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Short Research Paper

Why Do Employees Choose to Share Information Publicly? The Evidence from Enterprise Social Networks

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Abstract: More and more interpersonal communication is carried online. In this study, we distinguished two information sharing states: public sharing and private sharing, and identified the factors that influence users' states. Using communication privacy management theory (CPM), we developed a framework to explain the effects of context, motivation, risk-benefit ratio, and some additional characteristics on users' choice of the information sharing states in the context of enterprise social networks (ESNs). The results show that most metrics of context, motivation and risk-benefit ratio are significantly influence the information sharing states. As the first empirical study to classify and compare the information sharing states among users on ESNs, our study enriches the existing literature and opens new avenues for researchers and social networking platforms.

Keywords: enterprise social networks, information sharing, communication privacy management theory, multilevel mixed-effects logistic regression

1. INTRODUCTION

After the outbreak of COVID-19, popular enterprise social networks (ESNs) including Yammer (Microsoft Teams) and Ding Talk have received widespread attention. ESN is a type of SNs used in a business environment to build communication channels between organizations and employees [1]. This study focuses on enterprise internal private social networks (EIPSNs), which are mainly used for internal communication and collaboration among employees. In the process of applying EIPSNs, enterprises often need to interface with other types of SNs, which exposes enterprises to the risk of confidential information leakage, so employees must have a higher sense of privacy protection when using ESNs for information sharing.

“Information sharing on ESNs” is an information behavior, in which two actors with specific relational connections collaborate in information exchange through ESN platforms to achieve individual or common interests[2]. Existing research focuses on the consequences and antecedents of information sharing[3, 4], they pay little attention to the user decisions at the time of information sharing and there is little research on how users choose whom to share with. However, the reality is that users not only need to make decisions about whether to share information, but also need to make careful decisions about with whom they share information[5]. This study further explores the selectivity of the users' information sharing states: public sharing or private sharing. Based on Petronio's communication privacy management theory[6], we capture the factors that influence the users' information sharing states, including context, motivation, risk-benefit ratio, and some additional factors, and use them to develop a selective model to conduct our study.

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2. LITERATURE REVIEW

2.1 Information sharing on ESNs

ESNs allow employees within an enterprise to work and self-manage in a similar way to general SNs in order to achieve efficient, transparent and convenient communication and collaboration among employees. ESNs have empowered employees to participate in editing and creating network content, enabling employees to gradually evolve from recipients and viewers of network information to creators, publishers, sharers and disseminators.[7]

Compared with SNs, users consider information privacy and security issues more when sharing information on ESNs. Previous studies have tended to repeat the consequences and antecedents of information sharing behavior, they studied the impact of information sharing on enterprise value co-creation[8], or discussed the endogenous and exogenous factors affecting information sharing[9]. However, they ignored the fact that users also need to decide carefully with whom to share when judging whether to share information or not. The interviews results of Wang and Fussell[5] acknowledged that users consider audience issues when sharing, they suggested that the key difference between public or private sharing is the user's perception of the information to be shared, but limited by the interview format of their study, they have no way of knowing whether this view is scientific.

Fortunately, the factors considered by existing information sharing studies are still important for our study. These key factors include the reputation of the user[10], the language style of the user[11], and the presentation of the information content[4]. Xu and Yang[12] summarized four categories of factors affecting information sharing, which are also applicable to the study of information sharing states.

2.2 Communication privacy management theory

Communication privacy management (CPM) theory[13] is a very valuable privacy theory in social network communication. Petronio defined privacy boundaries as the process of sharing information from a completely public to a completely private process. Privacy boundaries are governed by privacy rules, which in turn are determined by many factors such as cultural values, gender orientation, motivation, context, and risk-benefit ratio. Among them, cultural values indicate the specific cultural context (e.g., China vs USA[14]); gender orientation implies that men and women have different privacy boundaries; motivation refers to users are driven by clear interests (e.g., get more feedback[15]); context points out the specific situations that users are currently in[16]; and individuals make "mental calculations" by weighing benefits and risks when deciding whether to share information publicly. CPM theory has been used in research related to SNs widely applied and is considered applicable to the study of user information sharing management on ESNs[17].

