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KNOWLEDGE SHARING BEHAVIOR AMONG FLOOD VICTIMS IN MALAYSIA

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ABSTRACT

During a disaster, knowledge sharing plays an important role in helping save lives, delivering immediate relief, supporting victims and minimizing the effect of the disaster. This study investigates the determinant factors of individuals' knowledge-sharing intentions during a disaster. Social cognitive theory (SCT) is used as the underlying theory to predict victims' knowledge-sharing behavior. This study used a survey as its data collection technique. The respondents were victims who had shared knowledge during a flood. The data was analyzed using structural equation modeling with SmartPLS. The findings show that self-efficacy, social support, and social recognition significantly influence knowledge-sharing intention. However, reciprocity was not found to significantly influence knowledge-sharing intention. The findings suggest the flood victims' knowledge-sharing behaviors are strongly influenced by social recognition. Through this research, an initial conceptual model of the determinants of knowledge-sharing behavior is proposed.

Keywords: disaster management, flood in Malaysia, knowledge sharing, social cognitive theory.

INTRODUCTION

In the event of a disaster, sharing information effectively is vital as it can help save lives, provide immediate relief and support, and minimize the disaster's effects. According to the United Nations Disaster Assessment and Coordination Team, effective information sharing is important to help coordinate collective efforts among agencies in order to minimize the disaster's effects.

During a disaster, information is shared at many levels and is owned across different agencies (Kaklaukas, Amarantunga and Haigh, 2009; Zhang, Zhou and Nunamaker, 2009). Information sharing takes place when victims or agencies communicate information that triggers actions or decisions. According to Ahmad Dahlan et al. (2013), effective information sharing can help agencies that are involved in managing a disaster to reduce or control the potential losses and risks of the disaster, and to ensure that resources reach the victims immediately in order to facilitate quick and effective recovery.

Through effective information management, the relevant agencies can access the right information about the disaster, make the right decisions, and plan the appropriate actions. This leads to minimizing the effects of the disaster, reducing the loss, and quickly redeveloping the victims' well being (Yates and Paquette, 2011). During disaster management, information sharing should not be limited among the agencies only, but should also involve the individuals who are affected (i.e., victims) by the disaster. Through effective information sharing, they can receive information about the current situation and most importantly information about food, clothing, and medical supplies (Chatfield, Akbari, Mirzayi and Scholl, 2012; Majchrzak, Javernpaa and Hollingshead, 2007; Starbird, Palen, Hughes and Vieweg, 2010). Information sharing among victims is also important because it helps to calm down the victims who are waiting for rescue (Lu and Yang, 2011). According to Scaffidi, Myers and Shaw (2007), the continuous supply of information during a disaster event can help stabilize and reduce anxiety among victims.

Although the importance of information sharing among victims is acknowledged in the disaster management literature (Altay and Green, 2006; Bakillah, Li and Liang, 2014; Manoj and Baker, 2007), very few studies have focused on examining this behavior, especially at the individual level (i.e., victims). Most of the previous studies have been directed at examining information-sharing behavior at the agency or group levels (Chen, Chang and Tseng, 2012; Lever-Landis et al., 2003; Lin, 2007; Liu and Chen, 2005; Lpe, 2003). Meanwhile, in the knowledge-sharing literature, very few studies have examined this behavior from the disaster management perspective. Most of the research in the knowledge-sharing literature examines this behavior within the domains of education, business, and management (Bock and Kim, 2002; Lin, 2007; Liu and Chen, 2005; Lpe, 2003). Thus, to ensure a better understanding of information-sharing behavior, this study is designed to investigate the determinant factors of information-sharing behavior among flood victims in Malaysia.

a theoretical point of view, this study contributes to the body of knowledge by investigating the determinant factors that influence information-sharing behaviors among flood victims. This study adopts social cognitive theory (SCT) (Bandura, 1986) as its underlying theory. This study also contributes to the body of knowledge by extending the application of SCT to an examination of individual behaviors within the disaster management domain. To the best of our knowledge, SCT has mainly been used within the management, health, and education context. This study is one of the first to extend the use of this theory to the disaster management domain.

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THEORETICAL BACKGROUND

Social Cognitive Theory (SCT)

In order to examine the determinants of individual knowledge-sharing behavior during the occurrence of a disaster, the authors used SCT to conceptualize a research model for this study. SCT plays an important role in understanding knowledge-sharing. SCT was proposed by Bandura (1986) and is a widely accepted theory that provides a critical perspective for examining the reasons why individuals adopt certain attitudes. In the SCT model Figure-1 behavior, personal factors and environment factors interact to determine individual behavior (Wood and Bandura, 1989). These three elements influence each other.

