*	.05	.14*	.21***	.16*	–	
14. CSM	2.52 (1.45)	−.05	−.31***	.07	.11	.15*	.12	.05	−.03	.18**	.05	−.06	.01	−.21**	

SPT = social personality traits, CPT = caring personality traits, PA = physical attractiveness, RE = resources, CMS = committed relationship motivation, casual sex motivation. * < .05, ** < .01, *** < .001

Model 1: Picture-Based Swiping, Mate Value Preferences, and Need Satisfaction

Results for the relationships between picture-based swiping, MV preferences, and need satisfaction can be found in Table 9. Contradicting H1a–c, picture-based swiping did not relate to the MV preference for social personality traits, caring personality traits, resources, or physical attractiveness. H3–4 could not be confirmed as the MV preference for social and caring personality traits and resources did not relate to need satisfaction. In contrast to the expected direction of the association of H5, the MV preference for physical attractiveness positively related to need satisfaction, $B = 0.18$, $SE = 0.07$, $t = 2.54$, $p = .01$.

Gender did not moderate the relationships between biography-based swiping and individuals' MV preferences (RQ1a), nor the relationships between the MV preferences and need satisfaction with matches (RQ1b, see Table S5 on (https://osf.io/kzwvd/)).

A committed relationship motivation did not moderate associations between picture-based swiping and the different MV preferences (RQ3a) nor between the different MV preferences and need satisfaction with matches (RQ3b, see Table S6 on (https://osf.io/kzwvd/)).

A casual sex motivation, however, moderated the positive associations between picture-based swiping and the MV preference for physical attractiveness, $B = 0.01$, $SE = 0.01$, $t = 2.51$, $p = .01$ (RQ4a). This positive relationship only existed among individuals who scored high on the motivation to use dating apps to find a casual sex partner but was non-existent among individuals scoring low on this motivation. A casual sex motivation did not moderate the relationships between picture-based swiping and the other MV preferences (i.e., for caring and social personality traits, resources). A casual sex motivation further moderated the associations between the MV preference for caring personality traits and need satisfaction with matches, $B = -0.13$, $SE = 0.06$, $t = -2.09$, $p = .04$, (RQ4b). The conditional relations revealed that these relationships were non-significant (see Table 10). This motivation did not serve as a moderator in the associations between the other MV preferences (i.e., social personality traits, resources, physical attractiveness) and need satisfaction with matches.

Model 2: Biography-Based Swiping, Mate Value Preferences, and Need Satisfaction

The results on the relationships between biography-based swiping, MV preferences, and need satisfaction can be found in Table 11. H2a–H2c could not be confirmed as biography-based swiping did not relate to the MV preference for caring/social personality, resources, or physical attractiveness. H3–4 could not be confirmed as the MV preference for social and

caring personality traits or resources did not relate to need satisfaction. The MV preference for physical attractiveness positively related to need satisfaction, $B = 0.20$, $SE = 0.07$, $t = 2.77$, $p = .01$ (contradicting H5).

Gender did not moderate the relationships between biography-based swiping and the different MV preferences (RQ1a) and between the different MV preferences and need satisfaction (RQ2b, see Table S7 on (https://osf.io/kzwvd/)).

A committed relationship motivation moderated the relationships between biography-based swiping and two MV preferences, i.e., caring personality traits, $B = 0.01$, $SE = 0.00$, $t = 2.20$, $p = .03$, and social personality traits, $B = 0.01$, $SE = 0.01$, $t = 2.47$, $p = .01$ (RQ3a). The conditional relationships revealed that negative relationships existed between biography-based swiping and the MV preference for social and caring personality traits, but only among individuals who scored low on the committed relationship motivation. The relationship between biography-based swiping and the MV preference for caring and social personality traits was non-existent among individuals scoring high on the committed relationship motivation. A committed relationship motivation did not moderate the relationships between biography-based swiping and the other MV preferences (i.e., resources, physical attractiveness), nor between the MV preferences (i.e., caring and social personality traits, resources, physical attractiveness) and need satisfaction with matches (RQ3b; see Table 12).

The casual sex motivation did not moderate the relationships between biography-based swiping and users' different MV preferences (i.e., caring and social personality traits, resources, physical attractiveness; RQ4a). This motivation only moderated the associations between the MV preference for caring personality traits and need satisfaction, $B = -0.15$, $SE = 0.06$, $t = -2.31$, $p = .02$ (RQ4b). Conditional relationships indicated that a negative association occurred among individuals who scored high on the motivation to use dating apps to find a casual sex partner but no significant relationships occurred among dating app users scoring low on the casual sex motivation (see Table 13). A casual sex motivation did further not moderate the relationships between the other MV preferences (i.e., social personality traits, resources, physical attractiveness) and need satisfaction with matches.

Model 3: Picture-Based Swiping, Mate Value Preferences, and Sexual Satisfaction

Picture-based swiping did not relate to the MV preference for social/caring personality traits, resources, or physical attractiveness (not supporting H1a–c). These different MV preferences did not relate to sexual satisfaction (not supporting H6a–c; see Table S8 on (https://osf.io/kzwvd/)).

Gender only moderated the association between picture-based swiping and the MV preference for caring personality traits, $B = -0.03$, $SE = 0.01$, $t = -2.55$, $p = .01$ (but not the other MV preferences). The conditional relationships revealed that the latter association was significant among men, $eff = 0.02$, $SE = 0.01$, $t = 2.19$, $p = .03$, but not among women, $eff = -0.01$, $SE = 0.01$, $t = -1.29$, $p = .20$ (RQ1a). Concerning RQ1c, gender moderated the association between the MV preference for resources and sexual satisfaction, $B = 0.34$, $SE = 0.15$, $t = 2.24$, $p = .03$. Yet, conditional relations revealed no relationships existed among men, $eff = -0.22$, $SE = 0.13$, $t = -1.67$, $p = .10$ or women, $eff = 0.13$, $SE = 0.08$, $t = 1.60$, $p = .11$. Gender did not moderate the associations between the other MV preferences (i.e., caring and social personality traits, physical attractiveness) and sexual satisfaction (see Table 14).

