‘Misinformation? What of it?’ Motivations and Individual Differences in Misinformation Sharing on Social Media

Xinran Chen
Wee Kim Wee School of Communication and Information, Nanyang Technological University
31 Nanyang Link, Singapore 637718
chen0872@ntu.edu.sg

Sei-Ching Joanna Sin
Wee Kim Wee School of Communication and Information, Nanyang Technological University
31 Nanyang Link, Singapore 637718
joanna.sin@ntu.edu.sg

ABSTRACT
Misinformation is common on social media. This causes misunderstanding and compromises the credibility of the medium. What motivates individuals to share inaccurate information? Are there individual differences? This study surveyed 171 university students on 16 motivations. Potential differences in motivations by gender and the Big Five personality traits were tested with multiple regression. The study found that the respondents considered truthfulness to be quite important, but over two-thirds of them had still shared misinformation. The top motivations of misinformation sharing were: to obtain others’ opinions on that information, to express own opinions, and to interact with others. Gender showed no significant differences, but personality did. Extroverts, for example, were more prone to share misinformation for socializing purpose. The findings suggest that it is beneficial to include affective and motivational factors in information behavior research. Information literacy training may also draw from the attitude change literature to deliver training that combines knowledge on information evaluation and sharing with affective messages that target individuals’ motivations such as their interest in self-expression.

Keywords
Misinformation, information sharing behavior, motivations

INTRODUCTION
Social media, such as Twitter and Facebook, which are online applications that facilitate the creation and exchange of user-generated content, can be a powerful, democratic, and up-to-date information source. Unfortunately, misinformation—defined as information that has been shown to be inaccurate—is rampant in this medium (Karlova & Fisher, 2013). Catchiness, rather than truthfulness, often drives information diffusion on social media (Ratkiewicz et al., 2010). If the message receiver is discerning, misinformation may still offer informational value. Even so, the extent of misinformation and the speed in which it travels through social media is troubling. This not only causes misunderstandings and negative emotions, but also compromises the credibility of social media. It impedes the further effective use of social media’s information content (Budak, Agrawal, & Abbadi, 2011).

Computer scientists are working to tackle misinformation ex post facto, chiefly by developing algorithms to detect low quality information (e.g., Budak, Agrawal, & Abbadi, 2011; Ratkiewicz et al., 2010). Library and Information Science (LIS) researchers, with their strong expertise in information quality, human information behavior (IB), and information literacy (IL), can help reduce the spreading behavior itself. An area yet to be explored is the individual differences in motivations to forward inaccurate information on social media. In light of this gap, this study explored two research questions (RQ): (1) What are the motivations behind an individual’s misinformation sharing on social media? and (2) Are there gender and personality differences in these motivations?

This study contributes to understanding and ultimately reducing the spread of misinformation on social media. Information quality is a core LIS concern (Rieh, 2002). In addition to the need to teach evaluation skills, the surge in user-generated content heightens the need to empower individuals as judicious content contributors. The present study is relevant to IB (particularly collaborative IB) and IL research. In addition, IB scholars have called for more studies of affective factors (Julien, McKechnie, & Hart, 2005; Nahl & Bilal, 2007). This study’s inclusion of affective motivations, such as enjoyment and escapism, contributes to that research front. From a practical perspective, this study’s findings on individual motivations can inform personalized IL training on information sharing.

LITERATURE REVIEW
Interest in misinformation can be traced back to related research on rumor that predates the digital age. In their seminal book, The Psychology of Rumor, Allport and Postman (1947) indicated that rumor-mongering is motivated by the desire to extract meaning from one’s environment and to relieve and justify one’s emotions, such as anxiety. While rumor (unsubstantiated information that may or may not be accurate) is conceptually distinct from misinformation, the rumor literature suggests that it is

ASIST 2013, November 1-6, 2013, Montreal, Quebec, Canada.
promising to study the influences of motivational and emotional factors.

