

5-2018

# User Perspectives On Adoption Of A Hybrid Tagging System: A Case Of Topic Structure Of Zhihu Knowledge Community

Yaxi Liu

*Xidian University*, 804573848@qq.com

Jian Mou

*Xidian University*, jian.mou@xidian.edu.cn

Chunxiu Qin

*Xidian University*, cxqin@xidian.edu.cn

Pengwei Zhao

*Xidian University*, pwzhao@mail.xidian.edu.cn

Follow this and additional works at: <http://aisel.aisnet.org/confirm2018>

## Recommended Citation

Liu, Yaxi; Mou, Jian; Qin, Chunxiu; and Zhao, Pengwei, "User Perspectives On Adoption Of A Hybrid Tagging System: A Case Of Topic Structure Of Zhihu Knowledge Community" (2018). *CONF-IRM 2018 Proceedings*. 46.  
<http://aisel.aisnet.org/confirm2018/46>

This material is brought to you by the International Conference on Information Resources Management (CONF-IRM) at AIS Electronic Library (AISeL). It has been accepted for inclusion in CONF-IRM 2018 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# USER PERSPECTIVES ON ADOPTION OF A HYBRID TAGGING SYSTEM: A CASE OF TOPIC STRUCTURE OF ZHIHU KNOWLEDGE COMMUNITY

Yaxi Liu  
Xidian University  
804573848@qq.com

Chunxiu Qin  
Xidian University  
cxqin@xidian.edu.cn

Jian Mou  
Xidian University  
jian.mou@xidian.edu.cn

Pengwei Zhao  
Xidian University  
pwzhao@mail.xidian.edu.cn

## ***Abstract:***

Social tagging system has been prevalent thanks to its user-centric and flexible features. However, it suffers from its uncontrolled vocabulary and loose connection between tags. To overcome their drawbacks, a hybrid tagging system, which combines the ideas of the traditional taxonomy and social tagging, is adopted by some online knowledge communities. The top layers of the hybrid tagging system are determined by the website designer, while the bottom layers are constructed by users under certain restrictions. Due to the absence of sufficient research on user acceptance of this hybrid tagging system, cognitive factors affecting user adoption of the system is explored in this paper with topic structure of Zhihu, the famous Chinese knowledge community. An integrated model is proposed based on technology acceptance model and social cognitive theory. A survey will be conducted to empirically verify relationships between proposed constructs and actual usage. The research is expected to provide guidance for incremental improvement on a hybrid tagging system or development on new tagging systems.

## ***Keywords:***

User perspective; Adoption; A hybrid tagging system; Technology acceptance model; Social cognitive theory; Topic structure; Zhihu knowledge community

## **1 Introduction**

As one of the most typical applications of Web 2.0, the online knowledge community has become a huge dynamic knowledge repository for global knowledge sharing and knowledge innovation. As an integral component of the online knowledge community, social tagging, also known as folksonomy, has been prevalent and broadly used to mark the resources, which is more conducive to the retrieval, browsing, organization and creation of knowledge. With social tagging system, users are capable of adding free-form metadata to web resources of any type, such as web links (e.g. del.ici.ous), weblogs (e.g. Technorati), photographs (e.g. Flickr), videos (e.g. YouTube), academic articles (e.g. Connotea), book catalogue (e.g. LibraryThing) and so on (Caimei, Park, & Xiaohua, 2010). Unlike the rigid and complex classification system, users, even the novices, can participate in browsing,

retrieving, filtering, sharing and organizing the resources through this flexible and unrestrained system on their own initiative. However, it suffers from its uncontrolled vocabulary and loose connection between tags. Consequently, more and more attempts have been made with the purpose of incorporating social tagging system with the taxonomy so as to obtain the integrated advantages.

Zhihu, the biggest Chinese knowledge community, also uses such a hybrid tagging system entitled as topic structure. The topic structure allows users to annotate questions and knowledge resources. Compared with the original social tagging system, the topic structure of Zhihu is a hybrid tagging system with taxonomy on the top layers designed by the website developer and tags at the bottom layers constructed restrictedly by users.

As the hybrid tagging system is widely adopted to promote information organizing, sharing and innovating, it is important to figure out whether it actually absorbs the integrated strengths and is accepted by social mass. User perception has always been considered as an indispensable and essential item. The success of a system relies on user behavior intention (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989; Yen, Wu, Cheng, & Huang, 2010). Thus it attaches great significance to explore individual acceptance of a hybrid tagging system and find out critical elements that influence individual perception and behavior.