A committed relationship motivation did not moderate the relationships between picture-based swiping and the different MV preferences (RQ3a), or between the different MV preferences and sexual satisfaction (RQ3c; see Table S9 on (https://osf.io/kzwvd/)).

The casual sex motivation only moderated the positive relationships between picture-based swiping and the MV preference for physical attractiveness, $B = 0.00$, $SE = 0.01$, $t = 2.51$, $p = .01$. This association only existed among individuals who scored high on the motivation to use dating apps to find a casual sex partner but was non-existent among individuals scoring low on this motivation (RQ4a). The casual sex motivation did not moderate the associations between picture-based swiping and the other MV preferences (i.e., caring and social personality traits, resources). This motivation did further not moderate the relationships between the MV preference for caring/social personality traits, resources, and physical attractiveness on the one hand and sexual satisfaction on the other hand (RQ4c; Table 15).

Model 4: Biography-Based Swiping, Mate Value Preferences, and Sexual Satisfaction

H2a–c could not be confirmed as biography-based swiping did not relate to the different MV preferences. The MV preferences were not related to sexual satisfaction (contradicting H6a–c; see Table S10 on (https://osf.io/kzwvd/)).

As for RQ1a, gender did not moderate the relationships between biography-based swiping and MV preferences. Concerning RQ1c, gender moderated the relationships between the MV preference for resources and sexual satisfaction, $B = 0.36$, $SE = 0.15$, $t = 2.38$, $p = .02$. Yet, the conditional relations revealed that this correlation was not significant among men $eff = -0.21$, $SE = 0.13$, $t = -0.1.66$, $p = .10$ or women, $eff = 0.15$, $SE = 0.08$, $t = 1.87$, $p = .06$. Gender did not moderate the relationships between the other MV preferences

Table 9 Results of the relationships between picture-based swiping, MV preferences, and need satisfaction of Study 3

	Importance of SPT		Importance of CPT		Importance of PA		Importance of RE		Need satisfaction	
	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI
Constant	9.20 (.61)***	[7.82; 10.67]	10.12 (.52)***	[8.83; 11.66]	7.48 (.67)***	[6.04; 8.93]	6.80 (.98)**	[4.74; 8.78]	3.56 (.96)**	[1.62; 5.32]
PB-swiping	− .01 (.01)	[− .02; .01]	.00 (.01)	[− .01; .01]	.00 (.01)	[− .01; .02]	.00 (.01)	[− .02; .03]	.02 (.01)*	[.00; .03]
Relationship status	− .58 (.17)**	[− .96; .23]	− .13 (.15)	[− .48; .18]	− .25 (.19)	[− .63; .13]	− .29 (.28)	[− .81; .25]	.65 (.17)***	[.32; .97]
Age	− .04 (.03)	[− .10; .02]	− .05 (.02)	[− .11; .01]	− .02 (.03)	[− .08; .36]	− .04 (.04)	[− .12; .05]	− .04 (.02)	[− .09; .01]
Sexual orientation	− .41 (.16)	[− .76;. − .07]	− .43 (.14)**	[− .77; − .11]	− .63 (.18)***	[− 1.02; − .25]	− .91 (.26)***	[− 1.43; − .39]	− .20 (.16)	[− .52; .12]
Importance of SPT									.00 (.08)	[− .15; .16]
Importance of PA									.18 (.07)*	[.03; .34]
Importance of RE									.03 (.05)	[− .06; .12]
Importance of CPT									.00 (.09)	[− .17; .17]
Model	$R = .25, R^2 = .06$	$F(4, 241) = 4.04, p < .001$	$R = .25, R^2 = .06$	$F(4, 241) = 4.04, p < .001$	$R = .25, R^2 = .06$	$F(4, 241) = 4.04, p$.<.001	$R = .24, R^2 = .06$	$F(4, 241) = 3.75, p = .01$	$R = .36, R^2 = .13$	$F(8, 237) = 4.52, p < .001$

SPT = social personality traits, CPT = caring personality traits, PA = physical attractiveness, RE = resources, PB − swiping = picture − based swiping. * < .05, ** < .01, *** < .001. 95% CI represent the bootstrapped CI

Table 10 Results of the moderating role of a casual sex motivation in the relationships between picture-based swiping, MV preferences, and need satisfaction of Study 3

	Importance of CPT		Importance of SPT		Importance of PA		Importance of RE		Need satisfaction	
	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI
Constant	1.26 (.51)*	[.03; 2.84]	1.08 (.61)	[−.27;2.60]	.68 (.64)	[−.65; 2.10]	1.21 (.98)	[−.81;3.20]	5.07 (.59)***	[3.90; 6.269]
PB − swiping	−.00 (.01)	[−.02; .01]	−.01 (.01)	[−.02; .01]	.00 (.01)	[−.01; .02]	.00 (.01)	[−.02; .03]	.02 (.01)*	[.00; .03]
CSM	−.01 (.04)	[−.04; .17]	.06 (.05)	[−.04; .17]	.18 (.05)*	[.06; .29]	.09 (.08)	[−.09; .27]	.06 (.05)	[−.17; .18]
PB-swiping X CSM	.00 (.00)	[−.00; .01]	.00 (.01)	[−.01; .01]	.01 (.01)*	[.00; .02]	.01 (.01)	[−.01;.02]	−.00 (.00)	[−.01; .00]
Sexual orientation	−.16 (.15)**	[−.81; −.12]	−.43 (.17)*	[−.80; −.07]	−.75 (.18)***	[−1.45; −.38]	−.91 (.27)***	[−1.45; −.38]	−.24 (.16)	[−.57; .09]
Age	−.05 (.03)*	[−.11; .00]	−.04 (.03)	[−.10; .02]	−.02 (.03)	[−.12; .05]	−.04 (.04)	[−.12; .05]	−.03 (.02)	[−.08; .02]
Relationship status	−.16 (.15)	[−.53;.16]	−.64 (.18)**	[−1.03; −.27]	−.34 (.19)	[−.84; .20]	−.31 (.28)	[−.84; .20]	.58 (.17)***	[.27; .92]
Importance of CPT									−.02 (.09)	[−.17; .18]
Importance of CPT × CSM									−.13 (.06)*	[−.26; −.03]
Importance of SPT									.01 (.08)	[−.15; .16]
Importance of SPT × CSM									.09 (.06)	[−.02; .18]
Importance of PA									.16 (.08)*	[−.02; .32]
Importance of PA × CSM									−.01 (.05)	[−.12; .08]
Importance of RE									.03 (.05)	[−.06; .13]
Importance of RE × CSM									−.06 (.03)*	[−.11; .00]
Model	$R = .26$, $R^2 = .07$	$F(6, 235) = 2.91$, $p = .01$	$R = .31$, $R^2 = .10$	$F(6, 235) = 4.17$, $p < .001$	$R = .38$, $R^2 = .14$	$F(6, 235) = 6.41$, $p < .001$	$R = .25$, $R^2 = .06$	$F(6, 235) = 2.64$, $p = .02$	$R = .41$, $R^2 = .17$	$F(14, 227) = 3.29$, $p < .001$