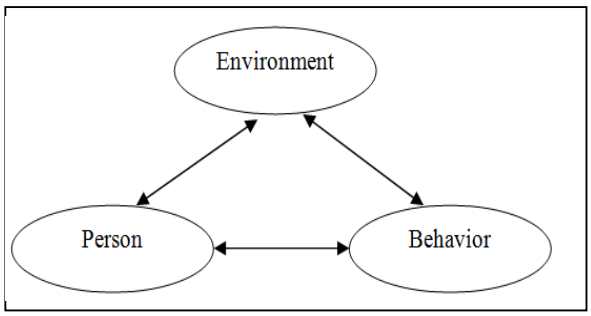

Figure-1. Elements of social cognitive theory model.

Previous research has demonstrated the use of SCT in various domains such as organizational management, health, and education. In health, this theory has been used to predict lifestyle behavior for the prevention of osteoporosis (Lever-Landis et al., 2003). In informatin technology, SCT has been applied to study loyalty in online communities (Lin, 2010). However, in the disaster management context, there is a lack of research examining individual behaviors in sharing knowledge. Thus, SCT is an appropriate model to examine the reasons why individuals adopt certain attitudes during a disaster event. According to SCT, two concepts are relevant in examining individual behavior, namely, self-efficacy and outcome expectations (including personal outcome expectations and community outcome expectations).

Self-Efficacy

Bandura (1986) defines self-efficacy as an individual's considerations of their ability to plan and execute actions and tasks. In other words, self-efficacy refers to the individual's belief in their ability to do certain actions. It also involves the individual's self-evaluation regarding their actions, efforts, and diligence in making decisions (Lin, Huang and Chen, 2009). Self-efficacy has been found to positively affect the individual's decision to execute certain tasks (Bandura, 1982, 1986; Igbaria and Livari, 1995). An individual with high self-efficacy will feel confident in doing a task, compared to those with low self-efficacy. Individuals with low self-efficacy believe they are not able to perform the task or action (Schunk, 1990).

Previous studies have shown that self-efficacy affects human attitudes positively when sharing information (Bock and Kim, 2002; Hsu, Ju, Yen and Chang, 2007; Tamjidyamcholo, Bin Baba, Tamjid and Gholipour, 2013; Wasko and Faraj, 2005). For instance, Constant, Kiesler and Sproull (1994) found that when a sender gives accurate and meaningful information, it increases their confidence level and promotes positive information-sharing behavior. Self-efficacy is considered as one of the main motivations for individuals to share information (Bock and Kim, 2002). This is because sharing information requires the individual to have the ability to clearly and confidently share their information with others (Hsu et al., 2007).

Within the disaster management context, self-efficacy is proposed to have an influence on individuals' information-sharing behaviors. This is because, during a disaster event, victims with higher levels of self-efficacy will usually demonstrate more positive behaviors, especially in regard to helping others (Benight et al., 1997; Murphy, 1987). Individuals with high self-efficacy are more likely to share their feelings and emotions to help calm others and control the situation (Benight et al., 1999; Benight and Bandura, 2004; Paton and Jackson, 2002). This study proposes that individuals with high levels of self-efficacy are more likely to share their information with others during a disaster event of disaster. Thus, this study hypothesized:

H1. Information-sharing intention is positively influenced by self-efficacy.

Outcome Expectations

SCT posits that an individual's behavior is influenced by the outcome they expect from conducting a task or action. Bandura (1997) defines an individual's outcome expectation as the individual's belief that they might receive certain benefits from carrying out a certain task. In the information-sharing context, individual outcome expectations can be categorized as personal outcome expectations and community outcome expectations (Bock and Kim, 2002; Compeau, Higgins and Huff, 1999; Kankanhalli, Tan and Wei, 2005).

Personal outcome expectations refer to individuals' beliefs that by sharing information they might achieve certain tangible rewards or goals (Bock and Kim, 2002; Compeau and Higgins, 1995, 1999; Kankanhalli et al., 2005; Wasko and Faraj, 2005). For instance, an individual is motivated to share information when they believe there will be an act of reciprocity (Hsu *et al*., 2007). An act of reciprocity is important because the individual believes that sharing information with those who need it might lead to others helping him/her in the future (Bock and Kim, 2002; Davenport and Prusak, 1998; Lu and Yang, 2011; Paton, 2003).

