

The Impact of Trustworthiness in the Dating App Experience: A Trust-Inducing Model Proposal

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Abstract

Lack of trust has been identified as one of the most formidable barriers to engaging people in the dating app. Financial fraud, meeting strange people online, and personal data leaks are why people lose their trust in dating apps. Dating app services aim to connect people; however, there is no medium that people can trust. Much prior research has focused on online trust in adopting e-commerce websites but pays less attention to the dating apps market. This study presents a trust-inducing framework for dating apps in five dimensions: company trust, system trust, information trust, matching trust, and risk trust. We conducted an online survey to test the framework's hypothesis. This study's results provide insights into each trust dimension, and a revised trust-inducing framework was proposed based on the findings. Our study aims to helping users to understand the importance of trust in dating apps and appreciate what are the various factors that would affect the user's trust in different aspects.

Keyword : Dating app, Trust-inducing, UX design, Trustworthiness

1. Introduction

In recent years, the dating app market in Asia increased in countries like Taiwan, South Korea, and Japan. In 2019, Match Group, a dating company in the United States (US) and owner of the global dating app Tinder, planned to expand its membership in Asia by 40 percent [1]. However, studies relating to dating apps in these areas presented social issues [2][3]. Some people worried about financial fraud, meeting strangers online, and personal data leaks, making them lose trust in dating apps. Moreover, dating apps have an inherent lack of trust. For instance, in the industrial 'barter' economies, people exchanged resources freely with mutual trust, eventually exchanging money with those outside their barter network. However, the trust built into barter and monetary exchanges seem lost in dating apps. Prior research on online trust focused on adopting e-commerce websites but not on dating apps. Trust issues have existed in the dating apps market for a while [4]. However, service providers cannot

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control what happens when their users meet in real life. Understanding the importance of trust in dating apps might help providers design a better service and raise positive awareness toward dating apps. Our study developed a trust-inducing framework for dating apps to understand different factors affecting the user's trust. Our framework covers five trust dimensions: company, system, information, matching, and risk. We constructed the framework by synthesizing material from the literature on online trust, e-commerce trust (Egger's revised trust model for e-commerce) [5], dating app trust, and the relationship between e-commerce and dating app services. Next, we analyzed the top three popular dating apps in Korea and developed an online survey to collect information about users' experiences in dating apps and test the framework's hypothesis.

2.Theoretical Development

2.1 Online Trust

Trust is hard to define even though every aspect of people's lives involves some form of trust. It is a positive and vital bond in human love and friendship and in building meaningful relationships. Moreover, trust is a highly valuable business relationship element, as it fosters risk-taking in economic transactions [6]. With Internet expansion, research into online trust has also increased in recent decades [7-9]. A published study shows that "online trust" has four characteristics [3]. The first one is "trustor and trustee." In online trust, the trustor is a user browsing an e-commerce website. The trustee is the e-commerce website (the merchant that the website represents). The second one is vulnerability. Any online transaction is risky for users because users are often unaware of the types of online risks. For example, in online commercial transactions, consumers are vulnerable to specific trust violations such as loss of money and privacy [2]. The third one is produced-action. When on a website, users can take one of two actions - "just browsing" or "engage in service". To engage users, providers should ensure that users are confident that they have more to gain than lose. And finally, subjective matters. Online trust is inherently subjective [10] since people hold different technology viewpoints.

2.2 E-Commerce Trust Model

While online trust studies focus on business to business (B2B) or business to customer (B2C) models, Egger's trust model for e-commerce (revised MoTEC) [5] looks at three dimensions: First, before interacting with the system. The user's knowledge of the domain and reputation of the service provider.

Second, after interacting with the system. One is the interface's impression, which includes the system's usability and familiarity in terms of terminology and domain model. Another one is the quality of the user's informational content, including risk management and transparency in the privacy policy.

2.3 Online Dating and E-Commerce Comparison

There is a similarity between online dating and e-commerce. Online merchants depend on their online platforms to make sales. This same dependence exists in online dating services. However, unlike online product transactions, offline dating experience is subjective and difficult to control. The online dating industry can only control its online environment for trust and safety and not the purchased product. Therefore, e-commerce and online dating focus more on designing better service to earn their users' trust.