PB-swiping = picture − based swiping, SPT = social personality traits, CPT = caring personality traits, PA = physical attractiveness, RE = resources, CSM = casual sex motivation* < .05, ** < .01, *** < .001. 95% CI represent the bootstrapped CI

Table 11 Results of the relationships between biography-based swiping, MV preferences, and need satisfaction of Study 3

	Importance of SPT		Importance of CPT		Importance of PA		Importance of RE		Need satisfaction	
	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI
Constant	9.28 (.61)***	[7.96; 10.84]	10.16 (.51)***	[8.86; 11.74]	7.63 (.67)***	[6.24; 9.16]	6.82 (.98)**	[4.77; 8.89]	3.50 (.96)***	[1.65; 5.36]
Bio-swiping	− .01 (.01)	[− .03; .00]	− .00 (.01)	[− .02; .01]	.00 (.01)	[− .02; .01]	.00 (.01)	[− .02; .02]	.02 (.01)*	[.00; .03]
Relationship status	− .61 (.17)***	[− .97; − .24]	− .14 (.14)*	[− .50; .18]	− .29 (.27)*	[− .68; .08]	− .29 (.27)	[− .82; .25]	.64 (.17)***	[.32; .97]
Age	− .04 (.03)	[− .10; .02]	− .05 (.02)	[− .11; .00]	− .02 (.03)	[− .08; .04]	− .04 (.04)	[− .13; .04]	− .04 (.02)	[− .09; .01]
Sexual orientation	− .40 (.16)*	[− .76; − .06]	− .42 (.14)**	[− .76; − .12]	− .61 (.18)***	[− .99; − .23]	− .90 (.26)***	[− 1.41; .40]	− .18 (.16)	[− .51; .14]
Importance of SPT									.01 (.08)	[− .15; .17]
Importance of PA									.20 (.07)**	[.05; .35]
Importance of RE									.02 (.05)	[− .07; .12]
Importance of CPT									− .00 (.09)	[− .17; .16]
Model	$R = .31$, $R^2 = .10$	$F(4, 241) = 6.42$, $p < .001$	$R = .25$, $R^2 = .06$	$F(4, 241) = 4.15$, $p < .001$	$R = .26$, $R^2 = .07$	$F(4, 241) = 4.25$, $p < .001$	$R = .24$, $R^2 = .060$	$F(4, 241) = 3.74$, $p = .01$	$R = .37$, $R^2 = .13$	$F(8, 237) = 1.12$, $p < .001$

SPT = social personality traits, CPT = caring personality traits, PA = physical attractiveness, RE = resources, bio-swiping = biography-based swiping. * < .05, ** < .01, *** < .001. 95% CI represent the bootstrapped CI

Table 12 Results of the moderating role of a committed relationship motivation in the relationships between biography-based swiping, MV preferences, and need satisfaction of Study 3

	Importance of CPT		Importance of SPT		Importance of PA		Importance of RE		Need satisfaction	
	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI
Constant	1.26 (.51)*	[.06; 2.48]	.91 (.61)	[−.38;2.25]	.74 (.68)	[−.64; 2.10]	1.50 (.99)	[−.63;3.54]	5.25 (.60)***	[3.96; 6.40]
Bio-swiping	−.01 (.01)	[−.03; .01]	−.02 (.01)*	[−.04; .00]	−.01 (.01)	[−.03; .01]	−.00 (.01)	[−.03; .03]	.01 (.01)	[.00; .03]
CRM	.11 (.04)**	[.00; .23]	.03 (.05)	[−.08; .14]	.03 (.05)	[−.10; .16]	.16 (.08)*	[−.00; .31]	.02 (.05)	[−.08; .11]
Bio-swiping × CRM	.01 (.00)*	[−.00; .02]	.01 (.00)*	[−.00; .03]	.00 (.01)	[−.01; .02]	.00 (.01)	[−.02;.02]	.01 (.01)	[−.00; .02]
Sexual orientation	−.39 (.14)**	[−.69; −.09]	−.37 (.16)*	[−.69; −.03]	−.63 (.18)***	[−.99; −.24]	−.82 (.26)**	[−1.35; −.30]	−.16 (.17)	[−.48; .15]
Age	−.05 (.02)*	[−.10; .00]	−.03 (.03)	[−.09; .03]	−.02 (.03)	[−.08; .04]	−.05 (.04)	[−.14; .04]	−.04 (.03)	[−.09; .01]
Relationship status	−.12 (.14)	[−.44;.18]	−.60 (.17)***	[−.93; −.26]	−.35 (.19)	[−.71; .03]	−.25 (.27)	[−.78; .27]	.63 (.17)***	[.29; .94]
Importance of CPT									.02 (.10)	[−.19; .20]
Importance of CPT × CRM									.05 (.06)	[−.06;.26]
Importance of SPT									.00 (.08)	[−.17; .18]
Importance of SPT × CRM									−.03 (.06)	[−.14; .09]
Importance of PA									.20 (.08)*	[.03; .36]
Importance of PA × CRM									.00 (.04)	[−.09; .08]
Importance of RE									.02 (.05)	[−.08; .12]
Importance of RE × CRM									.03 (.03)	[−.03; .11]
Model	$R = .34$, $R^2 = .12$	$F(6, 235) = 4.98$, $p < .001$	$R = .35$, $R^2 = .12$	$F(6, 235) = 5.41$, $p < .001$	$R = .28$, $R^2 = .08$	$F(6, 235) = 3.32$, $p < .001$	$R = .27$, $R^2 = .07$	$F(6, 235) = 3.20$, $p = .01$	$R = .39$, $R^2 = .15$	$F(14, 227) = 2.88$, $p < .001$