Few studies exist on what motivates misinformation sharing on social media, which is the focus of RQ1 of the current study. However, there is literature on what motivates social media use. Many of these studies draw from the Uses and Gratification Theory (U&G). Categories of motivation vary across studies, but to cite a few, they include: entertainment, socializing, status seeking and information seeking in news sharing (Lee & Ma, 2012) and in Facebook Groups participation (Park, Kee, & Valenzuela, 2009); communication, friending, identity creation and management, entertainment, information search, and more, in young girls’ use of social networking sites (Dunne, Lawlor, & Rowley, 2010); intrinsic (enjoyment, commitment to the online community) and extrinsic (self-development, reputation) motivations in photo sharing on Flickr (Nov, Naaman, & Ye, 2009); and entertainment, socialization, and relationship maintenance in mobile gaming (Lee, Goh, Chua, & Ang, 2010).

Marett and Joshi’s (2009) study on the spread of rumor in a sports discussion forum also suggests the significance of researching individual motivations. Their study focused on three factors: intrinsic motivation, extrinsic motivation, and normative influence. All three were found to be positively related to the spread of rumor (Marett & Joshi, 2009). While the difference between posters and lurkers was tested, the study did not test demographic differences. Other individual differences warrant exploration. With the rise of the user-centered paradigm, scholars have uncovered considerable individual variations in IB. Among them are gender and personality differences, which have been the focus of some IB and social media research (Correa, Hinsley, & de Zúñiga, 2010; Fisher & Julien, 2009; Heinstrom, 2006; Lim & Kwon, 2010; Sin & Kim, 2013). This recognition of individual diversity informed our RQ2.

**METHOD**

The study used a questionnaire that covered behavior and motivations of misinformation sharing, demographics, and personality traits. The questionnaire was pilot tested. The final version included 16 motivations developed from the motivation categories mentioned above. Personality traits were measured using the established 44-item Big Five Inventory (John, Naumann, & Soto, 2008), which belongs to the Five Factor Model that has been frequently employed in social media and IB research (e.g., Heinstrom, 2006). Moreover, concrete examples were provided to give respondents a clear sense of what misinformation means.

The respondents were university students under 30 years old who were social media users. This population was selected because they tend to be comfortable with social media and technology. Participation was voluntary. Hard copies of the questionnaire were distributed around the campuses of two universities using convenience sampling. An electronic version was also available to the participants. The data analysis involved descriptive statistics, factor analysis, and multiple regression conducted with SPSS.

**FINDINGS**

The study collected 171 responses. There were more female (n = 86, 60.2%) than male respondents (n = 68, 39.8%). The age range was from 18 to 29 years old, with a mean of 24 (SD = 2.1). There was an almost equal number of undergraduate (n = 85) and graduate students (n = 86). All respondents (n = 171) used social media; 74.8% of them used more than one platform. Many were frequent users, with 81.3% of them using social media every day.

**Misinformation: Awareness and Behavior**

The participants considered truthfulness quite important when sharing information on social media (M = 3.85, where 5 represented “very important,” SD = 0.97). Nevertheless, more than two-thirds of the respondents (n = 116, 67.8%) indicated that they had shared misinformation on social media themselves. A much higher portion of the respondents (n = 162, 94.7%) said that they had seen other people share misinformation on social media.

**RQ1: Motivations of Misinformation Sharing**

The respondents were asked to rate the extent to which they agreed that a motivation applied to their decision to share misinformation on social media (Table 1). Out of the 16 motivations, the top three were: to get others’ opinions (M = 5.02, with 7 signifying complete agreement), to express their own opinions (M = 4.95, SD = 1.44), and to interact with others (M = 4.89, SD = 1.51). The three lowest scored motivations were: to be the first to share (M = 3.37, SD = 1.57), to look good to others (M = 3.48, SD = 1.58), and to feel influential (M = 3.74, SD = 1.78).

**RQ2: Individual Differences in Motivations**

The dimensions of the motivations were extracted using a factor analysis with a varimax rotation (Table 1). The suitability of the factor analysis was supported by the Kaiser-Meyer-Olkin measure of sampling adequacy (.88) and Bartlett’s test of sphericity, χ² (120, N = 171) = 1742.06, p = .000. Based on the Kaiser’s Criterion (eigenvalue > 1), the analysis yielded a four-factor solution. This accounted for 72.55% of the total variance. The four empirical groupings from the factor analysis can largely be mapped to several of the U&G categories mentioned above. That is, Factor 1: Entertainment; Factor 2: Information Seeking; Factor 3: Socializing; and Factor 4: Self-expression and Status Seeking. The reliability analysis showed that the Cronbach’s alphas for the four factors ranged from 0.77 to 0.9. These meet the recommended level of 0.7 and suggest a satisfactory level of internal consistency. The factor scores for each respondent were thus used for the subsequent multiple regression analysis.
Four multiple regression tests were conducted, one for each of the four factors identified above. Table 2 shows their standardized betas (β). The variance explained by the variables (R^2) ranged from 20% (Factor 1) to 29% (Factor 3). Two personality traits were found to be significant.

