

# Trust the Ethical Principle of Virtual Interactions: Designing a Dynamic Model of Factors Affecting the Trust of Social Network Users

Seydeh Nasrin Taghizadeh Shiadeh <sup>1</sup>, Abolfazl Danaei <sup>2\*</sup>, Seyyed Mohammad Zargar <sup>2</sup>

<sup>1</sup> Ph.D. Student in Media Management, Semnan Branch, Islamic Azad University, Semnan, Iran.

<sup>2</sup> Department of Media Management, Semnan Branch, Islamic Azad University, Semnan, Iran.

**Corresponding Author:** Abolfazl Danaei, Department of Media Management, Semnan Branch, Islamic Azad University, Semnan, Iran. E-mail: [a.danaei@semnaniau.ac.ir](mailto:a.danaei@semnaniau.ac.ir)

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## Abstract

**Introduction:** User trust is one of the main ethical principles that affect the success or failure of a social network platform. Therefore, the main goal of this research is to identify the main factors affecting users' trust and solutions to compensate the lost trust among the users of this social network.

**Material and Methods:** The current research was applied and among post-event researches. The statistical population of this research was media and communication experts who were selected using a random sample of 52 people. The questionnaire tool was made by the researcher. Data analysis was done with Kolmogorov-Smirnov test, Friedman test and dynamic systems analysis, and SPSS and Vensim simulation software were used.

**Results:** In this research, 34 factors affecting trust in social networks were investigated. The most important of which were internet fraud, the release of malicious software, the disclosure of personal information, the type of social networks and adherence to ethical principles, etc., and things such as cooperation and coordination between people, responsibility and commitment, benevolence, excessive use of social media in priority. The validity of this model was proved by evaluating the appropriateness of the model boundary based on the purpose of the model and ensuring the realistic behavior of the model under limit conditions.

**Conclusions:** It is possible to increase the trust of users as well as the solutions for breaching data and privacy of users through the construction of cause-and-effect loops and finding the root of their main causes. Also, the effective factors and its solutions in the form of three balance circles were investigated.

**Keywords:** Ethics, Virtual Interactions, Social Networks, Trust

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## INTRODUCTION

Trust is one of the most important and influential ethical principles in social media. Trust is important because user information is generated, stored, and shared in social media [1]. Previous studies in the field of trust have shown that if the trust of users and customers from a media or business is lost, returning the lost trust is a very difficult, costly and time-consuming task for that social network [2]. A researcher has said that trust is like a soul that if it is lost, it will never come back [3]. Users' trust in institutions and organizations is different based on the type of product or service they provide. On the other hand, as the level of users' trust in organizations decreases, as a result, it leads to a decrease in their use of social media platforms [4-6]. According to the studies, if users notice the unauthorized and inappropriate use of

their personal information in social networks, as a result, they will lose their trust in these networks due to the violation of their data and privacy. Therefore, gaining or losing trust changes the behavior of the audience in social networks [7]. The same thing happened to Facebook in previous years. According to surveys conducted in the United States and Germany, it was shown that even with Mark Zuckerberg's (Facebook CEO) apology, users of this network have lost their trust in social media, especially Facebook, regarding privacy [8]. If the trust of users decreases in social media, there will be high effects on the performance of brands, companies and organizations, so social media is much more destructive and complex than traditional media [9]. One of the main causes of these complications and the aggravation of the

dangers of social media is the rapid sharing of news between users in these networks [10]. According to the surveys, users are motivated to interact more with social networks by sharing information and social support [11]. On the other hand, these risks caused by users' lack of confidence regarding their privacy lead to risks and concerns for them [12]. Restoring the lost trust of users in social networks is not only caused by the media platform itself, but also caused by any violations caused by brands and organizations that operate in this network, and as a result, users suffer in interacting with them [13].