Bio-swiping = biography-based swiping, SPT = social personality traits, CPT = caring personality traits, PA = physical attractiveness, RE = resources, CRM = committed relationship motivation* < .05, ** < .01, *** < .001. 95% CI represent the bootstrapped CI

Table 13 Results of the moderating role of a casual sex motivation in the relationships between biography-based swiping, MV preferences, and need satisfaction of Study 3

	Importance of CPT		Importance of SPT		Importance of PA		Importance of RE		Need satisfaction	
	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI
Constant	1.24 (.51)*	[−.01; 2.66]	1.06 (.61)	[−.27;2.50]	.63 (.65)	[−.71; 2.00]	1.23 (.98)	[−.81;3.26]	5.08 (.59)***	[3.88; 6.27]
Bio-swiping	−.00 (.01)	[−.02; .01]	−.01 (.01)*	[−.03; .00]	−.00 (.01)	[−.02; .02]	.00 (.01)	[−.02; .03]	.02 (.01)**	[.01; .03]
CSM	−.01 (.04)	[−.01; .08]	.06 (.05)	[−.04; .17]	.18 (.05)***	[.06; .29]	.10 (.08)	[−.08; .28]	.06 (.05)	[−.03; .18]
Bio-swiping × CSSM	.01 (.00)	[−.00; .02]	−.00 (.01)	[−.01; .01]	.01 (.01)	[−.00; .02]	−.00 (.01)	[−.02;.01]	.00 (.01)	[−.01; .01]
Sexual orientation	−.43 (.14)**	[−.80; −.12]	−.42 (.17)*	[−.78; −.05]	−.71 (.18)***	[−1.09; −.32]	−.90 (.27)***	[−1.43; −.37]	−.24 (.16)	[−.57; .07]
Age	−.05 (.02)*	[−.11; .01]	−.03 (.03)	[−.10; .02]	−.01 (.03)	[−.07; .04]	−.04 (.04)	[−.12; .05]	−.03 (.02)	[−.08; .02]
Relationship status	−.17 (.15)	[−.54;.16]	−.65 (.17)***	[−1.03; −.27]	−.38 (.18)*	[−.75; −.01]	−.33 (.28)	[−.85; .21]	.57 (.17)***	[.26; .94]
Importance of CPT									−.04 (.09)	[−.20; .15]
Importance of CPT × CSM									−.15 (.06)*	[−.27; −.04]
Importance of SPT									.03 (.08)	[−.12; .20]
Importance of SPT × CSM									.10 (.06)	[.00; .20]
Importance of PA									.16 (.08)*	[−.01; .33]
Importance of PA × CSM									−.02 (.05)	[−.13; .07]
Importance of RE									.03 (.05)	[−.07; .12]
Importance of RE × CSM									−.05 (.03)	[−.11; .00]
Model	$R = .28$, $R^2 = .08$	$F(6, 235) = 3.25$, $p = .00$	$R = .32$, $R^2 = .10$	$F(6, 235) = 4.53$, $p < .001$	$R = .36$, $R^2 = .13$	$F(6, 235) = 5.98$, $p < .001$	$R = .25$, $R^2 = .06$	$F(6, 235) = 2.57$, $p = .02$	$R = .41$, $R^2 = .17$	$F(14, 227) = 3.37$, $p < .001$

Bio-swiping = biography-based swiping, SPT = social personality traits, CPT = caring personality traits, PA = physical attractiveness, RE = resources, CSM = casual sex motivation* < .05, ** < .01, *** < .001. 95% CI represent the bootstrapped CI

(i.e., caring/social personality traits and physical attractiveness) and sexual satisfaction (Table 16).

The committed relationship motivation moderated the relationships between biography-based swiping and the MV preference for caring personality traits, $B = 0.01$, $SE = 0.00$, $t = 2.20$, $p = .03$, and social personality traits, $B = 0.12$, $SE = 0.00$, $t = 2.47$, $p = .01$ (RQ3a). The conditional relationships revealed that the negative associations between biography-based swiping and the MV preference for these personality traits only existed among individuals who scored low on the motivation to use dating apps to find a committed relationship. This motivation did not moderate the relationships between biography-based swiping and the MV preference for resources or physical attractiveness (RQ3a), or between individuals' MV preferences for caring/social personality traits, resources, or physical attractiveness and sexual satisfaction (RQ3c; see Table 17).

The casual sex motivation did not moderate the relationships between biography-based swiping and the different MV preferences (RQ4a) or between these MV preferences and sexual satisfaction (RQ4c, see Table S11 on (https://osf.io/kzwvd/)).

Discussion

Several conclusions can be drawn based on the results of Study 3. First, in contrast to our expectations based on sexual script theory (Simon & Gagnon, 1984, 1987), the type of swiping behavior under consideration (i.e., picture-, and biography-based swiping) was not associated with dating app users' MV preferences when we considered the full sample of dating app users. Such relationships only existed when we considered dating app users' committed relationship or casual sex motivation.