Technology acceptance model (TAM) points out that the individual intention to use a new system relies on attitude which is a function of perceived usefulness and perceived ease of use (Davis, 1989). Broadly used as it is, it has seldom been adopted to exploring user perception on a hybrid tagging system. Another important theory, social cognitive theory (SCT) which takes personal, behavioral and environmental determinants into consideration (Bandura, 2001), can be used as a good supplement of TAM. According to SCT, surrounding stimuli and factors have a large impact on the acquirement and sustainability of individual behavior patterns.

The proposed model has been developed based on the TAM and SCT. What's more, instead of previous studies that mainly lay emphasis on approaches to the combination of social tagging and traditional taxonomy, this paper concentrates on investigating factors affecting the adoption of a hybrid tagging system from user perspectives and will empirically verify their relationships with user actual usage. It will provide a comprehensive understanding of this classification system to researchers, which helps them recognize those key factors determining the success of online knowledge organization system and identify the future research direction. In addition, it can provide a foundation to the web designers, which is conducive to the improvement of the existing classification system and the construction of a new one. In conclusion, the investigation on this hybrid tagging system's adoption will promote resource description, information organization and knowledge discovery.

## **2 Literature review**

## 2.1 A hybrid tagging system

Taxonomy is a fundamental tool used to classify and organize information in a hierarchical structure (Sommaruga, Rota, & Catenazzi, 2011). If constructed appropriately, it allows elements to be presented precisely in order, which contributes to the navigation, organization and integration of information (Kiu & Tsui, 2011). But the construction of a taxonomy is a time-consuming and resource-demanding process (Tsui, Wang, Cheung, & Lau, 2010). Moreover, it needs constant updates and maintenance to ensure its accuracy and efficiency (Connelly, 2007).

Recently, with the expansion of online knowledge communities, the social tagging system has been prevalent and broadly used to classify and organize the resources. Social tagging, also known as collaborative tagging or folksonomy, is a user-centric method of indexing (Huang, Lin, & Chan, 2012). It's a process that users add metadata to the resources in the form of keyword-based tags (Golder & Huberman, 2006), contributing to a collaborative classification and organization mode. Different from the rigid and exclusive taxonomy, social tagging system takes on an inclusive and adaptable feature. Although it overcomes the disadvantages of taxonomy, it lacks hierarchical structure and vocabulary control.

Taxonomy classifies and organizes information in a prescriptive way, while folksonomy presents resources in an unrestricted manner. To overcome their drawbacks and obtain integrated strengths, more and more efforts are put into the combination of them.

In 2009, Lemieux pointed out that there mainly exists four approaches to combining folksonomy and taxonomy: (1) Coexistence: Both two methods are adopted simultaneously but independently. In that case, there is no connection between folksonomy and taxonomy and they have their own independent utility. (2) Taxonomy-Directed Folksonomy: An established taxonomy suggests controlled vocabulary for tagging through drop-down lists, tree view or other forms. Hayman and Lothian (2007) developed a portal named "myedna" where users could use controlled vocabulary from an education thesaurus for metadata generation and retrieval. (3) Folksonomy-Directed Taxonomy: Folksonomy provides new terms to formal taxonomies to ensure its continuous renewal. A novel algorithm was proposed to automatically integrate newly created tags into a hierarchical taxonomy (Tsui et al., 2010). (4) Folksonomy hierarchies/ontologies: Two types were proposed. While the user-powered allows users to spontaneously establish a structural relationship among tags, the automatic derivation refers to another approach where a folksonomy hierarchy/ontology is constructed automatically via clustering or statistical algorithms (Kiu & Tsui, 2011).

Recently, there emerged a new hybrid tagging system combining taxonomy and folksonomy. It is defined as a mechanism with top layers determined by the website designer and bottom layers constructed by users under certain restrictions. In the top layers, tags have already been programmed, which is a preliminary partition to the theme of top layers. On the one hand, the precision of classification is guaranteed. On the other, it facilitates the knowledge management in the community. In contrast, at bottom layers, tags are socially constructed by users under certain constraints. For this mechanism, tags and their relationships are both

determined by users. In addition, a child node may belong to more than one father node. Thus, the bottom of this tagging system is a combination of hierarchy and network structure. It can not only intensively reflect users' requirements or interests, but also reveal the multi-dimensional relationships among tags. With appropriate stipulations made by the web designer, users will regularize their behavior and take their personal edit more seriously.

This hybrid tagging system has already been adopted in online knowledge communities. The topic structure of Zhihu is essentially a representative. The top three layer topic structure, including the root node, has already been set up by the designer of Zhihu. At bottom layers, user spontaneously create topics (viz., tags) for questions and add hyponymy relationship to the topics. More specifically, people can not only give an aliases to topics, but also define a hierarchical relationship between the parent topics and the subtopics, coming into being the topic structure of Zhihu. However, all these public edit are restrained to some conditions. Only users who owned five answers endorsed by five people can be entitled to participate in public edit. Moreover, topics generated by users will be checked to ensure their rationality and accuracy.