Considering the importance of trust in social networks, this research aims to:

Identifying the effective variables of trust in social networks

Simulating and presenting a dynamic model to investigate factors affecting trust in social networks

## MATERIAL AND METHODS

The current research was practical and among ex-post facto researches. The statistical population of this research is faculty members of Tehran University, Tehran Azad University (Faculty of Media Studies), Tehran Azad University of Science and Research, Humanities and Social Studies Research Institute, Payame Noor University (Department of Media Management), Allameh Tabatabai University (Communications Group) which was used using a random sample and the sample size was obtained using Cochran's formula equal to 52 people. The questionnaire was made by the researcher. The validity of the questionnaire was checked with Cronbach's alpha. The overall Cronbach's alpha of all questions is equal to 0.961, which indicates a high correlation between the questions of the questionnaire. Data analysis was done with Kolmogorov Smirnov test, Friedman test and dynamic systems analysis and SPSS software and Vensim simulation were used.

## RESULTS

### Data Distribution

#### Kolmogorov-Smirnov Test

Considering that qualitative data cannot have a normal distribution due to lack of quantitative continuity, therefore they have a non-normal distribution. However, in order to ensure the distribution of the data, the Kolmogorov-Smirnov test was used to check the distribution of the data, the results of which are summarized in Table 1.

**Table 1.** Kolmogorov-Smirnov test output

<b>Number of Respondents</b>	<b>52</b>
<b>Mean</b>	<b>3.93</b>
<b>SD</b>	<b>0.565</b>
<b>Kolmogorov-Smirnov</b>	<b>1.523</b>
<b>Sig.</b>	<b>0.019</b>

The null hypothesis in the Kolmogorov-Smirnov test is that the distribution of research data is normal. The most important part of the output of the Kolmogorov-Smirnov test is the significance level, which is the p-value or the probability of the test. Considering that the significance level is less than five percent, as a result, the null hypothesis is rejected at a significance level of 5%. A significant value (0.19) means that the null hypothesis, which is the desired sample of normal distribution, does not exist and the data distribution is abnormal. As a result, we have to use non-parametric tests that do not make any special assumption about the distribution of the population in non-parametric tests. One of the non-parametric tests is the Friedman test, which is used to prioritize research variables and is discussed in the next section.

### Prioritizing Research Criteria

According to the Friedman test, the criteria of the questionnaire, which includes the effective factors of trust and risk on individual behaviors in social networks, were prioritized. The results of this test are given in Table 2.

According to the opinions of academic experts and professors, the prioritization of research criteria through the Friedman test, in order of the criteria of Internet fraud, the release of malicious software, the disclosure of personal information, has been the most important of the impact of trust and risk on individual behaviors in social networks. According to these results, the providers of services and products in social networks should increase the trust of users and as the level of people's trust in social networks increases, the risks created such as internet frauds, the release of malicious software, and the disclosure of personal information will decrease. Meanwhile, the type of social networks is one of the effective factors of trust and risk due to the interaction and communication of more people in those networks at any point of time and their acceptability and adherence to ethical principles, which causes users to first accept that social network and its products and services (social network acceptance behavior). After the acceptance stage, they share that product and service with other people and these behaviors lead to purchasing behavior in users.

Table 2. Ranking of research criteria using Friedman's test

Research Variables	Ranking of Criteria
Internet fraud	1
Release of malicious software	2
Disclosure of personal information	3
Type of social networks	4
Adherence to ethical principles	5
Social network hacking	6
Interaction of social network users	7
Accountability of the company and organization	8
Lack of legal framework for social network activities	9
Generating useful and free content	10
Word of mouth advertising	11
Quality of service	12
The fame	13
Misbehavior of employees	14
Proper control and monitoring of social media	15
Individual and organizational honesty	16
Choosing the right place for recreation and tourism through social networks	17
Meet customer expectations	18
Transparency of the company, organization and seller of services and products	19
Adequate warranty	20
Safety of social networking platforms	21
Customer loyalty	22
Skills and competencies of service providers	23
Efficiency and productivity of employees	24
Dissemination of false, incorrect and unscientific information	25
Customer opinions about products and services	26
Easy to learn	27
The timeliness and completeness of the generated data	28
Staff ability	29
Cooperation and coordination between people	30
Responsibility and commitment	31
Benevolence	32
Excessive use of social media by employees during working hours	33
The concentration of employees in the company and organization	34