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Community outcome expectations refer to the individual's belief that they might achieve internal satisfaction from helping others who require their information (Kankanhalli *et al*., 2005). For instance, an individual is expected to share information when they believe that it can help them achieve social respect from others (Andrew, 2002).

In this study, personal outcome expectations are represented by the individual's belief of reciprocity, and community outcome expectations are represented by social support and social recognition.

Personal Outcome Expectations

According to Blau (1964, p. 6), reciprocity implies "actions that are contingent on rewarding reactions from others and that cease when these expected reactions are not forthcoming". Kollock (1999) noted that reciprocity behavior can provide a feeling of responsibility to reciprocate back; the information contributor generally hopes that information will be received from others in the future in order to ensure ongoing supportive information sharing. In the information-sharing literature, it is evident that reciprocity has a positive effect on information-sharing behavior.

According to Davenport and Prusak (1998), reciprocity is one of the factors that drive people to share information. Individuals who share information believe that sharing information with others will lead to their own requests for information being met in the future. Bock and Kim (2002) also noted that the individual who has received help feels that in future they have to reciprocate the help, while Hsu et al. (2007) found that people are more motivated to share information in communities if there is the expectation of receiving better cooperation in return. In a disaster event, people are usually uncertain about information. Disaster victims need information relating to food, shelter or medical relief. Thus, people who have high levels of reciprocity will share as much information as possible in order to reduce the victims' feelings of uncertainty; by sharing all their information, they hope that other people will reciprocate in the future. Thus, this study hypothesized:

H2. Information-sharing intention is positively influenced by the individual's belief of reciprocity.

Community outcome expectations

Social support is defined as the sharing of verbal and non-verbal messages in order to express emotions, information and referral; hence, social support can assist in reducing individuals' uncertainty (Walther and Boyd, 2002). In a disaster event, social support is considered to be a necessary protective factor. It has been shown to reduce stress and depression and to increase health (Benight and Bandura, 2004). Usually, during a disaster event, victims feel uncertain about the information that they have. Thus, victims' uncertainty can be reduced through the social support given or received by others through information-sharing activities.

According to the information-sharing literature, individuals are more likely to share information if they believe by sharing information they can accomplish certain goals or fulfill their own personal satisfaction (Chiu, Hsu and Wang, 2006; Hsu *et al*., 2007). Acknowledging the importance of social support during the event of a disaster, this study believes that the vast amount of such social support behavior shows that communities intend to share information and experience in an attempt to reduce the uncertainty surrounding a disaster. Further, by sharing knowledge, communities can be supported and the uncertainty about the disaster can be reduced. Thus this study hypothesized:

H3. Information-sharing attitude is positively influenced by social support.

In the knowledge-sharing literature concerning social recognition, understanding knowledge-sharing behavior has been the focus of researchers (Cabrera and Cabrera, 2002; Hsu et al., 2007; Kankanhalli et al., 2005; Maholtra and Galletta, 2002). For instance, according to Cabrera and Cabrera (2002), individuals feel more meaningful when they receive social recognition from others compared to receiving pecuniary rewards. Kankanhalli et al. (2005) noted that, if individuals believe they can obtain intrinsic benefits such as social recognition, they are willing to share knowledge. The literature suggests that increased recognition by the community can be a primary factor in motivating an individual to contribute knowledge (Constant et al., 1994; Hall, 2001; Kollock, 1999). Mathbor (2007) found that individuals who voluntarily shared knowledge in a disaster event are thankful for the social recognition of their efforts to help others in their communities. Volunteers show attitudes such as sincerity and commitment to the fundamental principles of humanity, voluntary service, unity and universality. In addition, the absence of recognition systems may frustrate individuals' efforts to share knowledge (Riege, 2005). Thus, individuals consider recognition as the net gain without hoping for any other form of reward. Therefore, this study believes that social recognition is an important factor in predicting knowledge-sharing intentions during a disaster event.

H4. Knowledge-sharing intention is positively influenced by social recognition.

Research Model

Figure-2 illustrates the conceptual model for this study. Based on this research model, information-sharing intention is predicted to be positively influenced by self-efficacy, reciprocity, social support, and social recognition.