Second, in contrast to the assumptions we built based on theories such as RMT (La Guardia, 2008; La Guardia et al., 2000) and related literature (Rodriguez et al., 2015; Sheldon, 2007), Study 3 mostly found no evidence for the associations between MV preferences and individuals' need satisfaction with matches. Two exceptions existed related to this finding. When considering the full sample of dating app users, positive links (instead of negative links) emerged between the MV preference for physical attractiveness and need satisfaction with matches in Model 2. Additionally, negative associations emerged between the MV preference for caring personality traits and need satisfaction with matches in Model 2, but only among individuals with a high casual sex motivation.

No links were found between MV preferences and sexual satisfaction among the general sample of dating app users. This finding largely replicates the findings of Study 2. Even when considering individuals' motivations to use dating apps to find a committed relationship versus a casual sex partner, no conditional relationships were found between individuals' MV preferences and sexual satisfaction.

Additionally, Study 3 showed that the null findings were largely similar between men and women as gender was not found to be a significant moderator. Note that gender moderated the relations between picture-based swiping and attaching importance to caring traits, but only in Model 3.

General Discussion

Summary of the Findings

Although dating apps are popular among emerging adults (Vogels & McClain, 2023), little was known about the role of intrinsic versus extrinsic MVs in dating apps. The current set of studies contributed to addressing this gap in the research field. Study 1 examined the prevalence of the intrinsic MV of personality traits and the extrinsic MVs of resources and physical attractiveness on Tinder via a content analysis (Study 1). Additionally, two cross-sectional studies examined (1) the relationships between dating app use (and swiping behaviors), MV preferences, and sexual satisfaction (Study 2) and (2) the role of different types of swiping behaviors in MV preferences, sexual satisfaction and need satisfaction with matches (Study 3). Several conclusions can be derived from the findings.

Study 1 showed that various features on dating apps are used to present different MVs. Pictures, which seem to be more frequently used on popular dating apps (i.e., Tinder), especially highlight physical attractiveness. Because of this dominant focus on physical attractiveness, sexual script theory (Simon & Gagnon, 1984) would expect that dating app use (and especially dating app use that focuses on this MV) may relate to adopting a MV preference accordingly. Yet, Studies 2–3 seem to suggest that a dominant focus of physical attractiveness in the most prominently used feature on dating apps (i.e., pictures) did not relate to individuals' MV preferences for physical attractiveness when considering the full sample of dating app users.

Similar results were found for other MVs: i.e., resources and personality traits. Although these MVs especially prevailed in Tinder users' biographies according to Study 1, different types of dating app behaviors did not seem to relate to the MV preferences for personality traits and resources when the full sample of dating app users was considered. We found that the general frequency of dating app use/swiping frequency (i.e., Study 2) did not relate to valuing personality traits or resources. Similarly, for Study 3, biography-based swiping did not positively relate to these MV preferences and picture-based swiping did not negatively relate to the

Table 14 Results of the moderating role of gender in the relationships between picture-based swiping, MV preferences, and sexual satisfaction of Study 3

	Importance of SPT		Importance of CPT		Importance of PA		Importance of RE		Sexual satisfaction	
	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI
Constant	.27 (.61)	[−.93; 1.51]	.25 (.49)	[−.82; 1.41]	.62 (.69)	[−.67; 1.95]	.18 (.97)	[−1.74; 2.07]	4.98 (.88)**	[3.08; 6.75]
PB-swiping	.01 (.01)	[−.01; .04]	.02 (.01)*	[.00; .05]	.03 (.02)	[−.00; .06]	.01 (.01)	[−.04; .05]	−.03 (.02)	[−.07; .01]
Gender	.47 (.16)***	[.13; .79]	.63 (.13)***	[.32;.95]	−.21 (.18)	[−.59; .17]	.61 (.25)*	[.10; 1.10]	.59 (.27)*	[.08; 1.15]
PB-swiping × gender	−.02 (.02)	[−.05; .01]	−.03 (.01)*	[−.06;−.01]	−.03 (.02)	[−.07;.01]	−.01 (.03)	[−.07;.04]	−.00 (.02)	[−.05; .04]
Relationship status	−.50 (.16)***	[−.85;−.17]	−.19 (.13)	[−.48;.09]	−.12 (.18)	[−.47; .22]	−.23 (.25)	[−.71;.26]	2.04 (.23)***	[1.60; 2.44]
Age	−.02 (.02)	[−.07; 04]	−.03 (.02)	[−.08;.02]	−.01 (.03)	[−.07; .04]	−.01 (.04)	[−.09; .06]	−.09 (.04)**	[−.16;−.01]
Sexual orientation	−.47 (.15)***	[−.79;−.15]	−.38 (.12)***	[−.67;−.10]	−.72 (.17)***	[−1.10;−.34]	−.89 (.24)***	[−1.38;−.42]	−.09 (.23)	[−.53; .37]
Importance of CPT									.25 (.23)	[−.44; .68]
Importance of CPT × gender									−.11 (.29)	[−.64; .64]
Importance of SPT									−.29 (.24)	[−.83; .20]
Importance of SPT × gender									.35 (.27)	[−.20; .96]
Importance of PA									.28 (.20)	[−.08; .77]
Importance of PA × gender									−.20 (.23)	[−.75; .23]
Importance of RE									−.22 (.13)	[−.50; .02]
Importance of RE × gender									.34 (.15)	[.06; 67]
Model	$R = .32$, $R^2 = .10$	$F(6, 277) = 5.27$, $p < .001$	$R = .38$, $R^2 = .14$	$F(6, 277) = 7.59$, $p < .001$	$R = .29$, $R^2 = .08$	$F(6, 277) = 3.58$, $p < .001$	$R = .26$, $R^2 = .07$	$F(6, 277) = 3.42$, $p < .001$	$R = .57$, $R^2 = .32$	$F(14, 269) = 9.17$, $p < .001$

