

# Understanding Factors Affecting Users' Information-Sharing Intention on Social Networking Sites: The Role of Gender Differences

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**Abstract**—This study draws upon the theory of reasoned action (TRA) and applies social role theory (SRT) to provide an investigation into whether there are significant differences between female and male users in terms of the determinants of information-sharing intention. An empirical survey was conducted, and 417 valid questionnaires were collected from Facebook (FB) users in Taiwan and multiple-regression analysis was used. The results showed that subjective norms, user attitudes, and social presence effectively influence information sharing intention and the influence of subjective norm and social presence on information-sharing intention are associated with gender differences. Specifically, subjective norm, social presence, and attitudes have stronger influences on information-sharing intention among male users. Finally, implications for research and practice are offered.

**Keywords**—*Social networking sites; Gender; Subjective norm; Social presence; Information-sharing Intention*

## I. INTRODUCTION

People are increasingly sharing a variety of information on social networking sites (SNSs) with friends, family, and work colleagues. The success of SNSs are largely dependent on sustainable user participation. Thus, understanding factors affecting users' information-sharing intention toward SNSs is

both meaningful and important. By analyzing the relevant theoretical literature in the field of SNSs, this study found that the Theory of Reasoned Action (TRA) is widely used as a scientific behavioral theory to study user perceptions and behavioral intentions [1]. Consequently, this study draws upon the TRA, and a conceptual model is developed to assess the factors affecting users' information-sharing intention toward SNSs. Moreover, Hajli et al [2] stated that information searching and social presence (the sense of warmth and sociability within SNSs) can enhance users' information-sharing intentions. These factors affecting users' information-sharing intention on SNSs have important implications for theoretical development of SNSs provider guidelines [3]. Therefore, TRA and social presence constructs were employed in this study to examine how they are related to information-sharing intention.

Prior studies indicate that men and women based their decisions regarding continued information technology usage on different factors or different weights of the same factors [4, 5]. Zhang et al. [6] stated that gender may affect the way people share their information online and how they use this information to make their decisions. For example, women are more likely to express their opinions subjectively and to express their emotions than men. Nonetheless, previous studies about information sharing have generally assumed that both genders make decisions on information sharing equivalently [7-9]. This suggests that the role of gender differences in information systems research is not clearly defined [9, 10]. In order to bridge this

gap, this study is conducted to explore the role of gender differences in information-sharing intention and to provide firms with further insights into how to promote their products and services more efficiently [11, 12].

## II. THEORETICAL FOUNDATION AND RESEARCH HYPOTHESES

### A. Theory of reasoned action and conceptual model

The theory of reasoned action (TRA) was proposed by Fishbein and Ajzen [13]. It is based on the proposition that individual's behavior is determined by their intention to perform that behavior [14]. Behavioral intention is affected by an individual's attitude toward a behavior and subjective norms related to engaging in a particular behavior. Attitude reflects the degree to which one has a positive or negative evaluation of a given behavior. The perceived social pressure from coworkers, friends, and family members to engage in or not engage in a certain action is referred to as a subjective norm [15, 16]. Lin and Wang [9] indicated that the TRA has been used by IS researchers due to its application to technology adoption, and the results have suggested that an individual's intention toward technology adoption is determined by that individual's attitude and subjective norms [17]. Due to the fact that the TRA provides an important fundamental conceptual model by which to systematically explore salient factors posited to affect information-sharing decisions on SNSs, it is appropriate for use as the primary theoretical basis for this study.

Moreover, social presence is an important concept on social platforms since immediacy and intimacy enhance the perceptions of warmth on SNSs, which can create a more comfortable and accessible environment among users [2]. Therefore, social presence is considered as a factor contributing to information sharing on SNSs in the present study. Fig. 1 shows the research model used in this study.