Respondents with higher extraversion were more likely than introverted individuals to share misinformation for socializing motivations (Factor 3, β = .25, p = .003). Respondents with high conscientiousness, in contrast, were less likely to share misinformation for self-expression and status seeking motivations (Factor 4, β = -.16, p = .044). The tests found no significant gender difference.

<table>
<thead>
<tr>
<th>Motivations of Sharing Misinformation</th>
<th>Mean</th>
<th>S.D.</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharing helps me get other people’s opinions regarding the information/event.</td>
<td>5.02</td>
<td>1.46</td>
<td>0.73</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I can express my opinion by sharing that information.</td>
<td>4.95</td>
<td>1.44</td>
<td></td>
<td>0.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharing helps me interact with people.</td>
<td>4.89</td>
<td>1.51</td>
<td>0.83</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharing helps me keep updated on last happenings.</td>
<td>4.83</td>
<td>1.61</td>
<td>0.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharing helps me keep in touch with friends.</td>
<td>4.75</td>
<td>1.67</td>
<td>0.89</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharing helps me get other related information.</td>
<td>4.75</td>
<td>1.57</td>
<td>0.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharing helps me bookmark useful information.</td>
<td>4.69</td>
<td>1.73</td>
<td>0.76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharing is good for keeping boredom away.</td>
<td>4.50</td>
<td>1.53</td>
<td>0.78</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel enjoyable while sharing.</td>
<td>4.39</td>
<td>1.37</td>
<td>0.73</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharing is a good way to relax.</td>
<td>4.25</td>
<td>1.61</td>
<td>0.83</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharing is a culture and I share like others do.</td>
<td>4.24</td>
<td>1.62</td>
<td></td>
<td>0.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharing is a good way of killing time.</td>
<td>4.23</td>
<td>1.57</td>
<td>0.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharing helps me enhance interpersonal relations.</td>
<td>4.12</td>
<td>1.74</td>
<td>0.55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharing makes me feel influential.</td>
<td>3.74</td>
<td>1.78</td>
<td></td>
<td></td>
<td>0.73</td>
<td></td>
</tr>
<tr>
<td>Sharing makes me look good to others.</td>
<td>3.48</td>
<td>1.58</td>
<td>0.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I want to be the first one among others to share.</td>
<td>3.37</td>
<td>1.57</td>
<td></td>
<td></td>
<td></td>
<td>0.74</td>
</tr>
</tbody>
</table>

| Eigenvalue | 3.52 | 3.06 | 2.62 | 2.41 |
| Cronbach’s Alpha | 0.90 | 0.87 | 0.84 | 0.77 |

Table 1. Motivations of misinformation sharing: descriptive statistics and factor analysis results

Note: Factor 1: Entertainment; Factor 2: Information seeking; Factor 3: Socializing; and Factor 4: Self-expression and status seeking

DISCUSSION

The study found that the respondents were cognizant of the norms of information sharing—truthfulness was generally deemed important. Nevertheless, it may not be deemed important enough to deter the respondents from sharing misinformation on social media. This suggests that misinformation sharing may be similar to other aspects of human behavior, such as health behavior (Valente, Paredes, & Poppe, 1998) and information source selection (Kim & Sin, 2011), in which knowledge does not always translate into action (i.e., a knowledge-behavior gap).

The findings point to the benefits of studying individual motivations, which can shed light on the factors that override an individual’s concern for veracity. RQ1 showed that the top motivation was related to information seeking, the second motivation was self-expression, and the third was socializing. These non-information-related motivations warrant attention in IB study. Future studies may measure both information literacy skills and motivations to compare their relative impact. The RQ2 findings also suggest areas for personalized IL training. Extroverts tend to have fewer problems with information seeking in terms of feeling less time pressure, and having a higher likelihood of acquiring useful information by chance or through informal information sources (Heinström, 2003). The current findings suggest that attention is needed on another aspect—their behavior on information sharing.