3. RESEARCH MODEL AND HYPOTHESES

CPM theory suggests that the factors users use to determine what information is publicly shareable are: cultural values, gender orientation, motivation, context, and risk-benefit ratio. Because the data in this study are derived from a single cultural context, we constructed a model based on other categories of factors, as shown in Figure 1.

3.1 Motivation

CPM theory suggests that the users may publicly share information if they are driven by clear interests[13]. Users’ motivation to share information publicly on ESNs is mainly due to the pressure to interact with information, if users have more friends, then the user will feel obligated to share information publicly because of the pressure of interaction, making the number of information publicly shared by the user higher[18].

Hypothesis 1a. The user’s social network size on ESNs is positively related to the public information sharing.

Wang and Fussell[5] pointed out that users are expecting feedback when sharing information, more feedback from others strengthens users’ resolve to share information further publicly, because they believe that, more feedback means that others find the information they share interesting or useful[19].
Hypothesis 1b. the feedback of user’s previous information are positively related to public information sharing on ESNs.

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Hypothesis 1b. the feedback of user’s previous information are positively related to public information sharing on ESNs.

3.2 Context

Through literature combing, we propose the contextual element to refer to the specific situation in which the user is at the current moment, which is reflected by the information content\textsuperscript{[16]}. Four main points related to specific information are given and corresponding hypotheses are proposed. First, whether the information contains textual content is an important observation. If a user shares information that contains textual content, then the privacy of that information response is likely to increase and the user is more likely to choose to share privately. Second, whether the information shared by the user carries appendixes is also widely discussed, if the information contains images, videos or links, it may significantly affect the users’ information sharing states. Third, the higher the number of users are mentioned in the shared information, indicating that the user has a very clear target of information sharing, the more likely the user will choose to share privately. Finally, in Twitter-related studies, whether the tweet is a retweet is highlighted\textsuperscript{[12]}, original information and forwarding information significantly differ in affecting users’ information sharing states. Hence, we reasonably speculate the following four hypotheses.

Hypothesis 2a. Whether a user's information shared on the ESNs contains textual content is negatively related to information sharing publicly.

Hypothesis 2b. Whether a user's information shared on the ESNs carries appendixes is negatively related to information sharing publicly.
**Hypothesis 2c.** The number of other explicitly mentioned users in the information shared by users on the ESNs is negatively related to information sharing publicly.

**Hypothesis 2d.** The post type of the information shared by users on the ESNs is significantly related to information sharing publicly.

### 3.3 Risk-benefit ratio

CPM theory tells us that users must perform a benefit-risk assessment when they choose to share information publicly\(^{(13)}\). On ESNs, users’ attitudes toward benefit-risk are related to previous information sharing experiences\(^{(19)}\). If users choose to share publicly on a regular basis upfront, it indicates that users’ perceived benefits are higher than risks, so they will prefer share publicly in the subsequent information sharing process.

**Hypothesis 3a.** Users’ previous information sharing preferences on ESNs are positively related to the information sharing publicly.

Personalization is generally defined as “the ability to provide tailored content and services to individuals based on knowledge of their preferences and behaviors”\(^{(20)}\). However, the more personal information users provide at ESNs, the higher the risk of exposing privacy, which means personalization is considered an important expression of users’ perceived benefit-risk.

**Hypothesis 3b.** Users’ personalization preferences on ESNs are positively related to the information sharing publicly.