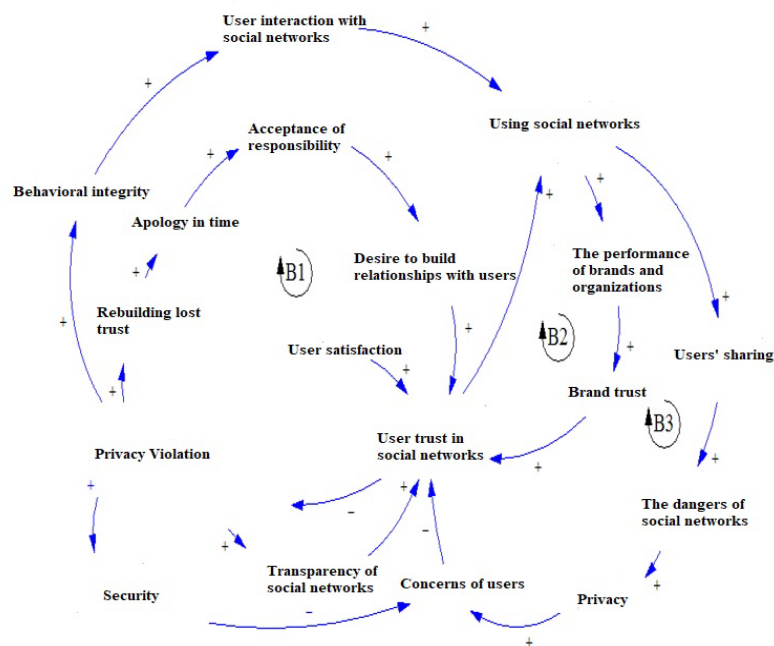


Figure 1. Conceptual model of cause and effect of trust and solutions to rebuild the lost trust of users in social networks

**Table 3.** Validation tests used in the model

Test	Goal	How to use the model
<b>Sufficiency of the border</b>	Assessing the appropriateness of the model boundary based on the goal of the model	<ul style="list-style-type: none"> <li>-Data from project documents, interviews with stakeholders and literature were used to verify the model boundary.</li> <li>-The purpose of the model was to determine the boundary of the model and endogenous, exogenous and excluded variables.</li> <li>-Ensuring the inclusion of important feedback through interviews with project team members and literature reviews</li> </ul>
<b>Boundary conditions</b>	Ensuring the realistic behavior of the model under limit conditions	<ul style="list-style-type: none"> <li>-Applying various boundary conditions to the model, including changing the reliability and stability of activities to the lowest value, reducing project resources to zero, and reducing the internal and external sensitivity of activities to zero.</li> <li>-The simulation results showed that the behavior of the model is realistic against these changes.</li> </ul>

### *Designing a dynamic model using the system dynamics method*

In this section, the cause-and-effect relationships affecting users' trust in social networks were identified through articles and literature researches and questionnaires and interviews in the case study of the research and presented in the form of the following diagram using Vensim simulation software.

After the simulation, the validity of the created model was checked by several tests, the results of which will be shown for the desired model in [Table 3](#).

## DISCUSSION

The findings of the research showed that one of the appropriate solutions for rebuilding the lost trust of users is a timely apology to users for the incident. This apology of the platform shows its acceptance of responsibility and concern for the platform's mistake. Definitely, the administrators of this social network are more willing to build relationships with users after acceptance to increase trust. (According to the results of ring B1). In this regard, various researches have been conducted in each direction of this circle. Social media privacy concerns affect the use of the online platform [14]. On the other hand, the effects of a timely apology play an important role in restoring damaged trust [15]. Preservation of privacy and concerns of users to use technologies such as social networks is a necessary and key issue [16]. Findings have indicated that maintaining privacy is not possible without building trust and also rebuilding lost trust. All the relationships between the variables from the previous specific researches, along with the case study of the present research, were addressed to find the root causes affecting users' trust in social networks using the systems thinking approach. Also, because social networks are very complex and dynamic, the role of creating trust in users is very important and necessary, and it is possible that during the activity of this social network (currently Instagram), there are many risks and risks, including the role of data