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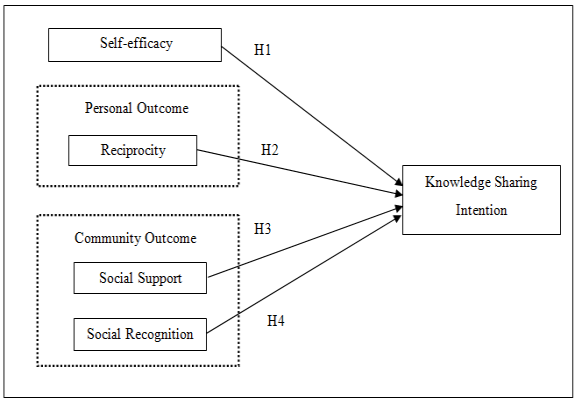

Figure-2. Conceptual model.

For the purposes of this study, it is proposed that knowledge-sharing intention is influenced by self-efficacy, personal outcome expectations and community outcome expectations. Personal outcome expectations are represented by an individual's belief in reciprocity, and community outcome expectations are represented by social support and social recognition.

METHODOLOGY

Data Collection

The research instrument for this study was adopted from previous works in the literature (Lin, 2007; Lin, 2010; Lin and Huang, 2008; Lin et al., 2009; Tohidinia and Mosakhani, 2010). The questionnaire consisted of 20 items. Modifications were made to the original items to ensure each item fitted the context of this study. All the items were anchored using a seven-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (7).

The content validity of the research instrument was established by consulting a group of experts (i.e., senior lecturers and associate professor) in the field of information systems and research methodology. Based on their feedback, minor word changes were made and no item was dropped.

A pilot study was conducted to determine the reliability of the instrument. The pilot study was carried out using the actual data collection procedures. It involved 30 flood victims in Kelantan. The measurements and structural model were analyzed using SmartPLS; the analysis indicated that the research instruments demonstrated satisfactory reliability and validity.

Questionnaires were distributed to 175 victims who had been relocated to evacuation centers in Rantau Panjang, Kelantan, following a flood disaster. Of these, 120 questionnaires were returned and 108 complete responses were used for data analysis.

The partial least square (PLS) technique was used to analyze the data. This technique has the ability to predict the theoretical model (Sosik, Kahai and Piovoso, 2009). Since the main objective of this study is to investigate the determinant factors of flood victims' knowledge-sharing behavior, PLS was selected as the analysis technique. Smart PLS 2.0 software was used to analyze the measurements and the structural model.

RESULTS

Demographic Information

The majority of the respondents were female (65.74%), with 11.27% aged below 20 years, 36.62% aged between 21 and 30 years, 25.35% aged between 31 and 40 years, 15.49% aged between 41 and 50 years, and 11.27% aged at least 51 years. Regarding the level of education, 63.89% of the respondents had graduated from high school and 36.11% held either a diploma or degree. Further, 78.70% of the respondents had been affected by flood less than 20 times, while 21.30% had experienced flood more than 20 times.

Measurement Model

The convergent validity of the research model was evaluated using Fornell and Larcker's (1981) two criteria: (1) all the indicators must be significant (at least at 0.05 value) and their loading should exceed 0.7; and (2) the average variance extracted (AVE) for each construct should exceed the variance due to measurement error for that construct (in other words, the AVE should exceed 0.50). Having analyzed the gathered data, this study obtained results as exhibited in Table 1 (Appendix 1). All item loadings exceeded 0.7 on their respective construct and were significant at $p < 0.001$. The AVE value for each construct was greater than 0.50, ranging from 0.6205 to 0.7082. Hence, both criteria for convergent validity were satisfied.

For discriminant validity, one of the most commonly used criteria in PLS is to ensure that the square root value of the AVE for each construct should be greater than the inter-correlations between constructs (Chin, 1998). The results Table-2 illustrate that all AVE square root values were greater than the inter-correlation values between constructs. Hence, the criterion for discriminant validity was satisfied.

Table-2. Intercorrelation matrix and AVE square root values.

	BP	KD	PS	SS	TB
BP	**0.7932**				
KD	0.5234	**0.7908**			
PS	0.5385	0.3694	**0.8415**		
SS	0.5784	0.5629	0.4694	**0.7907**	
TB	0.3419	0.4939	0.3917	0.4641	**0.7877**

(**BP = knowledge-sharing intention ; KD = self-efficacy ; PS = social recognition; SS = social support; TB = reciprocity).

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Structural Model

Figure-3 illustrates the results of the structural model. The model explains a significant amount of variance in the dependent variable (i.e., knowledge sharing intention) (R^2=0.4671), which is strongly influenced by social recognition (β=0.320, t=1.918, p<0.05), followed by social support (β=0.308, t=2.323, p<0.01) and self-efficacy (β=0.259, t=2.071, p<0.001).