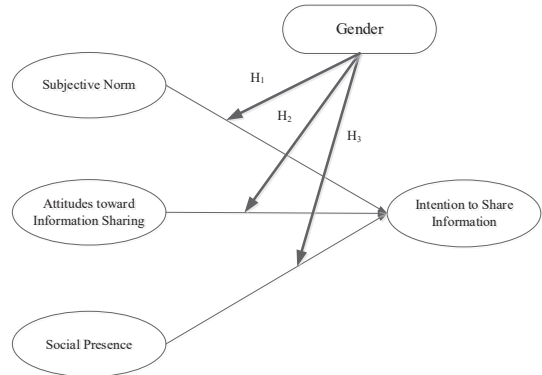


Fig. 1. Research Model

### B. Social role theory (SRT) and gender

Based on social role theory (SRT), individuals assume certain 'gender roles' that are related to societal and cultural expectations, stereotypes, and permitted forms of behavior [18]. SRT suggests that behavioral differences between males and females originate from the social roles they play in daily life [12]. In other words, gender roles are the key causes of behavioral differences in people within a given environment. These behavioral differences are due to the typical characteristics of roles commonly held by women versus men [19]. SRT has also been confirmed to be valid in terms of exploring gender differences in information systems disciplines. For example, Zhang et al. [20] studied gender differences in bloggers' service-switching behavior and demonstrated that gender differences existed in terms of both the effects of satisfaction and the attractiveness of alternatives with respect to their intention to switch. In a more recent study, SRT was used to investigate the role of gender differences on information disclosure intention in location-based services [21]. Due to the fact that this study focuses on online users' information-sharing behavior on SNSs, which is typically viewed as a social-technical system [9, 22], to examine gender differences theoretically related to individual reactions to information sharing behavior in a social-technical system, social role theory is thus suitable as a theoretical foundation for explaining gender differences in this study.

According to the TRA, individuals may choose to engage in a behavior to comply with people who are important to that individual [13]. Eagly and Wood [23] indicated that females and males are different in terms of the degree to which they can be affected by others, where females tend to agree more with others or obey rules as compared to males. Prior studies have showed significant gender differences regarding the effects of attitude on behavioral intention [24, 25]. For example, men tend to post more informational items as compared to women, where women tend to focus more on discussion and personal, and supportive items. Men often use electronic communication for reporting and women tend to use it for rapport building [26]; women are believed to be more concerned about their relationships across members, whereas men tend to be more concern in terms of online knowledge sharing [27]. In terms of online communication, women are more likely than men to convey subjective thoughts and emotions [6]. Women show communally friendly behavior patterns, indicating that they prefer to act in social-and people-oriented environments [11]. Men, on the other hand, prefer an assertive and independent behavioral pattern, indicating that they prefer to act in task-oriented environments [9]. Lin and Wang [9] posited that men are more technology- and task-oriented and women are more social- and people-oriented on SNS platforms. Li et al. [21] argued that males and females may perceive distinct location-based service benefits differently, resulting in varied information disclosure intentions. Gefen and Straub [28] stated the gender differences affect perceptions of social presence. Similarly, in the same national culture, women have been found to have a greater sense of social presence than men. Gefen and Straub [29] showed gender differences in adoption and use of computer-mediated communication and the Internet. Ahuja and Thatcher [4] indicated that autonomy and perceived overload are likely to influence innovation efforts in information technology and will be stronger in men than in women. Thus, in this study, it is assumed that

the moderating effect of gender differences impact the effects of subjective norms, attitudes, and social presence on information-sharing intention. Thus, the following hypotheses are proposed:

**H1: The relationship between subjective norms and information-sharing intention will be influenced by gender differences.**

**H2: The relationship between attitudes toward information sharing and intention will be influenced by gender differences.**

**H3: The relationship between social presence and information sharing intention will be influenced by gender differences.**