### 4. DATA AND EMPIRICAL RESULTS

#### 4.1 Data description

Our data comes from the EIPSN of an IT company, spanning from April 2013 to April 2018. After data cleaning, we select 93,281 information shared by 125 users as research data in this study. Combining the previous hypotheses and models, the descriptive statistics of the variables used in this study are shown in the table 1.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Abbreviations</th>
<th>Mean</th>
<th>Std.Dev</th>
<th>Min</th>
<th>Max</th>
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<td>t</td>
<td>2693.62</td>
<td>3631.80</td>
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<td>16781</td>
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<tr>
<td>social network size</td>
<td>size</td>
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<td>13.18</td>
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<td>123</td>
</tr>
<tr>
<td>feedback of pre-share information</td>
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<td>5775.04</td>
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<td>27103</td>
</tr>
<tr>
<td>ifcontent</td>
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<td>0.45</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>ifappendix</td>
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<td>2.77</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

#### 4.2 Research method

Our research method is multilevel mixed-effects logistic regression (meqrlogit), which are useful for modeling within-cluster correlations in both longitudinal and panel data. This study considers a two-level model, as shown in equation (1).

\[
\Pr(y_{ij} = 1|u_j) = H(x_{ij}\beta + z_{ij}u_j) \tag{1}
\]

For \( j = 1, ..., M \) users, user \( j \) consists of \( i = 1, ..., n_j \) observations. The response value is the
4.3 Empirical results

This study used stata15 for data analysis. We examined the correlation between the variables, and the variance inflation factors (VIF) results for all variables are strictly less than 10, show that there was no multicollinearity between our independent variables.

Table 3. Empirical results and hypotheses testing results

| Hypotheses          | Odds Ratio | P>|z| | Supported |
|---------------------|------------|-------|-----------|
| H1a: size → states  | 1.097      | 0.000 | Yes       |
| H1b: fopi → states  | 1.000      | 0.000 | No        |
| H2a: ifc → states   | 0.359      | 0.000 | Yes       |
| H2b: ifa → states   | 1.024      | 0.010 | No        |
| H2c: atm → states   | 0.775      | 0.000 | Yes       |
| H2d: ast → states   | 0.531      | 0.000 | Yes       |
| H3a: popi → states  | 16.967     | 0.000 | Yes       |
| H3b: per → states   | 1.041      | 0.706 | No        |

Table 3 shows the results after using multilevel mixed-effects logistic regression. We would like to highlight several interesting findings. First, when making information sharing states decisions, the more direct contacts a user has on the ESNs, the more likely the user is to choose public sharing. Second, users are more likely to choose private sharing if the information they share on ESNs contains exact textual content, and non-original information is more likely to be shared publicly compared to original information, these two results reflect users’ concern for personal privacy information. Third, as the number of users directly mentioned when a user shares information on ESNs increases, the users are more likely share the information privately. This is relevant to the context of our study, where users within ESNs want to both ensure that as many users as possible can receive it accurately and avoid the drawbacks of public sharing. Finally, popi plays a key role in the decision-making process of users’ information sharing states, but as a trichotomous variable, we need to give further analysis and interpretation.

Moreover, the underlying reason why H1b is not supported is that the odds ratio is not well explained, which requires in-depth analysis. H2b and H3b likewise need further explanation and discussion, which will be added in the next study.

5. CONCLUSIONS

This study applies CMP theory in the context of ESNs to elucidate the influence of motivation, context, and risk-benefit perceptions on user information sharing states, providing some evidence for key antecedents of user information sharing states. Using multilevel mixed-effects logistic regression, this study partially validates the importance of the relationship between influencing factors and users’ information sharing states.

This study shifts the focus of information sharing behavior research to users’ information sharing states decisions, and explores the influence of some key factors on users’ information sharing states in the relatively emerging ESN context. It is expected to provide new ideas and theoretical support for information sharing and ESN-related research, and open up a new way for academia and industry to understand users’ information sharing behavior, which is conducive to maximizing the value of enterprise knowledge management.

This study also has some limitations and directions for further research. For example, the measurement of some variables is still crude, the user’s personalization (per) is obtained by summing multiple binary variables,
but the information lack of secondary data makes the measurement unsatisfactory. Therefore, future studies can try to find more appropriate proxy variables to drive more accurate empirical results.

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