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Reduce Uncertainty of Online Potential Mates: Employing Signalling Theory

Research-in-Progress

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Abstract

The online dating environment is full of uncertainties, and thus online daters use various searchable and experiential cues to determine whether online potential partners are in line with their expectations. Uncertainties caused by information asymmetry between dating parties are likely to influence their predicted outcome value judgment. To reduce the uncertainty of online mating, we propose a research model based on signalling theory to examine how two evaluative approach (the trait-evaluation and live-interaction approach) influence the level of online mate uncertainty and the predicted outcome value judgment of online daters. In addition, we also examine the moderating effect of perceived physical attractiveness on the relationship between online mates' levels of uncertainty and the perceived outcome value judgment. The contributions of two evaluative approach on online dating are also discussed in this study.

Keywords: Trait-evaluation approach, live-interaction approach, online mate uncertainty, predicted outcome value judgment, signalling theory.

Introduction

In recent years the trend toward single status has contributed to the widespread use of online dating apps. Although online dating is widespread and popular, some audiences have indicated that they are disappointed with the information available on online dating profiles. For one thing, a gap exists between the kinds of information people provide and those they want and need to judge whether someone else is a good potential mate (Frost et al. 2008). Another issue is that much online profile information is untruthful. This problem can decrease users' possibility of finding a good romantic match. In other words, if a mate's online profile is a truthful presentation, and if the viewer can accurately assess his or her characteristics as a potential mate through online interactions, then the possibility of successful matchmaking will increase.

The success of online dating rely on both the potential mates' objective qualities, and their subjective qualities, which are often evaluated through moment-to-moment interaction between the two parties (Frost et al. 2008). The objective qualities that are usually described in a profile are also called searchable attributes, and these can classify potential mates by categories such as income level or religion. The subjective qualities are often called experiential attributes, such as sense of humour or rapport (Frost et al. 2008), and these attributes are more difficult to communicate. If dating apps cannot provide sufficient clarity on members' attributes, then their users will experience high levels of

uncertainty in contacting potential mates. Therefore, this study proposes trait evaluation approach and live interaction approach to reduce dating app users' uncertainty, and thereby encourage them to develop future relationships.

The *trait-evaluation approach* involves examining the ways that users of dating apps try to evaluate static information about people they have never met (Reis et al. 2011). Dating app users' expectations of potential mates are influenced by a variety of traits that they envision will be held by their ideal partners. Thus, users of dating apps evaluate potential mates differently in response to the traits they see in online profiles. Our study therefore adopts the online mate's profile description, photo, and overall impression of the profile as the proxy variables for our *trait-evaluation approach*.

People are subjective "experience goods," unlike objectifiable commodities for online purchase (Frost et al. 2008). Dating app users must directly experience the interaction process with others, rather than judging solely by second-hand information about potential mates (e.g., profile information or photos) (Frost et al. 2008). Thus, this study proposes that the live-interaction approach is necessary. This approach involves users in direct interaction with potential romantic partners, which may provide the experiential basis for realistically evaluating each other (Reis et al. 2011). This approach can also serve important roles in the communication of emotions through methods that are comparable with face-to-face (F2F) interactions (Derks et al. 2008). Thus, this study adopts synchronous text-based communication use as the proxy variables for the live-interaction approach in an online dating context.

Mate uncertainty in dating app can be classified as either searchable uncertainty or *experiential uncertainty*. Trait evaluation approach offer searchable attributes, and such attribute descriptions allow online potential partners to present themselves to users as distinct individuals. Thus, a person's self-description of traits through an online profile can reduce the other potential partners' levels of uncertainty concerning their suitability in a dating context. The live-interaction approach offers ways to communicate experiential attributes, which can reduce experiential attribute uncertainty. Such options for interaction allow people to directly evaluate a potential partner's characteristics through various online interactions in a computer-mediated communication (CMC) context, rather than having to rely solely on profile-based information. Therefore, understanding how to reduce mate uncertainty is a very important pre-dating step in the relationship development cycle.

The effect of mate uncertainty varies in different situations, and is influenced by various moderators. Variations in perceived physical attractiveness can affect how a user responds to mate uncertainty. Thus, this study proposes that when perceived physical attractiveness is high, viewers' predicted judgments are likely to be affected by a mixture of perceived attractiveness and level of uncertainty. Therefore, perceived physical attractiveness moderates the relationship between mate uncertainty and their predicted judgment.