A hybrid tagging system has fully absorbed the thoughts of traditional information organization methods and the advantages of the user-centric folksonomy, contributing to the organization and sharing of knowledge resources in online knowledge communities. By stimulating the participation and creativity of users, it will definitely exert a far-reaching influence on global knowledge management, sharing and innovation. Therefore, it attaches great significance to investigate this hybrid tagging system's adoption from user perspective, which makes for selecting it as our research subject.

## **2.2 Theoretical background**

### ***2.2.1 Technology acceptance model***

Proposed by Davis in 1986, the technology acceptance model (TAM) aims at pursuing an effective patterns of user behavior and analyzing various factors predicting user acceptance of a new information system being adopted in practice. It derives from theory of reasoned action (Fishbein & Ajzen, 1975) and is widely applied in the field of information systems or computer technology. The simplest form of TAM includes five constructs: perceived ease of use, perceived usefulness, attitude toward using, behavior intention to use and system usage (Davis, 1989).

Thanks to its conciseness and understandability, TAM has become one of the most well-known models and been broadly used as a predictor of actual system usage in the field of information science and information systems. With the variation of application environment, different constructs predicting user acceptance were proposed. Al-Daihani (2016) made a research on the undergraduate students' adoption of Twitter (social media as an information source) by adding perceived enjoyment and social influence constructs. Besides, researches based on TAM incorporating with other models and theories account for a great proportion. Combined with the IS success model, Saeed (2008) identified that the IS characteristics and

perceived usefulness had a pivotal impacts on individual post adoption behavior in IS.

Users' usage intention of the hybrid tagging system depends chiefly on usefulness and usability of this system. Thus, TAM can also be applied to predict user acceptance of the hybrid tagging system. According to a review on TAM, results of empirical researches are not always consistent, owing to the absence of some key constructs in the proposed model (Legris, Ingham, & Collette, 2003). In a summary, it's imperative to incorporate extra variables or theories depending on its adoption environment.

### ***2.2.2 Social cognitive theory***

Bandura (1986) first advanced social cognitive theory (SCT) to better explain human intention and behavior. SCT explains that the acquirement and sustainability of individual behavior patterns are influenced by the interaction of three key concepts: personal, behavioral and environmental determinants (Bandura, 2001).

Scarcely has SCT been applied wholly in the researches on user acceptance of a system. However, some of its sub-part have been regarded as core constructs by many researchers (Rana & Dwivedi, 2015). Constructs like self-efficacy and anxiety remain their original form in other studies. For instance, Lin identified that self-efficacy had a significant impact on KMS usage (Lin & Huang, 2008). There are also some constructs applied in their analogous way. Outcome expectations was considered to resemble the perceived usefulness of the TAM (Compeau & Higgins, 1995) and performance expectancy of the UTAUT (Rana & Dwivedi, 2015). Similarly, affect defined as user affective reaction has been indicated to originate from attitude toward using a system of the TAM (Venkatesh, Morris, Davis, & Davis, 2003).

On the basis of a literature review on SCT, a meta-framework including three core dimension and its corresponding variables provides guidance for both theoretical and empirical research (Carillo, 2010). The hybrid tagging system plays an imperative role in online knowledge communities. Its target audience are exposed to a mass of stimuli and elements, such as others' usage or recommendation. Therefore, user behavior is definitely influenced by environmental factors. It is reasonable to introduce SCT to predict user behavior intention of a hybrid tagging system.

### ***2.2.3 Integration of TAM and SCT***

As it's insufficient to apply TAM or SCT alone, an attempt has been made here to merge TAM with SCT so as to build a more appropriate and applicable model. On the one hand, there exist some similar constructs shared by both TAM and SCT, which provides a point of convergence between these two theories. On the other hand, TAM only takes personal perception dimension into consideration. By contrast, SCT can not only provide extra key constructs to behavioral and personal dimensions to improve the validity of proposed model, but also fill in gaps that TAM creates by introducing environmental constructs. Overall, in our context, SCT is indeed the best candidate for complementing TAM.

Considering that a hybrid tagging system is a user-centric innovation, it attaches great significance to evaluate individual intention. Perceived usefulness and ease of use both are

efficient measurements in regard to reflect and predict user perception and behavior. Therefore, the five constructs in the simplest form of TAM were all adopted. Meanwhile, self-efficacy which can find root in SCT was concluded. For another, as this system are mainly employed by social platforms to enhance search service quality, its target audience are susceptible to others' opinion and usage. Thus, the environmental determinant plays an equally important role in the adoption of a hybrid tagging system. SCT identified three kinds of environment, imposed, selected and constructed environment respectively (Bandura, 1986). In the context of a hybrid tagging system, individuals has the freedom to decide whether use it or not. Although they may be influenced by the surroundings, the final choice is still theirs. Thus, neither imposed nor constructed environment was considered here. Consequently, social influence was chosen as the representative of the environmental factor. Realizing importance of variables in both theories, we developed an integrated model in the context of a hybrid tagging system.