PB-swiping = picture-based swiping, SPT = social personality traits, CPT = caring personality traits, PA = physical attractiveness, RE = resources * < .05, ** < .01, *** < .001. 95% CI represent the bootstrapped CI

Table 15 Results of the moderating role of a casual-sex motivation in the relationships between picture-based swiping, MV preferences, and sexual satisfaction of Study 3

	Importance of SPT		Importance of CPT		Importance of PA		Importance of RE		Sexual satisfaction	
	B(SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B(SE)	95%CI	B (SE)	95%CI
Constant	1.08 (.61)	[−.29; 2.59]	1.26 (.51)*	[.01; 2.78]	.68 (.64)	[−.69; 2.09]	1.21 (.98)	[−.83; 3.19]	5.73 (.90)***	[3.83; 7.60]
PB-swiping	−.01 (.01)	[−.02; .01]	−.00 (.01)	[−.01; .01]	.00 (01)	[−.01; .02]	.00 (.01)	[−.02; .03]	−.02 (.01)	[−.05; .00]
CSM	.06 (.05)	[−.04; .17]	−.01 (.04)	[−.10; .09]	.18 (.05)**	[.06; .29]	.09 (.08)	[.08; .28]	.05 (.08)	[−.03; .32]
CSM × PB-swiping	.00 (.01)	[−.01; .01]	.00 (.00)	[−.00; .01]	.01 (.01)*	[−.01; .02]	.01 (.01)	[−.01; .02]	.00 (.00)	[−.02; .02]
Relationship status	−.64 (.18)***	[−1.03; −.09]	−.15 (.15)	[−.52; .16]	−.34 (.19)	[−.73; .04]	−.31 (.28)	[−.85; .22]	1.99 (.26)***	[1.50; 2.50]
Age	−.04 (.03)	[−.10 .02]	−.05 (.02)*	[−.11; −.01]	−.02 (.03)	[−.08; .04]	−.04 (.04)	[−.12; .02]	−.09 (.04)*	[−.17; −.01]
Sexual orientation	−.43 (.17)*	[−.82; −.09]	−.44 (.14)**	[−.83; −.11]	−.75 (.18)***	[−1.14; −.36]	−.90 (.27)**	[−1.45; −1.38]	−.16 (.25)	[−.66; .34]
Importance of SPT									.04 (.13)	[−.20; .31]
Importance of CSM × RS									−.09 (.09)	[−.26; .10]
Importance of PA									.03 (.12)	[−.20; .27]
Importance of PA × CSM									−.04 (.07)	[−.20; .11]
Importance of RE									.02 (.07)	[−.11; .17]
Importance of RE × CSM									−.04 (.05)	[−.14; .07]
Importance of CPT									.16 (.14)	[−.13; .41]
Importance of CPT × CSM									.01 (.10)	[−.19; .21]
Model	$R = .31$, $R^2 = .10$	$F(6, 235) = 4.17$, $p < .001$	$R = .26$, $R^2 = .07$	$F(6, 235) = 3.91$, $p < .01$	$R = .38$, $R^2 = .14$	$F(6, 235) = 6.41$, $p < .001$	$R = .25$, $R^2 = .06$	$F(6, 235) = 2.64$, $p = .02$	$R = .55$, $R^2 = .30$	$F(14, 227) = 7.08$, $p < .001$

SPT = social personality traits, CPT = caring personality traits, PA = physical attractiveness, RE = resources, PB-swiping = picture-based swiping, CSM = casual sex motivation. * < .05, ** < .01, *** < .001. 95% CI represent the bootstrapped CI

Table 16 Results of the moderating role of gender in the relationships between biography-based swiping, MV preferences, and sexual satisfaction of Study 3

	Importance of SPT		Importance of CPT		Importance of PA		Importance of RE		Sexual satisfaction	
	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI
Constant	.40 (.61)	[−.89; 1.72]	.32 (.50)	[−.89; 1.66]	.86 (.70)	[−.50; 2.30]	.47 (.98)	[−1.51; 2.35]	4.98 (.89)***	[3.13; 6.79]
Bio-swiping	−.01 (.01)	[−.04; .02]	.01 (.01)	[−.03; .04]	−.01 (.02)	[−.05; .03]	−.02 (.02)	[−.06; .03]	−.04 (.02)	[−.08; .00]
Gender	.42 (.16)**	[.11; .74]	.60 (.13)***	[.31;.90]	−.28 (.18)	[−.66; .08]	.56 (.25)*	[.04; 1.07]	.55 (.26)*	[.06; 1.12]
Bio-swiping × gender	.01 (.02)	[−.03; .04]	−.01 (.01)	[−.05; .03]	.01 (.02)	[−.04;.05]	.03 (.02)	[−.03;.08]	.00 (.02)	[−.05; .05]
Relationship status	−.52 (.16)***	[−.86; −.19]	−.20 (.13)	[−.50;.07]	−.15 (.18)	[−.53; .22]	−.22 (.25)	[−.71;.26]	2.04 (.23)***	[1.62; 2.45]
Age	−.02 (.02)	[−.08; .04]	−.03 (.02)	[−.08;.02]	−.02 (.03)	[−.08; .04]	−.03 (.04)	[−.10; .05]	−.09 (.04)*	[−.16; −.01]
Sexual orientation	−.45 (.15)***	[−.78; −.13]	−.37 (.12)***	[−.66; −.10]	−.70 (.17)***	[−1.07; −.33]	−.89 (.24)***	[−1.36; −.41]	−.09 (.23)	[−.51; .38]
Importance of CPT									.28 (.23)	[−.40; .72]
Importance of CPT × gender									−.14 (.29)	[−.68; .61]
Importance of SPT									−.32 (.24)	[−.88; .17]
Importance of SPT × gender									.37 (.27)	[−.17; .96]
Importance of PA									.23 (.19)	[−.13; .73]
Importance of PA × gender									−.17 (.23)	[−.72; .26]
Importance of RE									−.21 (.13)	[−.49; .02]
Importance of RE × gender									.36 (.15)*	[.07; 69]
Model	$R = .32$, $R^2 = .10$	$F(6, 277) = 5.19$, $p < .001$	$R = .35$, $R^2 = .13$	$F(6, 277) = 6.62$, $p < .001$	$R = .27$, $R^2 = .07$	$F(6, 277) = 3.58$, $p < .001$	$R = .27$, $R^2 = .07$	$F(6, 277) = 3.64$, $p < .001$	$R = .58$, $R^2 = .34$	$F(14, 269) = 9.69$, $p < .001$