The objectives of this study are (1) to examine the effects of two evaluative approaches on mate uncertainty, thereby improving the predicted judgments of online potential partners, and (2) to explore the moderating effect of perceived physical attractiveness on the relationship between the online potential partners' levels of uncertainty and their predicted judgment. These objectives are proposed to help answer the following research questions.

- Will the use of a trait-evaluation approach influence online mate uncertainty?
- Will the use of a live-interaction approach influence online mate uncertainty?
- Which factors in the trait-evaluation or live-interaction approach have the most influences on online mate uncertainty?
- How does perceived physical attractiveness help to shape the relationship between online mate uncertainty and predicted judgment?

Theoretical Background

Signalling Theory

People are "experience goods," who are judged as partners more by the feelings they evoke than the functions they perform (Frost et al. 2008). Online dating is akin to the process of shopping for goods online, in that pre-purchase trials are unavailable and product quality can be evaluated only after

purchase. These discrepancies are characteristic of information asymmetry (Wells et al. 2011). The possible solutions for information asymmetry involve the use of signals by which online potential partners can share credible information about themselves before being able to observe each other. Efficacious signals have two important characteristics: signal observability and signal cost. Signal observability refers to the extent to which others notice the signal, and signal cost refers to the need to structure signals so that dishonest signalling does not pay (Connelly et al. 2011). In line with the characteristics of efficacious signals, previous research has found that low-quality sellers are likely to avoid costly and easy-to-verify signals (e.g., contact information), and to send fewer signals than high-quality sellers. High-quality sellers tend to use signals that are more costly and difficult-to-fabricate (e.g., consumer feedback,) and to display more signals (Mavlanova et al. 2012). Borrowing these findings from previous research, we conclude that signals that satisfy higher levels of observability and cost standards (e.g., profile, photo) may help dating app users to distinguish more trustworthy potential dating mates.

Online Mate Uncertainty

Searchable Attribute Uncertainty

Online dating profiles are static self-presentation portfolios consisting of textual descriptions and photographs, which provide searchable attributes of potential romantic partners (Frost et al. 2008). Online potential partners commonly desire to embellish themselves and create a certain impression for their audience. This activity is referred to as selective self-presentation, and it may lead to considerable uncertainty concerning searchable attributes (Hancock and Toma 2009). An online potential partner's selective self-presentation stems from the tension between authenticity and self-enhancement (Hancock and Toma 2009). Authenticity involves the potential partners' need to appear honest in their self-descriptions. Self-enhancement relates to their desire to appear as attractive as possible and to be noticed by potential partners. However, once online potential partners catch one another's attention, their anticipation of meeting offline creates a pressure for honest self-presentation. Both potential partners want more authentic clues about the other person's appearance, behaviour, and attitudes (Walther et al. 2009). If an online potential partner's profile is judged as too inaccurate upon meeting face-to-face, then that dating app user runs the risk of alienating a potential partner.

Experiential Attribute Uncertainty

In addition to the searchable attribute uncertainty that arises from a potential partner's unwillingness to truthfully disclose his or her characteristics, we posit that dating app users may face uncertainty due to the limitations of profiles in conveying experiential attributes. Dating app users have difficulty communicating their degrees of kindness, confidence, intelligence, or humour. In general, people must actually meet each other to evaluate these traits, and they cannot convey such attributes through profile-based documentation. The online potential partner's inability to fully present his or her true experiential characteristics makes it difficult for dating app users to fully evaluate each other, or to predict how the other person will actually behave in F2F interaction. Naturally, this limitation gives rise to uncertainty over potential partners' experiential attributes.

Thus, online mate uncertainty involves doubt about both searchable attributes and experiential attributes. Both kinds of uncertainty need to be reduced as far as possible if dating app users are to adequately assess each other's characteristics and predict how they will perform in F2F communication.