Reciprocity (β=-0.054, t=0.570, n.s) was found to be not significant in influencing knowledge-sharing intention. Of the four proposed hypotheses, three (H1, H3, and H4) received statistical support, and one (H2) did not receive enough statistical support.

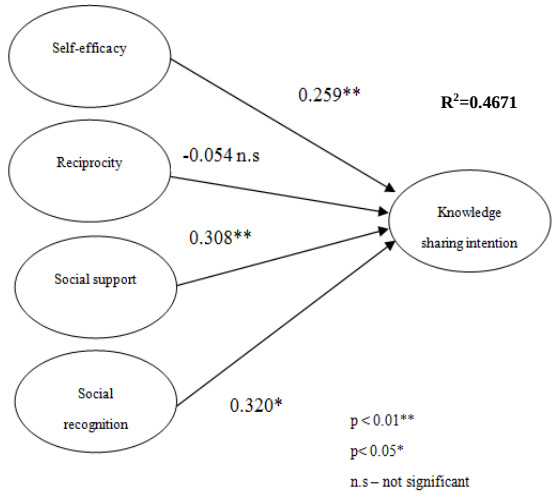

Figure-3. Results for the structural model.

DISCUSSIONS AND CONCLUSIONS

The main objective of this study is to examine the determinant factors that influence flood victims' knowledge-sharing behavior. Based on the proposed research model, this study predicted that flood victims' knowledge-sharing intention is influenced by self-efficacy, reciprocity, social support, and social recognition.

Having collected and analyzed the data, the results provide several key findings that validate part of the research model. First, the findings explain that flood victims' knowledge-sharing behavior is strongly influenced by social recognition. This result is in line with previous studies (Kankanhalli et al., 2005). Second, the study finds that flood victims' knowledge-sharing intention is influenced by self-efficacy and social support. This result is in line with Lin (2007) and Lin and Huang (2008).

Reciprocity is not found to significantly influence flood victims' knowledge-sharing intention. One plausible explanation for the non-significant result for reciprocity is the context of this study. The victims perhaps do not expect any consideration of the information provided. Previous research found that helping others is a factor of knowledge sharing. Helping others comes from the concept of altruism (Kankanhalli et al., 2005), which exists when people experience enjoyment in sharing knowledge without hoping for anything in return (Krebs, 1975; Smith, 1981). Knowledge contributors who derive positive feelings from helping others may be more willing to share knowledge. For instance, Lee and Cole (2003) noted that people voluntarily contribute their knowledge without expecting any rewards because they feel that helping others is more important. Thus, the individual has a sense of achievement and feels good about helping others by contributing knowledge during a disaster.

The main contribution of this paper to theory is the examination of the determination of flood victims' knowledge-sharing behavior. This is an early attempt to examine flood victims' knowledge-sharing behavior. The findings of this study provide researchers and practitioners with new insights into the determinants of flood victims' knowledge-sharing behavior.

This study contributes to practice through the potential of guidelines that can be used by the relevant authorities to promote knowledge sharing among flood victims. Based on the results, knowledge sharing among victims can be increased by inculcating knowledge-sharing behavior as a common practice in the community. This is because the results show that social support and social recognition are factors that lead to knowledge-sharing behavior.

The findings of this study also have social implications. Through the attitude of knowledge sharing practiced by the victims, the process of knowledge sharing will become more widespread. As a result, knowledge sharing among victim will embody the attitude of helping each other. Through knowledge sharing activities among victims will make their relationships become closer.

The results of this study must be interpreted with some caution due to two limitations. First, the results are not generalizable as this study collected data from one part of Malaysia (i.e., Rantau Panjang, Kelantan). Differences may exist in the demographic factors in flood-affected regions across Malaysia. Second, the victims involved in this study were from rural areas which typically have low education levels. The results might not be similar if this study is replicated in other countries (i.e., developing countries). In addition, a comparative analysis should also be conducted to observe the differences in the motivation between victims in rural and urban areas. It might be helpful for future research to examine the differences in motivation among victims in rural and urban areas. Examining these differences is worthwhile as it can lead to a better understanding of how these two groups of victims are different in regard to the determinants of their knowledge-sharing behavior.