There are implications for the approaches to IL education. Misinformation sharing may not be caused purely by a lack of information literacy awareness. Such actions can, in part, be propelled by other desires, such as self-expression and socializing. These motivations may be more notable in channels that are considered less academic (i.e., less serious), such as social media. The attitude and behavioral change literature suggests a multipronged approach that combines knowledge with messages that are high in emotion (Zanna & Rempel, 1988). Applying this to IL
training, trainers may include affective messages that are
tailored to student’s motivations when teaching information
evaluation and sharing skills. For example, when self-
expression and status seeking is a top motivation, IL
trainers could highlight the negative consequences of
misinformation sharing on the sharer’s reputation (e.g.,
being viewed as untrustworthy). Continuous IB research on
cognitive and affective factors, together with tailored IL
training that is sensitive to different motivations, will help
prepare individuals who can effectively and responsibly
leverage the full potential offered by social media.

REFERENCES
Allport, G. W., & Postman, L. (1947). The psychology of
the spread of misinformation in social networks. Paper
presented at the International World Wide Web
Conference, Hyderabad, India.
Who interacts on the Web?: The intersection of users’
personality and social media use. Computers in Human
Behavior, 26(2), 247-253.
people's use of online social networking sites – a uses and
gratifications perspective. Journal of Research in
Annual Review of Information Science and Technology,
43(1), 1-73.
Heinstrom, J. (2006). Broad exploration or precise
specficity: Two basic information seeking patterns
among students. Journal of the American Society for
Information Science and Technology, 57(11), 1440-1450.
Heinstrom, J. (2003). Five personality dimensions and their
influence on information behaviour. Information
Research, 9(1). Retrieved from
http://informationr.net/ir/9-1/paper165.html
to the integrative Big-Five trait taxonomy: History,
measurement, and conceptual issues. In O. P. John, R. W.
Robins & L. A. Pervin (Eds.), Handbook of personality:
Guilford Press.
Affective issues in library and information science
systems work: A content analysis. Library & Information
Science Research, 27(4), 453-466.
model of misinformation and disinformation for
understanding human information behaviour. Information
Research, 18(1). Retrieved from
http://informationr.net/ir/18-1/paper573.html
Kim, K.-S., & Sin, S.-C. J. (2011). Selecting quality
sources: Bridging the gap between the perception and use
of information sources. Journal of Information Science,
37(2), 178-188.
(2010). Indigator: Investigating perceived gratifications
of an application that blends mobile content sharing with
gameplay. Journal of the American Society for
Information Science and Technology, 61(6), 1244-1257.
Lee, C. S., & Ma, L. (2012). News sharing in social media:
The effect of gratifications and prior experience.
Computers in Human Behavior, 28(2), 331-339.
Lim, S., & Kwon, N. (2010). Gender differences in
information behavior concerning Wikipedia, an
unorthodox information source? Library & Information
Science Research, 32(3), 212-220.
Marett, K., & Joshi, K. D. (2009). The decision to share
information and rumors: Examining the role of
motivation in an online discussion forum.
Communications of the Association for Information
Systems, 24(1), 47-68.
emergent affective paradigm in information behavior
Nov, O., Naaman, M., & Ye, C. (2009). Analysis of
participation in an online photo-sharing community: A
multidimensional perspective. Journal of the American
Society for Information Science and Technology, 61(3),
555-566.
immersed in social networking environment: Facebook
groups, uses and gratifications, and social outcomes.
CyberPsychology & Behavior, 12(6), 729-733.
Ratkiewicz, J., Conover, M., Meiss, M., Gonçalves, B.,
and tracking the spread of astroturf memes in microblog
streams. Paper presented at the Fifth International AAAI
Conference on Weblogs and Social Media, Barcelona,
Spain.
Rieh, S. Y. (2002). Judgment of information quality and
cognitive authority in the Web. Journal of the American
Society for Information Science and Technology, 53(2),
145-161.
Sin, S.-C. J., & Kim, K.-S. (2013). International students’
everyday life information seeking: The informational
value of social networking sites. Library & Information
Science Research, 35(2), 107-116.
Matching the message to the process: The relative
ordering of knowledge, attitudes, and practices in
behavior change research. Human Communication
Research, 24(3), 366-385.
look at an old concept. In D. Bar-Tal & A. W.
Kruglanski (Eds.), The social psychology of knowledge (pp. 315-