### 3 Research methodology

#### 3.1 Research model and hypotheses

As illustrated in

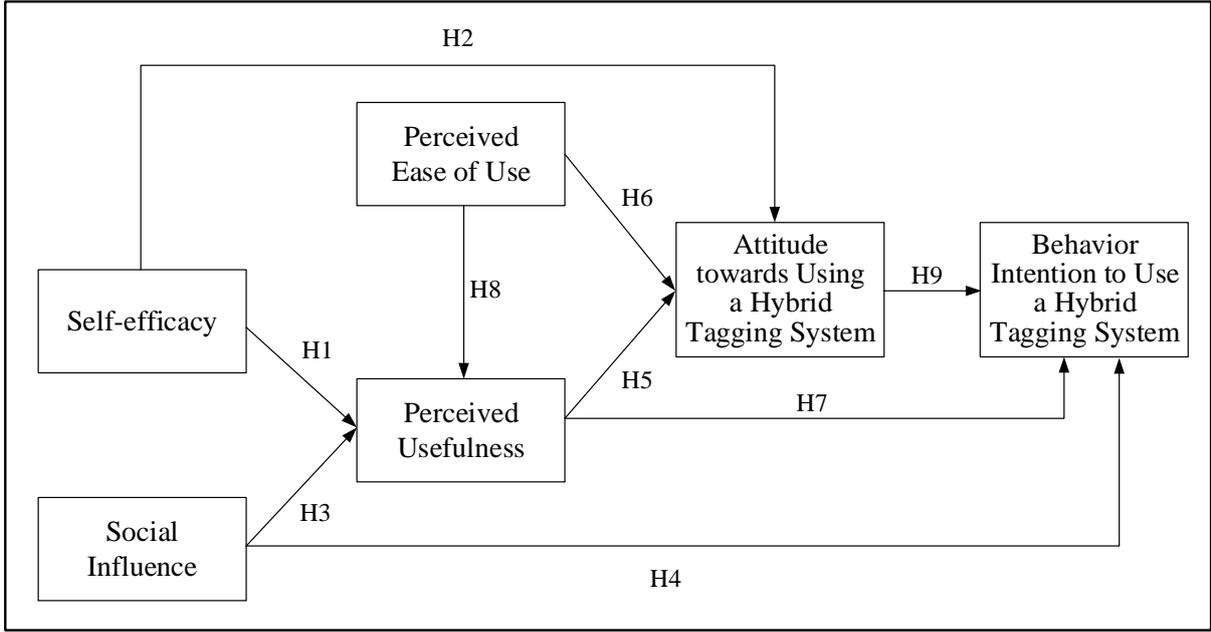


Figure 1, the research model integrates TAM with SCT and is composed of six constructs. Based on these constructs, nine hypotheses were proposed as follows.