In conclusion, SCT can be seen as a suitable approach to widen the understanding of the determinants of flood victims' knowledge-sharing behavior. The need to understand how to promote this theory in order to support knowledge sharing is essential. Future researchers are

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encouraged to include trust and expected relationships (Hsu and Lin, 2008) in their predictive model so that a more holistic understanding of the factors that influence flood victims' intentions to share knowledge can be formed.

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REFERENCES

Andrews D., (2002). Audience-specific online community design. Communications of the ACM, 45(4), pp. 64--68.

Altay N., and Green III, W.G. (2006). OR/MS research in disaster operations management. European Journal of Operational Research, 175(1), pp 475--493.

Bakillah M., Li R.Y., and Liang S.H.L. (2014). Geo-located community detection in twitter with enhanced fast-greedy optimization of modularity: the case study of typhoon Haiyan. International Journal of Geographical Information Science, pp. 1--22.

Bandura A. (1982). Self-efficacy mechanism in human agency. American Psychologist, 37(2), pp. 122--147.

Bandura A. (1986). Social foundations of thought and action. Englewood Cliffs, NJ: Prentice-Hall.

Bandura A. (1997). Self-efficacy: The exercise of control. Freeman, New York, NY.

Benight C.C., and Bandura A. (2004). Social cognitive theory of post traumatic recovery: the role of perceived self-efficacy. Behavior Research and Therapy, 42(10), pp. 1129--1148.

Benight C. C., Antoni M. H., Killbourn K., Ironson G., Kumar M. A., Fletcher M. A., Schneiderman. Redwine, L., Baum A. and Scheiderman N. (1997). Coping self-efficacy buffers psychological and physiological disturbances in HIV+ men following a natural disaster. Health Psychology, 16(3), pp. 248--255.

Benight C. C., Swift E., Sanger, J., Smith A., and Zeppelin D. (1999). Coping self-efficacy as a mediator of distress following a natural disaster. Journal of Applied Social Psychology, 29(12), pp. 2443--2464.

Blau P. M. (1964). Exchange and power in social life. John Wiley and Sons: New York.

Bock G. W., and Kim Y. G. (2002). Breaking the myths of rewards; an exploratory study of attitudes about knowledge sharing. Information Resources Management Journal, 15(2), pp. 14--21.

Cabrera A., and Cabrera E. F. (2002). Knowledge sharing dilemmas. Organization Studies, 23(5), pp. 687--710.

Chatfield A. T., Akhbari R., Mirzayi N., and Scholl, H. J. (2012). Interactive effects of networked publics and social media in transforming the public sphere: a survey of Iran's leaderless 'social media revolution'. Presented at the meeting of the 2012, 45th Hawaii International Conference on System Sciences.

Chin W.W. (1998). The partial least squares approach to structural equation modelling. In Marcoulides (Ed.), Modern Methods for Business Research. Mahwah: Lawrence Erlbaum Associates.

Chen C.W., Chang M.L., and Tseng, C.-P. (2012). Human factors of knowledge-sharing intention among Taiwanese enterprise: A model of hypotheses. Human Factors and Ergonomics and Services Industries, 22(4), pp.362--371.

Chiu C.M., Hsu M.H., and Wang E.T.G. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. Decision Support System, 42(3), pp.1872--1888.

Compeau D. R., and Higgins C. A. (1995). Computer self-efficacy development of a measure and initial test. MIS Quarterly 19(2), pp.189--211.

Compeau D. R., and Higgins C. A. (1999). Social cognitive theory and individual reactions to computing technology, a longitudinal study. MIS Quarterly, 23(2), pp.14--158.

Compeau D. R., Higgins C. A., and Huff S. (1999). Social cognitive theory and individual reactions to computing technology: a longitudinal study. MIS Quarterly, 23(2), pp. 145--158.

Constant D., Kiesler S., and Sproull L. (1994). What's mine is ours or is it? a study of attitudes about information sharing. Information Systems Research, 5(4), pp.400--421.

Ahmad Dahlan., Abdul Rahman., Mohd Dahan., Hayati., Mohd Saman,, and Md Yazid (2013). The success factors for Government Information Sharing (GIS) in natural disaster management and risk reduction. In: International Conference on ICT for the Muslim World (ICT4M) 2013, 25 - 27 March 2013, Rabat, Morocco.

Davenport T. H., and Prusak L. (1998). Working knowledge: how organizations manage what they know. Boston, Mass: Harvard Business School Press.

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Fornell C., and Larcker D.F. (1981). Evaluating structural equation models with unobservable and measurement error Journal of Marketing Research, 34(2), pp.161--188.