Bioswiping = biography-based swiping, SPT = social personality traits, CPT = caring personality traits, PA = physical attractiveness, RE = resources * < .05, ** < .01, *** < .001. 95% CI represent the bootstrapped CI

Table 17 Results of the moderating role of a committed relationship motivation in the relationships between biography-based swiping, MV preferences, and sexual satisfaction of Study 3

	Importance of SPT				Importance of PA		Importance of RE		Sexual satisfaction	
	B(SE)	95%CI	B(SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI	B (SE)	95%CI
Constant	.91 (.61)	[−.40; 2.21]	1.26 (.51)*	[.09; 2.44]	.74 (.68)	[−.64; 2.05]	1.50 (.99)	[−.56; 3.48]	5.79 (.93)***	[3.71; 7.69]
Bio-swiping	−.02 (.01)*	[−.04; .02]	−.01 (.01)	[−.03; .01]	−.01 (.01)	[−.03; .01]	−.00 (.01)	[−.03; .03]	−.03 (.01)*	[−.04; −.00]
CRM	.03 (.05)	[−.08; .14]	.11 (.03)**	[.00;.23]	−.03 (.05)	[−.10; .15]	.16 (.08)*	[.00; .31]	−.05 (.07)	[−.19; .08]
Bio-swiping × CRM	.01 (.00)*	[−.00; .03]	.01 (.00)*	[−.00; .02]	.00 (.01)	[−.01;.02]	.00 (.01)	[−.02;.02]	.00 (.01)	[−.01; .02]
Relationship status	−.60 (.17)***	[−.94; −.27]	−.12 (.14)	[−.43;.19]	−.35 (.19)***	[−.71; −.01]	−.25 (.28)	[−.78;.27]	2.09 (.26)***	[1.62; 2.55]
Age	−.02 (.02)	[−.09; .03]	−.05 (.02)*	[−.10;.00]	−.02 (.03)	[−.08; .04]	−.05 (.04)	[−.14; .04]	−.10 (.04)*	[−.18; −.01]
Sexual orientation	−.37 (.16)*	[−.71; −.04]	−.39 (.14)***	[−.7.; −.10]	−.63 (.18)***	[−1.00; −.24]	−.82 (.26)**	[−1.33; −.30]	−.09 (.25)	[−.55; .41]
Importance of CPT									.15 (.15)	[−.17; .43]
Importance of CPT × CRM									−.05 (.09)	[−.19; .22]
Importance of SPT									.04 (.12)	[−.22; .30]
Importance of SPT × CRM									.03 (.09)	[−.12; .21]
Importance of PA									.04 (.12)	[−.19; .30]
Importance of PA RS									−.02 (.07)	[−.15; .11]
Importance of RE									.05 (.08)	[−.11; .20]
Importance of RE × CRM									.01 (.04)	[−.07; .09]
Model	$R = .35$, $R^2 = .12$	$F(6, 235) = 5.41$, $p < .001$	$R = .34$, $R^2 = .11$	$F(6, 235) = 4.98$, $p < .001$	$R = .28$, $R^2 = .08$	$F(6, 235) = 3.32$, $p < .001$	$R = .27$, $R^2 = .07$	$F(6, 235) = 3.01$, $p < .001$	$R = .53$, $R^2 = .28$	$F(14, 227) = 6.43$, $p < .001$

Bio-swiping = biography-based swiping, SPT = social personality traits, CPT = caring personality traits, PA = physical attractiveness, RE = resources, CRM = committed relationship motivation* < .05, ** < .01, *** < .001. 95% CI represent the bootstrapped CI

MV preference for personality traits/ resources in a potential partner.

Several explanations may also exist for all these non-significant findings. First, Studies 2–3 focused on swiping behaviors. Potentially, a double dose effect may exist in which a combination of swiping together with other dating app behaviors to establish connections with matches (i.e., chat conversations) should be considered. Chat conversations can revolve around different or similar MVs than those observed in someone's profile (Wu & Ward, 2020). Future research may examine if a combination of behaviors on dating apps that focus on a particular MV (i.e., appearance-based chatting and picture-based swiping that both focus on physical attractiveness) relates to individuals' MV preferences.

Second, although Study 1 suggested that different dating app features are used to showcase specific MVs, it remains unclear whether dating app users consciously pay attention to these portrayals when swiping. For instance, certain users may use a "shotgun approach" in which they swipe right on every profile they encounter (LeFebre, 2018). Therefore, certain users may swipe at other users' pictures without being aware of the MVs that are showcased. Future research may use other methods such as eye-tracking research to capture to what extent individuals are paying attention to biographies versus pictures.

Finally, the relationships between different swiping behaviors and dating app users' MV preferences may only exist among certain subgroups. Study 3 provided some evidence for this reasoning and highlighted that the extent to which users used dating apps to find a committed relationship should be considered to understand the links between biography-based swiping and (long-term) MV preferences, i.e., caring and social personality traits (Jonason et al., 2013; Li, 2007). In this regard, Study 3 found evidence for the existence of negative associations between these variables, but only among dating app users with a low motivation to use dating apps to find a committed relationship. Similarly, individuals' casual sex motivation should be considered when considering the links between picture-based swiping and (short-term) MV preferences, i.e., physical attractiveness (Li, 2007). Positive associations emerged between these variables, but only among individuals with a high casual sex motivation to use dating apps. These findings align with our expectations derived from sexual script theory (Simon & Gagnon, 1984, 1987) in which individuals learn about the importance of certain MVs that are highlighted in the textual versus visual features of dating apps. These links were strengthened by a predisposition for different MV preferences based on a committed relationship versus casual sex motivation (Jonason et al., 2013; Li, 2007).