However, there is some difference between online dating and e-commerce. One is the transaction. In e-commerce, a platform connects providers and users with various available products for purchase, usually once. On the other hand, online dating services allow users to connect with others, and dating is not a one-time transaction [11]. People may date several times until they find the "right one". Another one is predictability. Human-to-human matches are less predictable than consumer-to-good matches. For example, users can exchange or return products, and trust can be repaired, but this is not the case with online dating. Due to the similarity between e-commerce and online dating, our study proposes a trust-inducing model for dating apps based more on the differences, rather than similarities, between online dating apps and e-commerce.

2.4 Five Dimensions in a Trust-Inducing Model for Dating Apps

Since dating apps are booming in the online dating industry, we looked at a framework for understanding trust in dating apps to explore design implications that maximize consumers' trust. This framework encompasses five dimensions discussed below.

2.4.1 Company Trust Dimension

According to Egger's model of trust for e-commerce (MoTEC), the user's knowledge of the service provider's domain and reputation lays the foundation for trust before they interact with the system. Egger's identified two parts of the company trust dimension. First, branding and marketing. In the online trust-building process, the consumers' trust is influenced not only by the company's reputation and size

but also by its branding and marketing [12]. Second, indirect experience. Two-thirds of those transacting online need good arguments and the benefit of others' experiences to feel confident enough to complete their transaction [13]. Before interacting with dating app systems, their friends' experiences and app reviews will also influence users' trust.

2.4.2 System Trust Dimension

The system's usability and familiarity affect users' trust after interacting with the system. Where previous user experience (UX) research on trust focused on graphic design [14] and surface cues [13], Egger proposed two user designs – user interface(UI) and user experience (UX). UI design is the layout and color tone of the dating app. For example, a research study [15] showed that if the dating app layout is similar to the messenger layout, it will increase the dating apps' trust level. On the other hand, UX design is related to the usability of the functions in dating apps. For example, the previous study proved that connecting with social networking services (SNS) accounts like Facebook positively relates to users' trust in the sign-up process [16].

2.4.3 Information Trust Dimension

The authenticity of the users' information in dating apps created doubts and concerns over safety and trust. This concern partly stems from lawsuits of companies like Match Group for fraudulent business practices. As a result, in 2020, Match Group updated its safety protocols by including an artificial intelligence (AI) photo verification and integration system in its app [17]. These two features verify a match's authenticity. The studies also show that users' detailed personal information and identity verification with SNS accounts can increase trust [16].

2.4.4 Matching Trust Dimension

The matching system is an essential part of dating apps. A good match could bring a good experience for users, but a bad match would lose users' trust and make users quit the app. Also, some users (mostly males) complained about matches with inactive users. Given this finding, our study assumed that improving the matching experience and increasing the matching rate can increase users' trust in dating apps.

2.4.5 Risk Management Dimension

Dating apps are inherently risky, and negative press reporting has elevated that risk. Egger's revised MoTEC suggests that security and privacy play essential roles in online trust. Wang & Lin (2016) also

show that perceived privacy risk negatively affects continued app usage [18]. Based on previous studies, safety and privacy comprise the risk trust dimension. The safety section includes straightforward safety tips in a well-organized report/block system, and the privacy section contains a transparent privacy policy. Risk management is the last trust dimension in dating apps but the most important one.

2.5 Trust-Inducing Features of Dating Apps

[Table 1] sums up the five dimensions and ten features that induce users' trust in dating apps. The five dimensions are in two parts: (1) Before interaction and (2) after interaction with the dating app. Each dimension has different factors that affect users' trust. Before interaction includes company trust. After interaction includes system trust, information trust, matching trust, and risk trust.

[Table 1] Trust-Inducing Framework for Dating Apps

| | |
|---------------------------|--|
| Before interaction | Company trust dimension 1. Branding and marketing 2. Indirect experience |
| After interaction | System trust dimension 1. UI design (Layout, color) 2. UX design (Content, feature) |
| | Information trust dimension 1. Personal information 2. Identity verification |
| | Matching trust dimension 1. Matching success rate 2. Matching experience |
| | Risk trust dimension 1. Privacy management 2. Safety management |

3. Methodology

To better understand individuals' experiences in dating apps and test the framework's hypothesis, we conducted an online survey to understand the importance of trust for different dimensions.