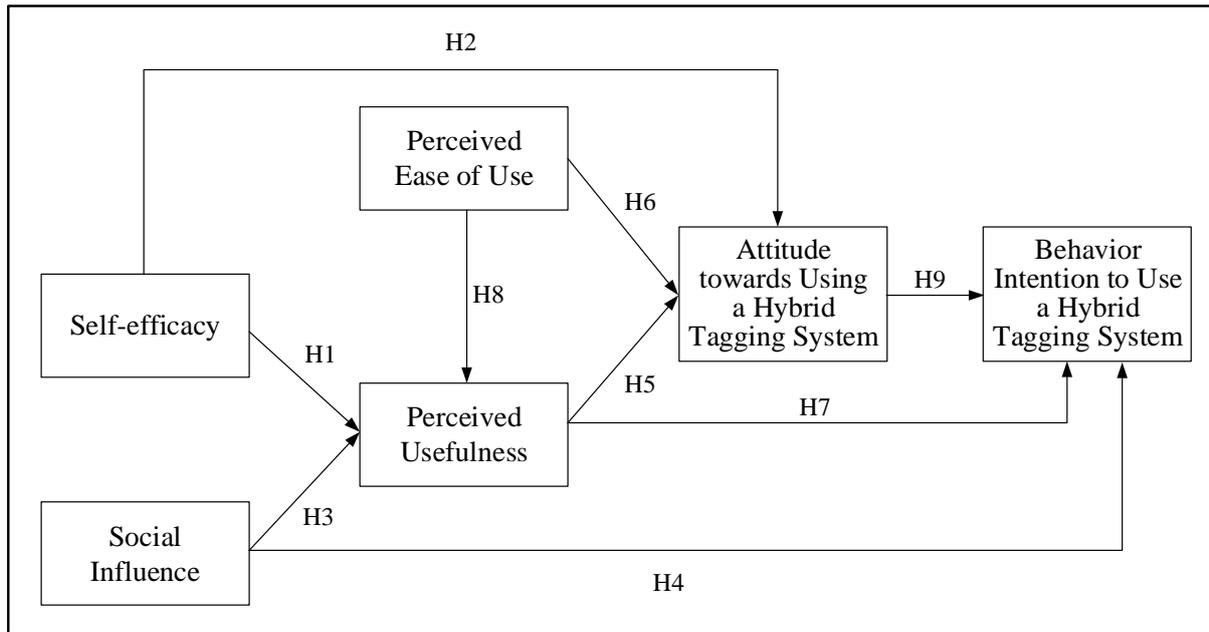


Figure 1 Proposed conceptual research model

### 3.1.1 Self-efficacy

Self-efficacy (SE) refers to the conviction that individual are competent for executing the behavior successfully so as to bring about the outcomes (Bandura, 1977). As posited in SCT, the higher the level of perceived self-efficacy, the higher the performance accomplishments (Bandura, 1982). In other words, SE exerts a positive influence on outcome expectations. It is validated to be factual through a large amount of researches (Lin & Huang, 2008; Rana & Dwivedi, 2015; Tsai & Cheng, 2010). As mentioned before, outcome expectation has wider application in its analogous form. Many researchers view it as PU in TAM (Compeau & Higgins, 1995; Davis, 1989; Davis et al., 1989; Rana & Dwivedi, 2015). Moreover, Davis (1989) first defined PU on the basis of SE theory. Therefore, enough evidence indicates that if users feel confident and believe in their ability to execute their purposes through a hybrid tagging system, both personal and performance-related consequences tend to be more favorable in all likelihood, which proves its usefulness perceived by users.

Affection and emotion expression are direct and outward reflection on individual attitude. It has been confirmed early that SE have a strong impact on individual's affective and emotional reactions to information technology (Compeau, Higgins, & Huff, 1999). This link has been verified in different application scenarios (Compeau & Higgins, 1995; Rana & Dwivedi, 2015). In our context, it's supposed that people would prefer to adopt a hybrid tagging system as long as they have a strong belief in using it freely and skillfully.

To be more specifically, as for a hybrid tagging system, tags are definitely regarded as hints at the needed resources. Thus, more confident users are in creating, modifying and employing tags, higher quality information they will obtain. Under the circumstances, users take it for granted that this system is predominant and would like to continue its usage.

Hence, there exists sufficient arguments supporting the following hypotheses: *H1*:

*Self-efficacy has a positive effect on perceived usefulness. H2: Self-efficacy has a positive effect on attitude towards using a hybrid tagging system.*

### **3.1.2 Social influence**

As defined by Venkatesh (2003), social influence (SI) refers to “the degree to which an individual perceives that other important persons believe he or she should use the technology/system”. This construct is similar to Subjective Norms, which is defined as “the perceived social pressure to perform or not to perform the behavior” (Ajzen, 1991). Since a hybrid tagging system such as the topic structure of zhihu is widely applied in social networking platforms and largely used by the social mass, users are highly possible to be affected by the surroundings and follow the encouragement or recommendation from their family, friends, colleagues and important others. However, it is an unconscious and freewill change in attitude and intention, not as defined by the Subjective Norm that individuals decide whether or not to execute the behavior on the basis of the perceived social pressure. This is the exact reason why we determined to opt for SI instead of Subjective Norms.

Concluded by many researchers, SI has been demonstrated to be a valid predictor of PU and BI (Al-Daihani, 2016; Atif, Richards, Busch, & Bilgin, 2015; Sabah, 2016). That is, people tend to perceive it favorable and beneficial, and be more willing to use it if important others frequently use a hybrid tagging system or recommend it to them.

Naturally, hypotheses are propounded on the basis of preceding elaboration: *H3: Social influence has a positive effect on perceived usefulness. H4: Social influence has a positive effect on behavior intention to use a hybrid tagging system.*

### **3.1.3 Perceived usefulness and perceived ease of use**

Perceived usefulness (PU), which is similar to outcome expectation of SCT, is defined as “the degree to which a person believes that using a particular system would enhance his or her job performance” (Davis, 1989). Tags constructed socially are a comprehensive reflection of resources that the majority are interested in or concerned about and are exactly cues to required and relevant information. What’s more, tags allow the questions proposed by users to be more accessible to others. In that case, not only different opinions can be obtained more easily and quickly, but also answers may well be adopted and endorsed by others. Thus, in the context of our study, PU covers three aspects: acquisition of more useful and relevant information, less time to handle proposed questions and improvement on sense of self-identity.