### III. RESEARCH METHODOLOGY

#### A. Sample and data collection procedure

Facebook was chosen for this study both because it is popular and also because it has a great impact on online user behavior and prospective commercial values. The target respondents were users who have had experience with SNSs and have shared information about someone they met online. All of the participants were Facebook users. Purposive sampling was thus used in this work in order to ensure that the respondents had a high level of willingness to take part. An online survey was given to the target respondents and was delivered via SNSs and e-mail to invite voluntary participants in Taiwan. They were asked questions about their perceptions of Facebook usage, which is one of the most popular SNSs in Taiwan. The questionnaire was sent to the respondents on July 16, 2021, and 419 responses were returned by July 23, 2021. Of these, two were deemed invalid because the respondents had no experience with information-sharing, leaving a total of 417 valid questionnaires. Table I shows the respondents' demographic profile, which includes data on the respondents' gender, age, education level, marital status, occupation, and duration of FB usage.

TABLE I. DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS (N= 417)

| Percentage of respondents |                           | Percentage of respondents |   |                         |      |
|---------------------------|---------------------------|---------------------------|---|-------------------------|------|
| Gender                    | Male                      | 37.2                      | Student                                 | 5.8                     |      |
|                           | Female                    | 62.8                      | Government sector                       | 6.5                     |      |
| Age                       | ≤ 19 years old            | 1.0                       | Service industry                        | 41.7                    |      |
|                           | 20-29 years old           | 23.5                      | Manufacturing industry                  | 23.5                    |      |
|                           | 30-39 years old           | 46.0                      | Financial industry                      | 6.9                     |      |
|                           | 40-49 years old           | 24.2                      | High tech industry                      | 7.0                     |      |
|                           | ≥ 50 years old            | 5.3                       | Other                                   | 8.6                     |      |
| Education level           | High school and below     | 11.0                      | < 1 year                                | .7                      |      |
|                           | College                   | 13.9                      | Years of using Facebook (FB) experience | ≥ 1 year and < 3 years  | 3.4  |
|                           | University                | 65.0                      |   | ≥ 3 years and < 5 years | 11.7 |
|                           | Master's degree and above | 10.1                      |   | ≥ 5 years               | 84.2 |
| Marital status            | Single                    | 57.3                      |   |                         |      |
|                           | Married                   | 42.4                      |   |                         |      |
|                           | Other                     | .3                        |   |                         |      |

**B. Measurements**

Established scales were adapted from prior literature and then modified to fit the SNS context in this study. Each item was measured using a seven-point Likert-type scale ranging from 1 = “completely disagree” to 7 = “completely agree”. The term ‘subjective norms’ was defined as a combination of perceived expectations of influential persons and individual perceptions that influential persons who are important to him/her should or should not share information on SNSs [13, 30]. The measures of subjective norm were adapted from Koohikamali et al. [15], Cheung and To [16] and Mishra et al. [31]. Attitude towards information-sharing in this study was defined as a set of beliefs about a certain object or an act measured by the degree to which an individual has a positive or negative evaluation of his/her information-sharing behavior on SNSs [13]. The measures of attitude toward information-sharing were adapted from Koohikamali et al. [15], Cheung and To [16], and Lin and Wang [9]. Information-sharing intention in this study was defined as a person’s relative degree of willingness to share information on SNSs [13, 32]. The measures of intention to share information were adapted from Cheung and To [16], Lin et al. [12], and Lin and Wang [9]. Social presence in this study was defined as the degree to which SNSs are able to establish an individual connection with a user [33]. The measures of social presence in

SNSs were developed based on Lin and Wang [9] and Spence and Helmreich [34]. Based on SRT, gender in this study is defined as a set of socially constructed characteristics that a society considers suitable for individuals of a particular sex [9, 34, 35]. Before formally collecting the data, a pilot test was administered to validate the instrument. Minor wording discrepancies were discussed and resolved. The measurement items and the source for each construct are listed in Table II.