An alternative explanation may be that dating app users adopt a non-compensatory mating strategy (Brandner et al., 2020; Lenton & Stewart, 2008). Because of an overload of choices of potential partners on dating apps, dating app users may rely more heavily on observable MVs (i.e., extrinsic MVs such as physical attractiveness) compared to hard-to-observe MVs (e.g., intrinsic MVs such as personality traits). This non-compensatory mating strategy especially seemed to emerge among individuals with a casual sex motivation who adopted a picture-based swiping procedure according to the findings of Study 3.

The Role of Mate Values in Sexual Satisfaction and Need Satisfaction with Matches

Both Studies 2 and 3 could not find relationships between MV preferences and sexual satisfaction when considering a general sample of dating app users. Study 3 added whether links may exist between MV preferences and need satisfaction with matches among a general sample of dating app users. Yet, such links were largely not supported. One exception was the positive association that emerged between valuing physical attractiveness and need satisfaction. The null findings and latter described significant relationship contradicts prior studies which revealed links between objectifying a partner and lower satisfaction (Zurbriggen et al., 2011) and also contradicts insights from theoretical perspectives such as RMT (La Guardia, 2008; La Guardia et al., 2000).

One potential explanation may be that individual differences may have existed in the relationships under scrutiny. Studies 2–3 provided some evidence for this reasoning and highlighted that the examined relationships may have depended on the extent to which dating apps were used to find a committed relationship or a casual sex partner. RMT (La Guardia, 2008; La Guardia et al., 2000) and existing research (Rodriguez et al., 2015; Sheldon, 2007) expected that positive associations would emerge between a high preference for intrinsic MVs and positive outcomes (e.g., sexual satisfaction, need satisfaction). The findings of Studies 2–3 indicated that the direction of these relationships may change when considering (single) people who are using dating apps to find a casual sex partner. We recommend that future research pays more attention to how the relationships between MV preferences and positive outcomes may differ according to the type of partners individuals are looking for.

Individual Differences: Gender

Study 1 suggests that individuals present themselves in the visual features (on Tinder) that align with MVs that the opposite gender finds attractive. Women were more likely to present the extrinsic MV of physical attractiveness and men were more likely to present the extrinsic MV of resources. This aligns with gender differences derived from the evolutionary theory and empirical evidence on digital mating strategies on dating apps (Abramova et al., 2016; Fisman et al., 2006;

Roshchupkina et al., 2023) of MVs that the opposite gender looks for in a potential partner.

Study 3 aligns with this research and also found general gender differences with regard to resources. Yet, it remains questionable whether gender differences for other MVs (i.e., physical attractiveness) still exist as both Studies 2 and 3 could not support such gender differences. As previously explained, gender differences may become less outspoken because of feminist perspectives in our society such as the #Metoo movement (Maes et al., 2019). Additionally, evolutionary theory and current literature (including Studies 1–3) focused on dichotomous gender differences (i.e., men versus women; Buss, 2023). Differences may occur when we consider more gender options individuals can identify with. Therefore, future research is needed to be more inclusive concerning individuals' gender.

Limitations

Several limitations should be acknowledged. First, it remains unclear if the findings can be generalized to individuals of another culture. All studies were conducted in a Western culture, which may limit the generalizability of the findings as research indicated that cultural differences exist in MV preferences (Jonason & Thomas, 2022; Li et al., 2011). These differences may be reflected in users' self-presentations (e.g., Chan, 2016) and how dating app use relates to valuing different MVs. Future content analyses and cross-sectional studies may examine these cross-cultural differences.

Second, we did not test differences between sexual orientations. Prior research indicated differences in MV preferences with heterosexual men attaching more importance to physical attractiveness compared to bisexual men and heterosexual women having a higher MV preference for resources compared to bisexual women (Kostic & Scofield, 2022). Therefore, future research should consider how men and women with different sexual orientations present themselves on dating apps and how they may be differently affected by using dating apps in their MV preferences.

Third, due to the cross-sectional design of Study 2 and Study 3, no causal inferences could be drawn (Levin, 2006). Longitudinal research is recommended to examine whether dating app use and specific dating app behaviors longitudinally relate to MV preferences and sexual satisfaction or need satisfaction with matches.

Additionally, Study 1 did not account for users' motivations for dating app use. Descriptive statistics of Study 1 showed that only 17.3% ($n = 53$) explicitly stated their motivations for using a dating app in the biography. Future research may use other data collection methods in which users can fill in an online survey that measures their dating app motivations in combination with a data donation study in which dating app users share their dating app profiles with the researchers. This data collection method allows researchers to investigate whether individuals who have various motivations may present themselves differently on dating apps.

Finally, the model that tested the relationships between swiping frequency, MV preferences, and sexual satisfaction among dating app users (i.e., Model 2) of Study 2 did not reach the required sample size to detect a small effect. Post-hoc power analyses indicated that the statistical power at an alpha level of < 0.05 was 0.37 for detecting a small effect of 0.02 in the model with 133 dating app users.

Even though this study had some limitations, the results provided insights into the links between different types of dating app behaviors, MV preferences, and positive outcomes. Perhaps even more important, this study formulated new insights into how future research can further address the relationships under scrutiny.

Funding This work was supported by the Research Foundation Flanders (FWO-Vlaanderen) under Grant 077420N.

Data Availability All the materials, supplementary materials, syntaxes and data can be found in the Open Science framework at https://osf.io/3hcm7/

Code Availability All the materials, supplementary materials, syntaxes and data can be found in the Open Science framework at https://osf.io/3hcm7/

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval The research involved human participants (i.e., emerging adults).

Informed Consent For all three studies, participants provided consent to participate in the study. Note that this study was ethically approved by the institutional review board of KU Leuven.

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