3.1 Data Collection

This research took place in Korea. We analyzed the top three popular dating apps in Korea in 2019 [19] [Table 2]. Based on our analysis of the literature and these dating apps, we developed a questionnaire for people aged 20-40 who previously used dating apps. This age group is the most popular for dating app usage [19]. The questionnaire had two parts. The first part related to the five trust dimensions (17 questions), and the second part collected primary personal data.

[Table 2] Analysis of Top Three Popular Dating Apps in Korea

| | Tinder | Glam | Amanda |
|------------------------------|---|---|--|
| Company Dimension | Localization marketing strategy. | Content marketing strategy with different markets. | Content marketing strategy with a unique member-screening system. |
| System Dimension | UI design: 1. Profile layout: Photo-based design. UX design: 1. Matching method: Get into "know people stage" on the main page. 2. Matching Interaction: Swipe (playful animations). | UI design: 1. Profile layout: Photo-based design. UX design: 1. Matching method: Explore people with a different topic. 2. Matching Interaction: Tab in and decide like or not. | UI design: 1. Profile layout: Information-based design. UX design: 1. Matching method: Explore people with a different topic. 2. Matching Interaction: Tab in and decide like or not. |
| Information Dimension | 1. Personal information (optional). 2. Profile photos verified (optional). | 1. Personal information: Basic info (required); Body type, religion, alcohol (optional). 2. Profile photos verified needed (required). | 1. Personal information: Basic info (required)tag (optional). 2. Profile photos verified (required). |
| Matching Dimension | Swipe left (dislike) and right (like); only match when you both swipe right (like) to each other. | Profile pictures will be evaluated before joining the app and system would show you the same score range people to you. | Profile pictures are evaluated by existing members and obtain a score over 3.0. / Recommend two people for you every day. |
| Risk Dimension | 1. Privacy: Privacy Policy 2. Safety: Providing dating safety tips online/Report or un-match with the inappropriate users/Contact with local safety center/ Tinder Safety and Policy Center. | 1. Privacy: Privacy Policy/Avoid to meet acquaints: Block friends from Facebook or contacts (optional) 2. Safety: Report or un-match the inappropriate users/24hr scan if there are inappropriate users. | 1. Privacy: Privacy Policy/Avoid to meet acquaints: Block friends from contacts (optional) 2. Safety: Only can leave the chatting room/24hr scan if there are inappropriate user. |

Our pilot study to assess the questionnaire's items and research constructs' validity and reliability yielded satisfactory results. We surveyed from 27 July to 5 August 2020, and received 155 valid samples. We conducted a descriptive statistical analysis to summarize respondent profiles and the characteristics of all the tested variables. Demographic data collected on the samples, including age, gender, and job status, are shown in [Table 3].

[Table 3] Demographic Characteristics

| | Characteristics | Frequency | Percentage |
|---------------|--------------------------------|-----------|------------|
| Gender | Female | 79 | 51 |
| | Male | 76 | 49 |
| Age | Under 18 | 0 | 0 |
| | 18-24 | 52 | 33.5 |
| | 25-34 | 95 | 61.3 |
| | 35-44 | 8 | 5.2 |
| | 45-54 | 0 | 0 |
| | | | |
| Job | Employed full time | 81 | 52.3 |
| | Employed part-time | 8 | 5.2 |
| | Currently looking for work | 15 | 9.7 |
| | Not currently looking for work | 1 | 0.6 |
| | Student | 45 | 29 |
| | Self-employed | 5 | 3.2 |

4. Results and Findings

4.1 Korean Dating App Analysis

We analyzed the top three dating apps in Korea, including Tinder, Glam, and Amanda, using our five-dimension framework. In the system dimension, Tinder's matching and interaction are easier to use compared to Glam and Amanda. In profile layout, Tinder and Glam focus on the user's photos. Tinder collects basic information only in the information dimensions, whereas Glam and Amanda ask for more detail. In the matching dimension, Tinder is easy to use, but Glam and Amanda are interesting and gamified. All apps provide a reporting system and 24-hour scanning; however, Tinder provides more user safety measures like dating safety tips online and contact info for the local safety center.