Perceived ease of use (PEOU) refers to “the degree to which a person believes that using a particular system would be free of effort” (Davis, 1989). A hybrid tagging system provides users with access to their objective in the form of tags. By simply clicking a tag or switching to another, users are able to seek what they required and realize the transition of search directions at the same time. To conclude, in the matter of a hybrid tagging system, PEOU indicates that both resource acquisition and search direction shift are free of effort.

According to TAM, PU and PEOU are deemed to be two fundamental determinants of the attitude (ATT). Furthermore, PU is a dominating determinant of individual intention,

whereas PEOU is only a primary moderate determinant (Davis, Bagozzi, & Warshaw, 1989). Data from previous researches is consistent with this posit (Al-Daihani, 2016; Al-Somali, Gholami, & Clegg, 2009; Lin & Chen, 2015; Yoon & Kim, 2017). It is also expected to exist here. If an individual perceives it both useful for enhancing outcome expectation and easy to utilize in the process of using a hybrid tagging system, he or she will be much likely to have a positive attitude and be delighted to use this system.

Therefore, hypotheses are then proposed as follows: *H5: Perceived usefulness has a positive effect on attitude towards using a hybrid tagging system. H6: Perceived ease of use has a positive effect on attitude towards using a hybrid tagging system. H7: Perceived usefulness has a positive effect on behavior intention to use a hybrid tagging system.*

Furthermore, Davis considered PEOU as an antecedent to PU (Davis, 1989), which is in accordance with other researches over the past years (Al-Daihani, 2016; Huang et al., 2012). In regard to a hybrid tagging system, this relationship is supposed to exist as well: the easier a hybrid tagging system is to interact with, the less time and energy spent to adopt it. For efforts can be saved and distributed to other matters, making a higher outcome expectation. Based on the previous findings and analysis, the following hypothesis is developed: *H8: Perceived ease of use has a positive effect on perceived usefulness.*

#### **3.1.4 Attitude**

Attitude (ATT) is defined as “an individual’s positive or negative feelings about performing the target behavior” (Ajzen & Fishbein, 1980). In our research, ATT represent the degree to which individuals have a partiality for applying a hybrid tagging system. In TAM, Davis et al. (1989) suggested that attitudes mediated the effects of PEOU and PU on personal intention. In different context such as common-use self-service (CUSS) system, online banking and cloud computing, the link between attitude and behavior intention has also been proved (Al-Somali et al., 2009; Asadi, Nilashi, Husin, & Yadegaridehkordi, 2016; Chen & Wu, 2014). In conclusion, individuals always mold intentions to execute their behaviors toward which they possess positive emotion. Thus, we assume that there exists a positive correlation between ATT and BI. That is, if a person possesses a positive attitude towards a hybrid tagging system, he may well intend to adopt it.

Consequently, a hypothesis is introduced as follows: *H9: Attitude towards using a hybrid tagging system has a positive effect on behavior intention to use a hybrid tagging system.*

#### **3.1.5 Behavior intention**

Behavior intention (BI) is defined as the cognitive representation of a person’s readiness to perform a given behavior and is the antecedent of behavior (Asadi et al., 2016; López-Nicolás, Molina-Castillo, & Bouwman, 2008; Wu, Lan, & Lee, 2011; Yen et al., 2010). It stands for the intention individuals possess to use a hybrid tagging system and can be regarded as a direct reflection of user actual behavior.

### **3.2 Measurement development**

To empirically analyze factors affecting user behavior intention to a hybrid tagging system,

a survey will be conducted with a questionnaire which is expected to be placed on the platform of Zhihu to collect data from 350 Zhihu users in China.