Effects of Online Mate Uncertainty

Online Mate Uncertainty and Predicted Outcome Value Judgment

In online dating markets with asymmetric information, participants face potential partners who have hidden characteristics or potentially poor information disclosure. Only if audiences are able to reliably differentiate between good and bad potential partners are they likely to develop future relationships with the appropriate mates. Thus, greater certainty about online potential partners' characteristics

would allow participants to correctly determine whether someone is a good romantic match, increase the possibility of successful matching, and thereby improve the predicted outcome value judgment. Both the searchable and experiential dimensions of online mate uncertainty are expected to negatively influence the levels of predicted outcome value judgment. First, participants who have difficulty evaluating online potential partners' profile descriptions are likely to reduce their expectations of a matching possibility. Therefore, searchable attribute uncertainty is likely to reduce predicted outcome value judgment. Second, fears that online potential partners are unable to fully convey their offline characteristics can lead participants to reduce their willingness to develop relationships. Thus, experiential attribute uncertainty can also have a negative effect on predicted outcome value judgment. Taking these considerations together, we propose the following hypothesis.

H1: Online mate uncertainty (including both searchable attribute and experiential attribute uncertainty) is negatively associated with predicted outcome value judgment.

Antecedents of Online Mate Uncertainty

Online mate uncertainty is commonly conceptualized as an audience problem that arises due to a profile reader's difficulty in assessing the writer's true characteristics. Such uncertainty can arise from two kinds of limitations: (1) the online potential partner's unwillingness to truthfully disclose his or her corporeal self, or (2) the potential partner's inability to fully describe his or her own characteristics. These two drivers of online mate uncertainty play an important role in assessing people as "experience goods".

In a market with information asymmetry, information signals are used to help buyers infer the quality of products with unobservable characteristics, and such signals are particularly useful for experience products (Frost et al. 2008). Therefore, we regard information signals as a means to help dating app users reduce their uncertainty and facilitate their decision making. Effective information signals should be observable and differentially costly (Dimoka et al. 2012). The observability of a signal helps participants reduce the costs of information searching and processing. Signal costs are among the most important indicators of information quality, and effective signals should induce signalling costs. It should be more costly for bad online potential partners to transmit their signals. If these two properties are satisfied, then the readers of online profiles should be able to better rely on the online information signals to distinguish the most appropriate mates.

Our focus is on how signals can address online potential partners' unwillingness to truthfully disclose their corporeal selves and their inability to fully describe their characteristics. First, we introduce a trait evaluation approach to capture the degree to which online potential partners are willing to offer a diagnostic online profile that differentiate themselves from those who are unwilling to disclose their true characteristics. Second, we account for an online potential partner's inability to describe his or her true characteristics by introducing the live interaction approach, which captures the degree to which online potential partners are able to disclose themselves through textual interaction along with emoticon use.

Trait-evaluation Approach

A trait evaluation approach is an approach that dating app users use to evaluate static information about people they have never met (Reis et al. 2011). Such approach is similar to an indirect product experience, in which a consumer forms his or her preferences in relation to a product advertisement. Indirect product experience conveys primarily verbal information, whereas direct product experience conveys a large proportion of nonverbal information (Hamilton and Thompson 2007). The dual code theory suggests that verbal and nonverbal systems function independently, and result in the activation of different representations (Paivio 1991). Indirect experience with an attitude-laden object triggers an abstract, higher-level mental construct, and people are likely to make their evaluations using global trait concepts (e.g., friendliness, creativity) when they are using high-level mental constructs (Trope and Liberman 2010). Moreover, people engaging in an indirect experience are likely to assign greater weight to higher-level information (e.g., traits of potential partners), and to have higher levels of confidence in predictions concerning psychologically distant events (Trope and Liberman 2010). Thus,

dating app users tend to overlook uncertainty concerning lower-level information (i.e., the online mates' corporeal self), and confidently predict a good relational outcome with potential partners before F2F interaction based solely on their traits as described in online profiles.

Trait evaluation approach involve attributes for assessing the degree to which online mates provide useful profile information in presenting themselves, such as height, weight, age, race, interests, and photographs. These attributes allow online mates to differentiate themselves to their audience. Writing a longer online profile and an up-to-date photograph is costly to online mates in terms of time and effort. Also, a longer online profile may also become a liability for dishonest online mates, because any deviation in their descriptions from their true characteristics may give them a reputation for misrepresenting themselves. Therefore, trait evaluation approach tend to be differentially costly for online mates who are unwilling to offer complete and accurate profiles compared with those who are willing to do so. Hence, we expect that a relatively full description of traits in an online profile should reduce audience uncertainty toward that mate. Thus, we develop the second hypothesis.

H2: The use of a trait-evaluation approach (profile information, photo, and overall profile description) is negatively associated with online mate uncertainty.