4.2 Survey Findings Analysis

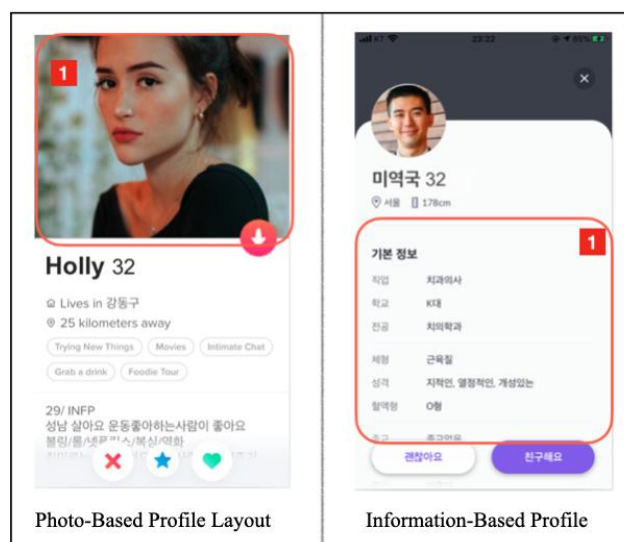
4.2.1 Before Interaction with Dating Apps

In this section, we wanted to understand people's motivations for using the dating app. Of the 155 respondents, 54.2 percent were "looking for new friends", 21.3 percent were "looking for a serious relationship", and 20.6 percent were "looking for casual dating". When asked for their impression of

using dating apps, most respondents felt that there are many players and strangers in dating apps (22.9 percent), followed by “the relationship will not last long” (17.1 percent) and that there are “many fake users” (17 percent). In response to why they started using dating apps, 27.5 percent said it was interesting advertisement content. Other responses included “the perceived (good) reputation of the dating app” (27.1 percent) and “my friends are using it” (22.4 percent).

4.2.2 After Interaction with Dating Apps

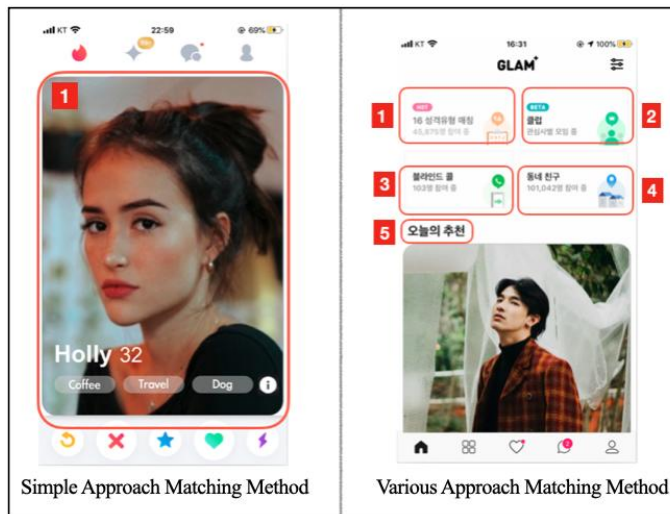
Based on our survey and proposed framework, the four parts in the “after interaction” section—system, information, matching, and risk—resulted in the following findings. First, in the system dimension, there are two parts: UI design and UX design. In the UI design part, we included the profile layout in this study. Two kinds of profile layouts appear in dating apps, as depicted in [Fig. 1]. The photo-based layout shows photos first, then detailed users' information. The information-based layout shows information first, then users' photos. Survey results indicate that 66 percent of respondents trust the information-based layout, and 37 percent chose the photo-based layout.