TABLE II. MEASUREMENT ITEMS FOR PRINCIPAL CONSTRUCTS

|   |
|---|
| <b>Subjective norm [15, 16, 31]</b>   |
| SN1 A large percentage of my friends share information on SNSs.                                 |
| SN2 I share information on SNSs because my close friends do.                                    |
| SN3 I share information on SNSs because my colleagues do.                                       |
| SN4 I share information on SNSs because my family members do.                                   |
| <b>Attitude [9, 15, 16]</b>   |
| ATT1 It is a good idea to share information on SNSs.  |
| ATT2 I think that sharing information on SNSs is fun.   |
| ATT3 I think that sharing information on SNSs is pleasant.                                      |
| ATT4 I think that sharing information on SNSs is meaningful.                                    |
| <b>Social presence [9, 34]</b>  |
| SP1 I feel that I have a personal experience when I use SNSs for sharing information.           |
| SP2 I feel a sense of human warmth when using SNSs for sharing information.                     |
| SP3 I feel a sense of sociability when using SNSs for sharing information.                      |
| SP4 I feel a sense of human sensitivity when using SNSs for sharing information.                |
| <b>Information-sharing intention [9, 12, 16]</b>  |
| IN1 I will always try to share information on SNSs in the future.                               |
| IN2 I often think about sharing information on SNSs.  |
| IN3 It is very likely that I will spend more time sharing information on SNSs in the future.    |
| IN4 It is very likely that I will seek more chances to share information on SNSs in the future. |

**IV. DATA ANALYSIS AND MODEL ESTIMATION RESULTS**

A quantitative web-based survey study was conducted to statistically test the factors affecting users’ information-sharing intention on SNSs and the role of gender differences among subjective norm, social presence, information sharing attitudes, and information-sharing intention.

**A. Measurement model evaluation**

An item analysis was conducted to improve the quality and accuracy of the measurement items. Furthermore, each construct was measured using an exploratory factor analysis (EFA) in order to verify the construct validity of the level of subjective norms, attitude, information-sharing intention, trust and social presence, as well as to determine whether each item

attribute within each construct was consistent with the related theory. The results showed that the factor loadings for items SN1, ATT1, IN1, and SP1 were below 0.6, and thus these items were excluded from further analysis [36]. The results of the factor and reliability analyses are presented in Table III, which shows that the factors and theoretical framework are coherent, meaning that an acceptable level of construct validity was achieved [37]. Regarding reliability, the Cronbach's  $\alpha$  was 0.954, while the item-to-total correlations were all higher than 0.639, showing that each item had good consistency and validity [38]. The measurement model of this study achieved good unidimensionality [39].

TABLE III. RESULTS OF THE FACTOR ANALYSIS AND RELIABILITY

| Construct                     | Items | Factors |      |      |      |      | Convergent Validity (Item-to-total correlations) | Reliability (Cronbach's alpha) |
|-------------------------------|-------|---------|------|------|------|------|--|--------------------------------|
|                               |       | 1       | 2    | 3    | 4    | 5    |  |                                |
| Subjective norm               | SN3   |         | .832 |      |      |      | .788   | .869                           |
|                               | SN4   |         | .770 |      |      |      | .723   |                                |
|                               | SN2   |         | .758 |      |      |      | .737   |                                |
| Attitude                      | ATT3  |         |      | .800 |      |      | .819   | .894                           |
|                               | ATT4  |         |      | .762 |      |      | .772   |                                |
|                               | ATT2  |         |      | .757 |      |      | .784   |                                |
| Social presence               | SSP2  |         |      |      | .770 |      | .809   | .954                           |
|                               | SSP3  |         |      |      | .754 |      | .837   |                                |
|                               | SSP4  |         |      |      | .737 |      | .791   |                                |
| Information-sharing intention | IN3   |         |      |      |      | .768 | .845   | .918                           |
|                               | IN4   |         |      |      |      | .740 | .854   |                                |
|                               | IN2   |         |      |      |      | .693 | .808   |                                |