Hall H. (2001). Social Exchange for Knowledge Exchange. Managing Knowledge: Conversations and Critiques, University of Leicester Management Centre. April, pp. 10-11.

Hsu C. L., and Lin J.C.C. (2008). Acceptance of blog usage: The roles of technology acceptance, social influence and knowledge sharing motivation. Information and Management Journal, 45(1), pp. 65--74.

Hsu M.H., Ju T. L., Yen C.H., and Chang C.M. (2007). Knowledge sharing behavior in virtual communities; the relationship between trust, self efficacy, and outcome expectations. International Journal of Human-Computer Studies, 65(2), pp.153--169.

Igbaria M., and Livari J. (1995). The effects of self-efficacy on computer usage. Omega 23(6), pp.587--605.

Kankanhalli A., Tan C.Y.B. and Wei K.K. (2005). Contribution knowledge to electronic knowledge repositories; an empirical investigation. MIS Quarterly, 29(1), pp.113--143.

Kaklauskas A., Amarantunga D., and Haigh R. (2009). Knowledge model for post-disaster management. International Journal of Strategic Property Management, 13(2), pp.117--128.

Kollock P. (1999). The economies of on-line cooperation: gifts, and public goods in cyberspace. In: Smith, M.A., Kollock, P. (Eds.), Communities in Cyberspace. Routledge, London, 220--239.

Krebs D. L., (1975). Empathy and altruism. Journal of Personality and Social Psychology 32(6), pp.1132--1146.

Lever Landis., C. E., Burant C., Droatar D., Morgan, L, Trapl, E. and Kwoh, K. (2003). Social support, knowledge, and self-efficacy as correlates of osteoporosis preventive behaviors among preadolescent females. Journal of Pediatric Psychology, 28(5), pp. 335--345.

Lee G. K., and Cole R.E. (2003). From a firm-based to a community-based model of knowledge creation: the case of Linux kernel development. Organization Science, 14(6), pp. 633--649.

Liu C.C. and Chen S.Y. (2005). Determinants of knowledge sharing of e-learners. Journal Innovation and Learning, 2(4). pp. 434--445

Lin H. F. (2007). Effects of extrinsic and intrinsic motivation on employee knowledge sharing intentions. Journal of Information Science, 33(2), pp.135--149.

Lin C.P. (2010). Learning virtual community loyalty behavior from a perspective of social cognitive theory. International. Journal of Human-Computer Interaction. 26(4), pp.345--360

Lin M.J., Hung S.W., and Chen C.J. (2009). Fostering the determinants of knowledge sharing in professional virtual communities. Computers in Human Behavior, 25(4), pp. 929--939.

Lin T.C., and Huang C.C. (2008). Understanding knowledge management system usage antecedents: an integration of social cognitive theory and task technology fit. Information and Management Journal, 45(6), pp. 410--417.

Lpe M. (2003). Knowledge sharing in organizations: a conceptual framework. Human Resource Development Review, 2(4), pp. 337--359.

Lu Y., and Yang D. (2011). Information exchange in virtual communities under extreme disaster conditions. Decision Support Systems, 50(2), pp. 529--538.

Majchrzak A., Javernpa S., and Hollongshead A. (2007). Coordinating expertise among emergent groups responding to disasters. Organization Sciences, 18(1), pp. 147--161.

Malhotra Y., and Galletta D. F. (1998). An assessment of survey research in POM: from constructs to theory. Journal of Operations Management, 16(4), pp. 403--423.

Manoj B. S., and Baker A.H. (2007). Communication challenges in emergency response. Communication of the ACM, 50(3), pp. 51--53.

Mathbor G. M. (2007). Enhancement of community preparedness for natural disaster. International Social Works, 50(3), pp. 357--369.

Murphy S. A. (1987). Self-efficacy and social support mediators of stress on mental health following a natural disaster. Western Journal of Nursing Research, 9(1), pp. 58--86.

Paton D. (2003). Disaster preparedness: a social-cognitive theory. Disaster Prevention and Management, 12(3), pp. 210--216.

Paton D., and Jackson D. (2002). Developing disaster management capability: an assessment centre approach. Disaster Prevention and Management, 11(2), pp. 115--122.

©2006-2015 Asian Research Publishing Network (ARPN). All rights reserved.

Riege A. (2005). Three-dozen knowledge-sharing barriers managers must consider. Journal of Knowledge Management, 9(3), pp. 18--35.