[Fig. 1] Profile layout

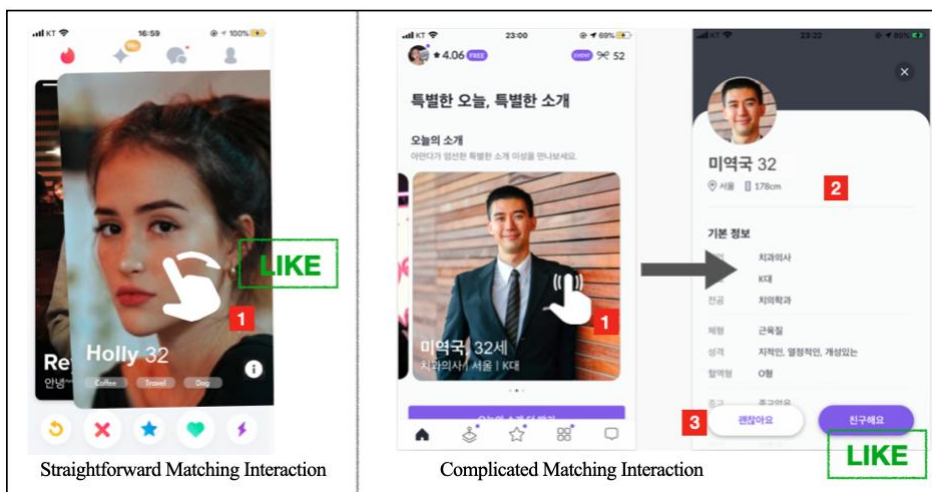
The UX design part has included matching methods and matching interaction. There are two matching methods in dating apps, as depicted in [Fig. 2]. One is a simple way to get into the “know people stage” on the main page, and the other includes different categories to get to know people. Survey results revealed that 71 percent of respondents have more trust in knowing people through different

categories instead of being limited to only one way to know people (29 percent).



[Fig. 2] Matching method

In the matching interaction part, there are two matching interactions in dating apps, as depicted in [Fig. 3]. A matching interaction is by swiping left (dislike) or right (like), which is intuitive and straightforward. Another one is a more complicated way of choosing matches in dating apps. The survey shows that 77.4 percent of people tend to trust the complicated matching interaction compared to 22.6 percent who chose the more straightforward method.



[Fig. 3] Matching interaction

Second, in the information dimension, when asked whether the kind of information users provide would increase their trust level in dating apps, 18.7 percent of respondents said that basic background info is most important. This was followed by detailed self-introduction (14.1 percent), interests (11.8 percent), profile photos verified by an AI system (11.3 percent), education (6.6 percent), and profile pictures rated by other users (8.3 percent). Responses to the kind of situation that might have the worst impact on trust level toward dating apps included “recommend[ing] the inactive users” ($\mu = 2.604$) (worst impact on user's trust), followed by “too many catfish” ($\mu = 2.587$), “indecent behavior users” ($\mu = 2.103$) and “financial fraud” ($\mu = 2.039$). Third, in the matching dimension, the survey shows that people agree “a good matching experience” would gain trust most ($\mu = 3.568$) followed by “increasing matching rate” ($\mu = 3.374$) and a variety of matching methods ($\mu = 3.065$). Finally, in the risk trust dimension, “a good report or block system would affect trust most” ($\mu = 3.916$) followed by “knowing what kind of danger in advice” ($\mu = 3.361$), “a comprehensive dating safety manual provided in the app” ($\mu = 3.297$), and “providing local emergency contact for users” ($\mu = 3.168$).

4.2.3 The Importance of Trust in Each Dimension

Our research proposed five dimensions of the trust-inducing framework for dating apps: Company, system, information, matching, and risk. We asked the survey participants how necessary these factors were in evaluating dating apps' trust levels. The result shows that most people think the risk trust dimension (privacy and safety management, $\mu = 3.923$) is the most critical. Following is the matching trust dimension (does the “match” meet my needs, $\mu = 3.729$), and then information trust dimension (other users' profiles authenticity, $\mu = 3.6$), system trust dimension (app design layout and features, $\mu = 3.335$), and company trust dimension (company credibility, $\mu = 3.155$).

5. Discussion

5.1 Advertisement Contents and Company Reputation

Based on our survey results, the impression of dating apps is negative. However, the result shows that if the advertisement content is interesting enough or the dating app's perceived reputation is good, people will engage in dating apps. Thus, well-organized marketing and branding strategy can earn the potential users' trust in the first place.