Kaiser-Meyer-Olkin = 0.939, % of Variance = 84.646, Bartlett's Test of Sphericity = 0.000

### B. Results of the regression analysis

The properties of the four proposed research constructs were tested with linear regression analysis. The results of the multiple-regression analysis are shown in Table IV. According to Table IV, the  $\beta$  values for subjective norms, social presence, and attitudes toward information-sharing intention were 0.230, 0.397, and 0.379, respectively. The adjusted R<sup>2</sup> was 0.639, and the explainability for all variables was adequate. Subjective norms, social presence, and attitudes toward information-sharing all had significant effects on information-sharing intention (p-values were all 0.000). It means that influences of subjective norms, social presence, and attitudes toward information-sharing have positive effects on the degree of information-sharing intention.

TABLE IV. RESULTS OF THE MULTIPLE-REGRESSION ANALYSIS

|                         | VIF   | Information-sharing intention |        |      |          |       |
|-------------------------|-------|-------------------------------|--------|------|----------|-------|
|                         |       | $\beta$                       | Std. E | Beta | T-value  | VIF   |
| Constant                |       | -.138                         | .192   |      | -.720    |       |
| Subjective norm         | 1.738 | .230                          | .041   | .225 | 5.650*** | 1.825 |
| Social presence         | 2.106 | .397                          | .047   | .363 | 8.425*** | 2.136 |
| Attitude                |       | .379                          | .051   | .325 | 7.369*** | 2.238 |
| F                       |       |                               |        |      | 246.891  |       |
| P value                 |       |                               |        |      | .000     |       |
| Adjusted R <sup>2</sup> |       |                               |        |      | 0.639    |       |
| Durbin-Watson           |       |                               |        |      | 1.852    |       |

### C. The moderating role of gender differences

The assessment of the moderating role of gender differences was conducted separately for the male (n = 155) and female (n = 262) subgroups, as recommended by Ahuja and Thatcher [40], Carte and Russell [41], and Saleem et al. [42]. Table V presents the results of the moderating roles of gender differences. According to Model 1, the positive relationship between subjective norms and information-sharing intention was stronger for men than for women ( $\beta_{\text{male}} = 0.793$ ,  $\beta_{\text{female}} = 0.577$ ). The Z-value was 2.872 (p < 0.01) under subjective norms and information-sharing intention, meaning that there was a significant difference in the influence of subjective norms on information-sharing intention with regard to the male and female subgroups. Therefore, the results provided support for hypothesis H1. According to Model 2, the positive relationship between social presence and information-sharing intention was stronger for men than for women ( $\beta_{\text{male}} = 0.881$ ,  $\beta_{\text{female}} = 0.731$ ). The Z-value was 2.005 (p < 0.05) under social presence and information-sharing intention, meaning that there was a significant difference in the influence of social presence on information-sharing intention with regard to the male and female subgroups. Therefore, the results provided support for hypothesis H2. According to Model 3, the positive relationship between attitudes toward information-sharing and intention was stronger for men than for women ( $\beta_{\text{male}} = 0.874$ ,  $\beta_{\text{female}} = 0.803$ ). The Z-value was 0.887 (p > 0.05) under attitudes toward information-sharing and intention, meaning that there was not a significant difference in the influence of attitudes toward information-sharing on intention with regard to the male and female subgroups. Therefore, hypothesis

H3 was not supported.