Scaffidi C., Myers B., and Shaw M. (2007). Trial by water: creating Hurricane Katrina "person locator" web sites. in Weisband, S, ed. Leadership at a distance: research in technologically-supported work. Lawrence Erlbaum, Mahwa, NJ. pp. 209--222.

Schunk D. H. (1990). Goal setting., and self-efficacy during self-regulated learning. Educational Psychologist, 25(1), pp. 71—86.

Smith D. H. (1981). Altruism, volunteers, and volunteerism. Journal of Voluntary Action Research, 10(1) pp. 21--36.

Sosik J. J., Kahai S.S., and Piovoso M. J. (2009). Silver bullet or voodoo statistics? A primer for using the partial least squared data analytic technique in group and organization research. Group & Organization Management, 34(1), pp. 5--36.

Starbird C., Palen, L., Hughes A., and Vieweg, S. (2010). Chatter on the red: what hazards threat reveals about the social life of microblogged information Symposium conducted at the meeting of the CSCW'10 Proceedings of the 2010 ACM conference on Computer supported cooperative work, ACM New York, NY, USA.

Tamjidyamcholo A., Bin Baba M.S., Tamjid H., and Gholipour, R. (2013). Information security - Professional perceptions of knowledge-sharing intention under self-efficacy, trust, reciprocity, and shared-language. Computers & Education, 68, pp. 223--232.

Tohidinia Z., and Mosakhani M. (2010). Knowledge sharing behaviour and its predictors. Emerald Group Publishing Limited, 110(4), pp. 611--631.

Wood R., and Bandura A. (1989). Social cognitive theory of organizational management. Academy of Management Review, 4(3), pp. 361--384.

Walther J. B., and Boyd S. (2002). Attraction to computer-mediated social support. In C. A. Lin & D. Atkin (Eds.), Communication technology and society: Audience adoption and uses. pp.153--188. Cresskill, NJ: Hampton Press.

Wasko M. M., and Faraj S. (2005). Why should I share? Examining social capital and knowledge contribution in electronic networks of practice. MIS Quarterly, 29(1), pp. 35--58.

Yates D., and Paquette S. (2011). Emergency knowledge management and social media technologies: A case study of the 2010 Haitian earthquake. International Journal of Information Management, 31(1), pp. 6--13.

Zhang D., Zhou L., and Nunamaker F. Jr. (2002). A knowledge management framework for the support of decision making in humanitarian assistance/disaster relief. Knowledge and Information Systems, 4(3), pp. 370--385.

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Appendix-1

Table-1. Study results.

Construct	Item	Questions	Loading	T-Statistic	CR	AVE
Information-sharing Intention	BP1	I intend to share my information about a flood.	0.776	8.814	0.8700	0.6291
	BP2	I am likely to share my information with flood victims.	0.642	5.090		
	BP3	I try to share my information with flood victims.	0.878	27.551		
	BP4	I plan to share my information with flood victims.	0.855	20.924		
Self-efficacy	KD1	I am confident in my ability to provide information that flood victims consider to be valuable.	0.839	24.275	0.8692	0.6253
	KD2	I have the expertise required to provide valuable information to flood victims.	0.831	13.435		
	KD3	The level of my understanding about what to do during a flood is very high.	0.717	7.155		
	KD4	I have confidence in responding based on my knowledge when asked by flood victims.	0.770	13.094		
Reciprocity	TB1	I know that other individuals will help me if I help them.	0.807	9.645	0.8668	0.6205
	TB2	I believe that someone would help me if I were in a similar situation (as a flood victim).	0.854	13.148		
	TB3	It is fair to help flood victims when they want help.	0.773	10.170		
	TB4	I believe that I will reciprocate with the help that I give to flood victims.	0.710	6.131		
Social Support	SS1	I receive numerous advices from flood victims when I share my information with them.	0.814	23.755	0.8686	0.6252
	SS2	I receive information about the flood from flood victims when I share my information with them.	0.837	12.489		
	SS3	I receive sufficient assistance from flood victims when I share my information with them.	0.656	6.141		
	SS4	I can discuss issues and matters with flood victims when I share my knowledge.	0.841	22.694		
Social Recognition	PS1	Participating during a flood would enhance my personal reputation.	0.820	13.460	0.9066	0.7082
	PS2	Participating during a flood would improve my status.	0.852	16.353		
	PS3	I can improve my image when I share my knowledge with flood victims.	0.845	18.030		
	PS4	I can be an influential person when I share my knowledge with flood victims.	0.849	19.504		