5.2 System Design Diversity

The system dimension results show that if the system design is diverse, the users' trust also increases simultaneously. For example, the information-based profile layout earned more trust than the photo-based layout, and the diverse matching method earned more trust than the simple one in the matching methods. Moreover, the complicated interaction helps users choose more slowly, increasing the trust level at the same time.

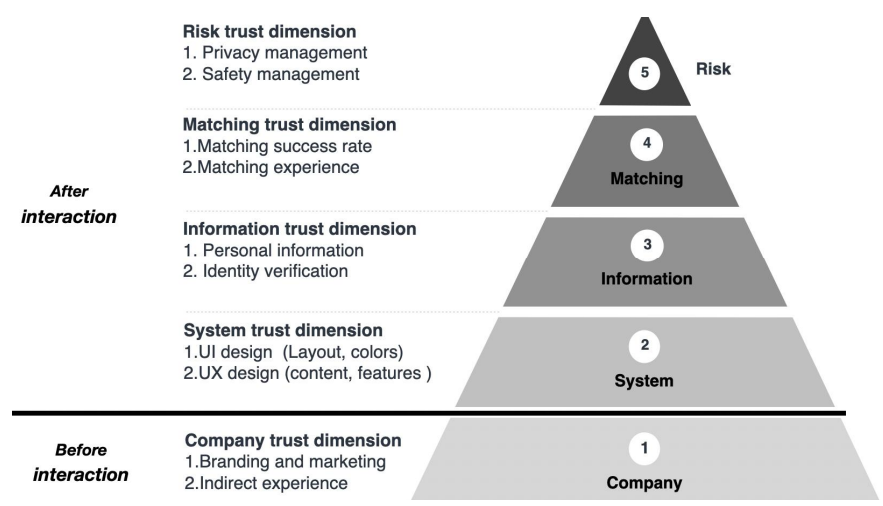
5.3 Other Factors

In the information trust dimension, despite basic background info and detailed self-introduction, profile photos verified by the AI system are also crucial to increasing users' trust. Moreover, recommending the inactive users would have the worst impact on users' trust. In the matching dimension, having a good matching experience, and increasing the matching rate will increase trust. A good report or block system and helping users understand the danger in advice will also increase the trust level in the risk trust dimension.

5.4 Revised Trust Inducing Framework

We revised our trust-inducing framework [Fig. 4] based on the importance of order of trust in each dimension. The baseline is company trust, followed by trust in system, information, matching, and the most important one is risk.

The survey result supports our assumption that branding/marketing influences users' trust most before interacting with dating apps (company trust dimension). After interaction with dating apps, we first considered the system dimension and proposed two-parts - UI and UX design. We found that the more diverse the system design, the more that people trust the system. In the information trust dimension, detailed information and identity verification are vital in solving users' authenticity and increasing the users' trust. We assumed that improving the matching experience and matching rate can increase users' trust in the matching trust dimension. Finally, we suggested that the risk trust dimension be classified into safety and privacy, and based on data from previous studies, we also assumed that this part is the last and most important trust dimension. The results provide support for most of our assumptions in the risk management dimension.



[Fig. 4] Revised Trust-Inducing Framework

6. Conclusion

This paper provided an overview of the nature and concepts of trust from a multidisciplinary perspective. We reviewed studies and literature relating to elements of online trust and dating apps and proposed a trust-inducing framework for dating apps. We then synthesized the trust-inducing features for dating apps and identified five dimensions: company trust, system trust, information trust, matching trust, and risk trust. We conducted an online survey to test our proposed framework about each trust-inducing dimension. Based on the results of our study, we developed a revised trust inducing framework.

While our revised trust-inducing framework is supported by this study, it is important to note that the study samples were collected from people who lived in Korea only. Therefore, this framework might fit in Korean society, but if applying to other countries, there might be some cultural differences. Future research could consider combining other methods to increase data quality. Another consideration is that providing another way to date through new technology may create new trends and cause new trust issues. Future research can refer to our dating app trust-inducing framework in developing new research models.

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