TABLE V. RESULTS OF THE MODERATING ROLES OF GENDER DIFFERENCES

| Model 1                                 |        |      |         |   |        |      |         |                                |  |
|---|--------|------|---------|---|--------|------|---------|--------------------------------|--|
| Y: Information-sharing intention (Male) |        |      |         | Y: Information-sharing intention (Female) |        |      |         | Difference between coefficient |  |
| $\beta$                                 | Std. E | Beta | T-value | $\beta$                                   | Std. E | Beta | T-value | Z-value                        |  |
| Constant                                | .992   | .276 | 3.596   | 2.244                                     | .248   |      | 9.033   | 2.872**                        |  |
| Subjective norm                         | .793   | .056 | .751    | 14.067                                    | .577   | .050 | .583    | 11.570                         |  |
| Model 2                                 |        |      |         |   |        |      |         |                                |  |
| Y: Information-sharing intention (Male) |        |      |         | Y: Information-sharing intention (Female) |        |      |         | Difference between coefficient |  |
| $\beta$                                 | Std. E | Beta | T-value | $\beta$                                   | Std. E | Beta | T-value | Z-value                        |  |
| Constant                                | .433   | .289 | 1.498   | 1.341                                     | .247   |      | 5.425   | 2.005*                         |  |
| Social presence                         | .881   | .058 | .778    | 15.322                                    | .731   | .048 | .688    | 15.296                         |  |
| Model 3                                 |        |      |         |   |        |      |         |                                |  |
| Y: Information-sharing intention (Male) |        |      |         | Y: Information-sharing intention (Female) |        |      |         | Difference between coefficient |  |
| $\beta$                                 | Std. E | Beta | T-value | $\beta$                                   | Std. E | Beta | T-value | Z-value                        |  |
| Constant                                | .319   | .301 | 1.063   | .755                                      | .298   |      | 2.531   | 0.887                          |  |
| Attitude                                | .874   | .058 | .774    | 15.111                                    | .803   | .055 | .671    | 14.592                         |  |

\*  $p < 0.05$  ; \*\*  $p < 0.01$

V. DISCUSSION AND IMPLICATIONS

This study was an attempt to explore the factors affecting information-sharing intention on SNSs. This model explained 63.9% of the variance in information-sharing intention on SNSs. Furthermore, the results showed significant moderating effects of gender differences on the relationships between subjective norms and social presence on information-sharing intention.

A. Theoretical implications

The theory of reasoned action (TRA) and social presence are introduced to the context of SNSs to explore the factors affecting information-sharing intention on SNSs. Next, a comparative model of the information-sharing decision process across genders is developed to theoretically explain why these differences exist. Overall, the integration of factors from multiple streams used to explain users' information-sharing intention on SNSs is the core theoretical contribution of this study.

This study introduces a novel theoretical perspective, i.e., social role theory, to explain the relationships among the identified factors. Prior research has examined gender differences in terms of use of information technology. However, these studies have not sufficiently

explained why these differences exist. Thus, integrating the theory of reasoned action, social role theory, and social presence, this study thus investigates gender differences in people's decisions related to information sharing in the context of SNSs. The findings of this study provide a nuanced understanding of the different mechanisms through which the identified factors can enhance users' information-sharing intention on SNSs, as well as providing information for practitioners to help them better engage their targeted stakeholders on SNSs and collect more useful information for business purposes.

This study offers some insights into the role of gender differences in information-sharing intention on social networking sites. When comparing the male and female subgroups (see Table V), the statistical comparison between the female and male path coefficients for hypotheses H1-3 indicated significant differences in the relationship between subjective norm and information-sharing intention, as well as that between social presence and information-sharing intention. However, there were not significant gender differences in the relationship between attitudes toward information-sharing and intention. These results demonstrated the moderating effects of gender paired with subjective norms and social presence on users' information-sharing intention.