Live-interaction Approach

Live-interaction approach allow prospective mates to interact and gain information in a real time context, which may provide the basis for an experiential evaluation between the two parties (Reis et al. 2011). Social interaction between prospective mates needs verbal cues to maintain the relationship and provide mutual emotional experience. In an online context, CMC helps to enable the verbal cues that enable successful interactions and easily convey emotional feelings and avoid the potential embarrassment or danger that could arise in F2F situations. In addition, CMC can provide opportunities for mates to express their opinions candidly or convey sincere emotional feelings that may be difficult to express in F2F situations. Therefore, in extending the CMC literature on online communication, we focus on text-based communication and emoticon usage for live-interaction approach that online mates can use to enhance their ability to deal with uncertainty. Text-based communication is the most common type of CMC, and is a suitable medium for emotional communication (Derks et al. 2008). On the other hand, emoticons (emotion icons, or similar facial expression images) can used to amplify or clarify the otherwise insufficient emotional expression of text messages (Walther and D'Addario 2001). Emoticons have been widely used on online dating sites or in CMC situations, providing nonverbal cues that are similar to the facial expressions used in F2F circumstances (e.g., Derks et al. 2007). Thus, online mates can rationalize their use of text-based communication and emoticons when involved in a live-interaction approach. In sum, live interactions using text-based communication with emoticons are costly to online mates in terms of time and effort. In conducting these online interactions, mates may find it difficult to avoid the honest disclosure of their actual experiential attributes, because any inconsistencies in self-presentation may be easily exposed, and may give mates a bad reputation for misrepresentation. Therefore, these interaction media are differentially costly for online mates who are unwilling to openly convey their experiential attributes. Hence, we expect the existence of live interaction approach to reduce the uncertainty of mates in an online dating context. Thus, we propose a third hypothesis.

H3: The use of a live-interaction approach (text-based communication and emoticon usage) is negatively associated with online mate uncertainty.

Moderator

Perceived Physical Attractiveness

Although reducing the uncertainty for online mates can improve their predicted outcome value judgment, the effectiveness of a profile is bounded by the degree to which other mates are attracted by the profile photograph. Sunnafrank (1990) posited that during each initial online interaction, the individuals involved spontaneously forecast the value (i.e., rewards and costs) associated with future interaction, and base their behaviour on those forecasts. An individual looking for relationship

partners value physical attractiveness in potential mates. This propensity to favour attractive-looking people has been attributed to an instinct for selecting fitter genes to pass on to offspring, or to an assumption that attractive people have a greater ability to provide material benefits, or that they must have greater capacity to reproduce (Gangestad and Scheyd 2005). In other words, physical attractiveness is generally taken as a reliable gauge of a person's value as a mate. Previous research has indicated that physical attractiveness is a salient and reliable indicator of perceived outcome value of judgment (Gibbs et al. 2006; Houser et al. 2008). Users of dating apps value online mates who seem physically attractive. They perceive a higher potential benefit in future relations with attractive mates than with those who are less physically attractive. Therefore, the perception of physical attractiveness may strongly influence predicted outcome value judgment. We propose the fourth hypothesis.

H4: When the online potential partner is perceived as more physically attractive, the effect of online mate uncertainty on the predicted value judgment is weaker, comparing with when the online potential partner is perceived as less physically attractive.

Research Methodology

This study intends to collect samples from the members of an online dating app company. This dating app company has approximately 400 thousand members. The purposive samples of the study are users of this dating app. A survey is conducted in the study to investigate whether trait-evaluation and live-interaction approach reduce online mates' uncertainty based on his or her overall dating experiences, and if these approach improve the dating app users' predicted outcome value judgment. Figure 1 shows the conceptual model, which is subject to verification. The subjects are recruited from among members of the dating app community, and are above 20 years old.