and privacy. There are users for that. Therefore, in order not to lose the trust of users with justified or unjustified mistakes, we should look for predictions to compensate for the lost trust from now on. In the same way, we identified solutions such as a timely apology to users, creating behavioral integrity and transparency of the social network with our users as the main solutions for data breaches and also rebuilding the lost trust. Also, according to circle B2 that you saw in the cause and effect diagram, after the data breach and in fact the disclosure of users' personal information, behavioral integrity as well as users' interaction with social networks leads to more users using the social network platform, and this more use can Create a suitable field and environment for the performance of different business brands in this social network. As a result, if different brands, companies and organizations have more and more effective activities to get to know themselves to more people on this Instagram social network platform, their brand trust will increase. As a result, users have more trust in brands, which leads to an increase in their trust in the social network (loop B2). On the other hand, more people using social networking platforms (such as Instagram) lead to sharing behavior caused by more content production (information or product knowledge) through users; But these rapid sharing inevitably lead to more and faster risks. Because just as this network can transmit good content and products, it can also transmit negative or false or wrong news. These cases are also among the inherent and dynamic complexities of social networks, which increase the concern of users. As a result, the more concerned users are, the less trust they will have in these networks (according to circle B3). Also, according to previous studies, social media platforms were not initially thought of as news consumption channels, but news media organizations have used their capabilities to disseminate news and create opportunities for audiences to interact with journalists and media organizations [17]. As more people around the world get their news from social media, there are legitimate

concerns about the spread and possible effects of seemingly legitimate misinformation and its potential implications for elections and democracy. Therefore, in recent years, media education researchers have emphasized the need of citizens for news literacy to understand how news is produced and to evaluate the authenticity of the news they come across [18]. Considering the importance and necessity of trust among users, in addition to identifying factors and factors affecting the level of trust, brands, companies and organizations should also pay attention to the important issue of lost trust, along with the founders of this platform. Do what is necessary before it happens. Lost trust is actually like an earthquake, which if not planned and predicted in advance, will lead to a crisis. As a result, we have to anticipate and have specific strategies for the lost trust in advance. The same earthquake and incident happened to the Facebook network in previous years, and if we don't learn from it, we will see it again in other social networks like Instagram. The lost trust cannot be restored suddenly and its reconstruction It requires strategic solutions. As you can see in the results of this research according to the cause and effect diagram, the reactions of that network or brand after the lost trust is of great importance. Among these factors identified for rebuilding lost trust are timely apologies and transparency with users. In this regard, other studies have been conducted that show that an apology can help gain credibility and build self-confidence. This is consistent with business leader actions that show that an apology after an honest action plan gives users the

impression that the business entity has been able to control the credit recovery process [17]. In the current research, it examines users' trust in the social network platform itself, as well as users' trust in organizations, brands, and companies that operate as influencers on that platform. Trust affects the behavior of users in the space of social networks, and if this trust is lost, then the behavior of users will also change.

## CONCLUSION

It is possible to increase the trust of users as well as the solutions for breaching data and privacy of users through the construction of cause and effect loops and rooting their main causes. Also, the effective factors and its solutions in the form of three balance circles were investigated and rooted. According to the results of the study, the more users' trust in social networks increases, the less worried users are about revealing their information and protecting their privacy. But if the privacy of users is compromised, the managers of the social network platform in question should look for appropriate strategies to restore the lost trust of users.

## Ethical Considerations

Ethical issues (such as plagiarism, conscious satisfaction, misleading, making and or forging data, publishing or sending to two places, redundancy and etc.) have been fully considered by the writers.

## Conflict of Interest

The authors declare that there is no conflict of interests.

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