Construct	Definition of Constructs	Measurement items	References
Self-efficacy (SE)	It refers to the conviction that individual are competent for executing the behavior successfully so as to bring about the outcomes.	<i>The level of:</i> SE1: my understanding about the function of the topic structure is high. SE2: my ability to use the topic structure to acquire information is high. SE3: my confidence in using the topic structure is high.	Bandura (1977, 1982), Lin et al. (2008), Tsai et al. (2010), Rana et al. (2015).
Social influence (SI)	The degree to which an individual perceives that other important persons believe he or she should use a hybrid tagging system.	<i>if others use the topic structure of Zhihu or recommend me to use it:</i> SI1: I would consider it useful. SI2: I would use it to search resources. SI3: my decisions in using it would be greatly influenced.	Al-Daihani et al. (2016), Atif et al. (2015), Bandura (2001), Sabah et al. (2016), Venkatesh et al. (2003).
Perceived usefulness (PU)	The degree to which a person believes that using a particular system would enhance his or her job performance.	<i>Through the topic structure of Zhihu:</i> PU1: I can access a large number of information. PU2: I can acquire more relevant information. PU3: the questions I asked in Zhihu are solved more quickly. PU4: the resources I released can be noticed by more users. PU5: I improves my sense of self-identity.	Al-Somali et al. (2009), Davis (1989), Lin et al. (2015), Yoon et al. (2010).
Perceived ease of use (PEOU)	The degree to which a person believes that using a particular system would be free of effort.	PEOU1: It's easy for me to learn to use the topic structure. PEOU2: It's easy for me to use various functions provided by the topic structure. PEOU3: It's easy for me to change search directions through the topic structure. PEOU4: My interaction with the topic structure is clear and flexible.	Al-Daihani et al. (2016), Al-Somali et al. (2009), Davis (1989), Lin et al. (2015).
Attitude (ATT)	The degree to which individuals have a partiality for applying a hybrid tagging system.	ATT1: I enjoy using the topic structure. ATT2: Using the topic structure is a wise idea. ATT3: I'm glad to encourage others to use the topic structure.	Ajzen et al. (1980), Asadi et al. (2016), Chen et al. (2014).
Behavior intention (BI)	It is defined as the cognitive representation of a person's readiness to use a hybrid tagging system.	BI1: I frequently use the topic structure to search information. BI2: I will keep on using the topic structure regularly. BI3: I will recommend the topic structure to others.	López-Nicolás et al. (2008), Asadi et al. (2016), Yen et al. (2010), Wu et al. (2011).

Table 1 Constructs and measuring items

Table 1 presents the definition and measurement items for each construct. They were mostly selected from previous researches to ensure content validity of the scales. Three new items (PU4, PU5 and PEOU3 respectively) was proposed considering our context. With slight modification, all measurement items are well adapted to a hybrid tagging system. In addition, a seven-point Likert scale was employed to measure each item, with anchors ranging from “strongly disagree” (1) to “strongly agree” (7).

The proposed model will be tested by using AMOS, a software of structural equation model (SEM). In more detail, confirmatory factor analysis (CFA) will be conducted to evaluate the measurement model, whereas path analysis will be employed to examine the structural model.

## 4 Conclusion

The hybrid tagging system was first defined in this study. On the basis of previous literature, a specific model was proposed. In the next phase of this study, a questionnaire is expected to be placed on the platform of Zhihu to collect data from Zhihu users in China. Both measurement and structural model will be tested by using structural equation model (SEM). Furthermore, we will empirically analyze relevant cognitive factors affecting user behavior intention of a hybrid tagging system.

From an academic aspect, it is the first time for an integrated theory based on TAM and SCT to be applied in predicting user acceptance of a hybrid tagging system. Moreover, this proposed model may help researchers recognize relevant factors and identifies the future research direction. From a perspective on practical application, actual usage of a hybrid tagging system are affected by the proposed constructs at different degrees. The results will identify those highly related elements, which offers guidance for incremental improvement on a hybrid tagging system or development on new tagging systems. Besides, it is potentially useful to offer evidence on whether a hybrid tagging system should be popularized to more virtual communities.

## References

- Ajzen, I., & Fishbein, M. A. (1980). *Understanding Attitudes and Predicting Social Behavior* Prentice-Hall: Prentice-Hall.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- Al-Daihani, S. M. (2016). Students' adoption of Twitter as an information source: An exploratory study using the Technology Acceptance Model.pdf. *Malaysian Journal of Library & Information Science*, 21(3), 57-69.
- Al-Somali, S. A., Gholami, R., & Clegg, B. (2009). An investigation into the acceptance of online banking in Saudi Arabia. *Technovation*, 29(2), 130-141.
- Asadi, S., Nilashi, M., Husin, A. R. C., & Yadegaridehkordi, E. (2016). Customers perspectives on adoption of cloud computing in banking sector. *Information Technology and Management*, 18(4), 305-330.
- Atif, A., Richards, D., Busch, P., & Bilgin, A. (2015). Assuring graduate competency: a technology acceptance model for course guide tools. *Journal of Computing in Higher Education*, 27(2), 94-113.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215.