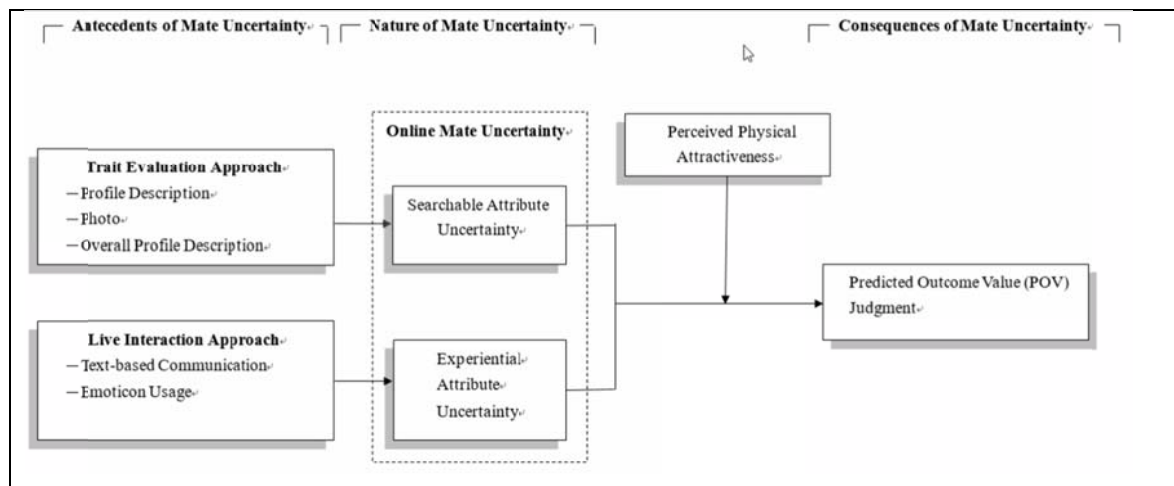


Figure 1. Conceptual Model

Measurement

Predicted Outcome Value (POV) Judgment

Predicted outcome value judgment concerning online dating is evaluated by a series of items to be rated on a seven-point range of semantic differential items (e.g., satisfying/unsatisfying, valuable/not valuable, worthwhile/not worthwhile, rewarding/not rewarding), as adapted from Mottet (2000).

Online Mate Uncertainty

The scales used to measure online mate uncertainty are adapted from research by Dimoka et al. (2012).

Trait-evaluation Approach

To assess the trait-evaluation of online profiles, each participant in our sample will be asked to evaluate profiles by rating the following items according to a seven-point Likert-type scale: (1) The text in the online profile helped me to adequately evaluate this person. (2) The photo in the online profile helped me to adequately evaluate this person. (3) The overall online profile helped me to adequately evaluate this person.

Live-interaction Approach

To assess the live interaction status, each participant will be asked to evaluate her online interactions with potential partners by rating the following five items on a seven-point Likert-type scale: (1) The frequency of online text-based communication helped me to adequately evaluate this person. (2) The amount of time spent on online text-based communication helped me to adequately evaluate this person. (3) The immediacy of the online text-based communication helped me to adequately evaluate this person. (4) The valence of online emoticon use helped me to adequately evaluate this person. (5) The frequency of online emoticon use helped me to adequately evaluate this person.

Perceived Physical Attractiveness

For the measurement of online potential partner's physical attractiveness, we use four items adopted from Brand et al. (2012).

Discussion and Implications

This research provides a very integral view to examine how two evaluative approach (the trait-evaluation and live-interaction approach) influence the level of online mate uncertainty and the dating app users' predicted outcome value. In addition, depending on potential partner's perceived physical attractiveness, viewers' predicted outcome value judgments are likely to be affected by a mixture of perceived attractiveness and level of uncertainty.

The study is going to make two potential theoretical contributions. First, this study will provide an in-depth investigation of the antecedents to online mate uncertainty, using both a trait-evaluation approach and a live- interaction approach to identify ways of reducing online mate uncertainty. Second, we will investigate the moderating effect of perceived physical attractiveness on the relationship between online mates' uncertainty and predicted outcome value judgment.

Our study is also going to make three potential practical contributions. First, it will provide insights into the kinds of signals (i.e., trait-evaluation and live-interaction approach signals) that are most effective for improving the dating app users' predicted outcome value judgments. It is necessary for the long-term survival of dating apps to provide the information or the mechanisms that are of greatest value for promoting relationship development. Second, our research model will further guide dating app owners to understand how the reduction of two types of uncertainty (i.e., concerning both searchable and experiential attributes) can be used to attract users with various levels of perceived physical attractiveness. Third, the findings from this study will enable dating app developers to gain a more complete understanding of the signals that reduce online mates' levels of uncertainty and improve users' predicted outcome value judgments. Ensuring the continual success of dating apps is a win-win situation for both developers and users. Users get to try out and develop relationships with less uncertainty, and the dating app developers convince more attractive potential partners to join their platforms and display their profiles, thereby increasing the selection opportunities for users and improving the dating app developers' revenue.

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