B. Implications for practice

The results of the statistical analysis (Table V) indicated that the positive relationship between subjective norm and social presence with information-sharing intention is stronger for men than for women. Fig. 2 and Fig. 3 further show the plots of the significant moderating effects between gender differences and the relevant variables (i.e., subjective norms and social presence) that are factored in when predicting information-sharing intention. Fig. 2 shows that subjective norms were positively related to information-sharing intention in both male and female subjects. The positive relationship between subjective norms and intention to share information was stronger for males than for females. This implied that

in an online environment, male users will be more willing to share information because they believe that a large percentage of their friends, colleagues, and family members share information on SNSs. While Fig. 3 shows that social presence was positively related to information-sharing intention for both genders. The positive relationship between social presence and intention to share information was also stronger for male users than for female users. This implied that in an online environment, male users tend to be more willing to share information when they feel the environment is personal, warm, sociable, and reflects a sense of human sensitivity when information is being shared. Thus, it is suggested that SNSs can apply artificial intelligence or virtual robots to talk to their users in a more interactive way so as to increase the sense of social presence on SNSs [33]. Due to different societal and cultural expectations, men and women assume different social roles that may affect their social behavior [23, 43]. Weiser [44] stated that men use the Internet mostly for entertainment and leisure, while women utilize it most often for interpersonal communication and educational guidance. Women are found to be more willing to discuss their social, family, and romantic relationships both in person and online [11, 45]. Lu et al. [46] argued that competitive experiences narrow the gender gap in trust significantly. When compared to their male counterparts, competitive experiences cause females to become more risk averse, less trusting, and to perform better in more competitive situations. Consequently, gender is an important characteristic and factor to consider when studying information-sharing intention at the individual level [11], SNS providers should strive to enhance subjective norms, attitudes, and social presence through differential gender-specific strategies when deploying their services, which will in turn facilitate information-sharing intention.

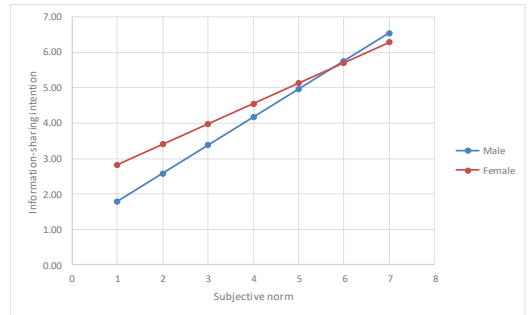


Fig. 2. Moderating effect of gender on subjective norm and information-sharing intention.

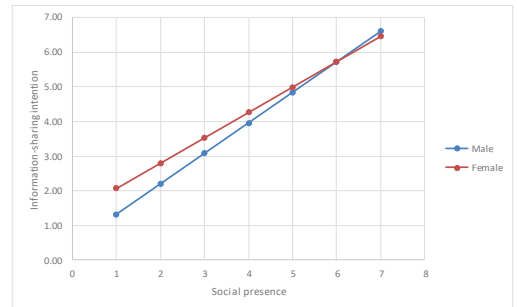


Fig. 3. Moderating effects of gender on social presence and information-sharing intention.

## VI. RESEARCH LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The research model was tested using survey data collected from 417 samples. In order to evaluate the moderating role of gender differences, the full sample was divided into two subgroups and the evaluation was conducted separately for the male ( $n = 155$ ) and female ( $n = 262$ ) subgroups. The sample size may have been too small, thus limiting the power of the statistical analyses. Future research that applies a larger sample size is needed to revalidate the research model. Moreover, the results of the quantitative test verified the factors affecting information-sharing intention on SNSs. This could be verified further using a qualitative study.

## VII. CONCLUSION

Since women and men behave differently due to their distributions into different social roles in specific environments. Gender differences have received little attention from the existing literature on SNSs. This study fills this gap

by highlighting the crucial role of gender in explaining information-sharing intention. A detailed analysis of gender differences and their effects on information-sharing behavior on SNSs will have important implications for both academicians and practitioners. Hence, a baseline model was proposed in the present study that integrated the TRA, social presence, and SRT into the SNS context to systematically examine the effect gender differences on information-sharing intention. Specifically, a comparative model was developed in this study to determine the differences in information-sharing intention across gender. Consequently, this study represents a valuable extension of existing knowledge on gender differences related to information-sharing intentions on SNSs, paving the way to further research in this domain.

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