- Bandura, A. (1982). Self-Efficacy Mechanism in Human Agency. *American Psychologist*, 37(2), 122-147.
- Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*: Prentice Hall.
- Bandura, A. (2001). Social cognitive theory of mass communication. In J. Bryant & D. Zillman (Eds.), *Media effects: Advances in Theory and research* (pp. 121-153): Hillsdale, NJ: Lawrence Erlbaum.
- Caimei, L., Park, J.-r., & Xiaohua, H. (2010). User tags versus expert-assigned subject terms: A comparison of LibraryThing tags and Library of Congress Subject Headings. *Journal of Information Science*, 36(6), 763-779.
- Carillo, K. D. (2010). Social Cognitive Theory in IS Research – Literature Review, Criticism, and Research Agenda. *Communications in Computer & Information Science*, 54, 20-31.
- Chen, S. L., & Wu, I. F. (2014). Antecedents of intention to use CUSS system: moderating effects of self-efficacy. *Service Business*, 8(4), 615-634.
- Compeau, D., Higgins, C. A., & Huff, S. (1999). Social Cognitive Theory and Individual Reactions to Computing Technology: A Longitudinal Study. *MIS Quarterly*, 23(2), 145-158.
- Compeau, D. R., & Higgins, C. A. (1995). *Computer self-efficacy: development of a measure and initial test*: Society for Information Management and The Management Information Systems Research Center.
- Connelly, J. (2007). Eight Steps to Successful Taxonomy Design. *Information Management Journal*:41.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management Science*, 35(8), 982-1003.
- Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention and Behaviour: an introduction to theory and research*. MA: Addison-Wesley.
- Golder, S. A., & Huberman, B. A. (2006). Usage patterns of collaborative tagging systems. *Journal of Information Science*, 32(2), 198-208.
- Hayman, S., & Lothian, N. (2007). *Taxonomy directed folksonomies: Integrating user tagging and controlled vocabularies for Australian education networks*. Paper presented at the World Library and Information Congress: Ifla General Conference and Council.
- Huang, S.-L., Lin, S.-C., & Chan, Y.-C. (2012). Investigating effectiveness and user acceptance of semantic social tagging for knowledge sharing. *Information Processing & Management*, 48(4), 599-617.
- Kiu, C.-C., & Tsui, E. (2011). TaxoFolk: A hybrid taxonomy–folksonomy structure for knowledge classification and navigation. *Expert Systems with Applications*, 38(5), 6049-6058.
- Legris, P., Ingham, J., & Colletette, P. (2003). Why do people use information technology ? : a critical review of the technology acceptance model. *Information & Management*,

40(3), 191-204.

- Lin, H. F., & Chen, C. H. (2015). *Design and application of augmented reality query-answering system in mobile phone information navigation*: Pergamon Press, Inc.
- Lin, T.-C., & Huang, C.-C. (2008). Understanding knowledge management system usage antecedents: An integration of social cognitive theory and task technology fit. *Information & Management*, 45(6), 410-417.
- López-Nicolás, C., Molina-Castillo, F. J., & Bouwman, H. (2008). An assessment of advanced mobile services acceptance: Contributions from TAM and diffusion theory models. *Information & Management*, 45(6), 359-364.
- Rana, N. P., & Dwivedi, Y. K. (2015). Citizen's adoption of an e-government system: Validating extended social cognitive theory (SCT). *Government Information Quarterly*, 32(2), 172-181.
- Sabah, N. M. (2016). Exploring students' awareness and perceptions: Influencing factors and individual differences driving m-learning adoption. *Computers in Human Behavior*, 65, 522-533.
- Saeed, K. A., & Abdinnour-Helm, S. (2008). Examining the effects of information system characteristics and perceived usefulness on post adoption usage of information systems. *Information & Management*, 45(6), 376-386.
- Sommaruga, L., Rota, P., & Catenazzi, N. (2011). "Tagsonomy": Easy Access to Web Sites through a Combination of Taxonomy and Folksonomy. 86, 61-71.
- Tsai, M.-T., & Cheng, N.-C. (2010). Programmer perceptions of knowledge-sharing behavior under social cognitive theory. *Expert Systems with Applications*, 37(12), 8479-8485.
- Tsui, E., Wang, W. M., Cheung, C. F., & Lau, A. S. M. (2010). A concept-relationship acquisition and inference approach for hierarchical taxonomy construction from tags. *Information Processing & Management*, 46(1), 44-57.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: toward a unified view. *MIS Quarterly*, 27(3), 425-478.
- Wu, W. W., Lan, L. W., & Lee, Y. T. (2011). Exploring decisive factors affecting an organization's SaaS adoption: A case study. *International Journal of Information Management*, 31(6), 556-563.
- Yen, D. C., Wu, C. S., Cheng, F. F., & Huang, Y. W. (2010). Determinants of users' intention to adopt wireless technology: An empirical study by integrating TTF with TAM. *Computers in Human Behavior*, 26(5), 906-915.
- Yoon, A., & Kim, Y. (2017). Social scientists' data reuse behaviors: Exploring the roles of attitudinal beliefs, attitudes, norms, and data repositories. *Library & Information Science Research*, 39(3), 224-233.